Title: The Informal Waste Sector in the City of Ekurhuleni

Master of Science in Engineering by Research Only

A Dissertation submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, Johannesburg, in fulfilment of the requirements for the degree of Master of Science in Engineering

Irene N. Inan (nee Nyirenda)
Student No: 0208508J

Supervisor: Prof. Anne Fitchett

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Declaration

I declare that this dissertation is my own unaided work. It is being submitted for a Master of Science degree to the University of the Witwatersrand, Johannesburg. It has not been previously submitted for any degree or examination to any other university.

Signature:

Date: 18 February 2025

Abstract

In South Africa, landfilling has traditionally been the primary method for dealing with general municipal solid waste. However, in recent years, there has been a shift in focus towards promoting a circular economy, which has brought about a change in waste management practices. The focus is now on minimising waste generation and reducing the waste stream rather than simply disposing of it. This approach aligns with South African National Waste Management Strategy 2020, which encourages such practices.

The study focused on City of Ekurhuleni and the opportunities that exist in the formalisation of the informal waste sector with particular focus on landfill waste pickers and by analysing the amount of waste disposed of at the landfill site over a six (6) year period and comparing it to the percentage of materials that informal waste pickers recovered and reclaimed, the study provided valuable insights. This study utilised a mixed-method design that involved collecting and analysing both quantitative and qualitative data through desktop surveys, face-to-face interviews, and questionnaires.

The practice of informal recycling at landfill sites encounters numerous environmental and health hazards for those who reclaim materials, because the waste is not sorted before disposal. The municipality lacks adequate resources for waste reduction initiatives, regulatory framework and capacity, educational campaigns, and enforcements, unlike those carried out by private companies or organisations. The study highlighted that some of the key inconsistencies in the interpretation of informal sector activities and their integration thereof in the context of the municipal regulatory framework are vague and unsupported.

Key Words

City of Ekurhuleni

Informal Waste Sector

Recycling/Reclamation

Municipal Solid Waste

Landfill Waste Pickers

Dedication

In memory of my dad, Grant Graylin Nyirenda. A man who was a fond believer of “your attitude in books determined your latitude”.

Second, my husband, Volkan Inan, pushed me to realise my long dream to work at my dream job.

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Finally, I thank my field assistant Rocky Mufamadi for the timely coordination, translations, and arrangement of all interaction meetings with the waste pickers. I could not have done so without you.

List of Acronyms

Acronym	Description
BBC	Buy Back Centre
CoE	City of Ekurhuleni
CSIR	Council for Scientific and Industrial Research
DEFF	Department of Environment, Forestry and Fisheries (previously DEA)
DEA	Department of Environmental Affairs
DEAT	Department of Environmental Affairs and Tourism
DSI	Department of Science and Innovation
EPR	Extended Producer Responsibility
GDACE	Gauteng Department of Agriculture, Conservation and Environment
GDARD	Gauteng Department of Agriculture and Rural Development
IDP	Integrated Development Plan
IndWMP	Industry Waste Management Plan
IP&WM	White Paper on Integrated Pollution and Waste Management
IWMP	Integrated Waste Management Plan
IWS	Informal Waste Sector
MRF	Material Recovery Facility
NEMA	National Environmental Management Act No.107 of 1998
NWMS	National Waste Management Strategy
NEM:WA	National Environmental Management: Waste Act No. 58 of 2008
PPE	Personal Protective Equipment
PRO	Producer Responsibility Organisations
SWM	Solid Waste Management
S@S	Separation at Source
SoS	Separation Outside Source
WPIP	Waste Picker Integration Plan

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CHAPTER 1.INTRODUCTION & CONCEPTUAL FRAMEWORK

1.1 Introduction

Many developing urban centres across various countries aim to establish effective waste management systems that focus on achieving high rates of recycling for clean, source-separated materials. These cities often have existing informal recycling sectors, primarily motivated by the income generated from selling reclaimed materials. While these unofficial systems reduce waste volumes in the formal sector, thereby leading to cost reductions, there remains a substantial opportunity for synergy between the two sectors, Wilson et al. (2009).

In these emerging economies, the informal waste sector (IWS) acts as a crucial link between the municipal service chain and the formal, private sector value chain, facilitating the transfer of "waste" from kerbsides and landfills into the recycling economy, Godfrey et al. (2017).

Researchers, including Linzner et al. (2013), have emphasised the significance of considering informal waste systems in developing countries to obtain a comprehensive understanding of the situation. These systems are frequently overlooked in waste management performance data, which can result in an inaccurate representation of the overall context. Consequently, it is imperative to incorporate informal methods into the analysis to obtain a more accurate and comprehensive assessment of waste management in these regions.

The informal waste sector encompasses a range of activities as documented in various reports (Samson, 2009b; Seabi, 2022). It refers to waste management operations conducted independently of government planning and oversight systems, representing a substantial portion of waste management (Ma et al.,2016; Wilson et al.,2006; Guibrunet,2019; Scheinberg et al., 2006, 2010) characterised this sector as comprising individuals and businesses engaged in recycling and waste management without formal support or recognition from solid waste authorities, often operating in competition with them.

The informal waste sector is thus crucial for global waste management and recycling, particularly in regions where formal systems are inadequate. Informal workers collect, sort, and repurpose waste, significantly reducing landfill deposits. However, they face challenges such as low remuneration, poor working conditions, and limited access to training and resources. Therefore, by providing support to the informal sector, it is feasible to enhance

recycling rates and address social issues, ultimately reducing the overall expenses associated with waste management in the formal sector, Wilson et al. (2009).

The contributions of informal waste pickers are often overlooked by political frameworks, underscoring the importance of holistic waste management approaches that recognise their value by confronting the socioeconomic challenges they face Chvaltal et al. (2015). In a study conducted by Samson (2009), the African National Congress (ANC) acknowledged the existence of two separate South African economies in 2004. One economy is advanced and reliant on skilled labour, with a competitive global presence. The second economy, however, is primarily informal, excluded from formal employment opportunities, and comprised of unemployed or underemployed individuals, where these citizens separate valuable recyclable materials from waste streams to earn a living Medina (2005).

It is evident that informal waste collectors play a vital role in South African landfill management, making substantial contributions to both the economy and environment. These individuals engage in tasks such as sorting and recycling waste, which helps alleviate the strain on formal waste management systems Dlamini (2016). The work of these collectors is influenced by socioeconomic factors, including high unemployment rates and widespread poverty, which drive people to seek livelihoods through informal waste recovery (Idowu et al., 2019). Although their contributions are valuable, these informal workers encounter numerous obstacles, including lack of formal recognition, limited access to protective gear, and exposure to work-related health hazards Schenck et al. (2019).

South Africa has achieved considerable success in developing a flourishing recycling industry over the past three decades mainly because of the tireless efforts of the dynamic informal waste sector. Nevertheless, further advancements are necessary, as substantial quantities of waste, including recyclables, remain disposed in landfills Godfrey et. al. (2017). According to Kala et al. (2022), efforts to reduce, reuse, and recycle waste are still in their infancy and are yet to significantly decrease the volume of waste disposed of at landfill sites.

Informal waste pickers are therefore seen to perform an essential, yet often overlooked, role in the South African recycling process (Godfrey, 2021; Samson, 2020; Schenck et al. 2019). Despite its poor integration into municipal waste value chains, the IWS has thrived. The efforts of the informal waste management sector in South Africa have resulted in tremendous changes in attitudes towards their integration and formalisation, Seabi (2022).

It is commonly perceived that the integration of informal workers in local government service delivery is a strategy of neoliberal privatization, intended to diminish the public sector and infringe upon the privileges of its staff, Samson (2009a). Municipalities in global context have historically ignored or attempted to suppress informal waste management activities, which have proven to be ineffective, Medina (2005).

According to the Constitution of South Africa (1996), people are entitled to a healthy and secure environment free from any form of harm, Yahaya et al. (2023). The Constitution of South Africa (1996) further states that it is the responsibility of the municipality to enhance waste removal and disposal, as well as enhance sanitation services; however, municipalities frequently face challenges when attempting to develop and implement waste management services by integrating a diverse range of local individuals and organisations involved in such activities.

It is therefore important to have information on waste management performance in the informal sector when formulating policies and enforcing existing laws as well as when advocating for change and making informal systems more visible. Workers in informal sectors are often overlooked as important contributors to modern waste management systems, putting their jobs at risk, Samson (2009).

Informal recycling waste pickers are categorised in multiple ways, as reported by Wilson et al. (2006), and women in informal employment: globalisation and organising WIEGO (2013), depending on the location and method of material recovery. These categories include household waste collectors who operate door-to-door; itinerant waste buyers who acquire clean and reusable materials through trading or purchasing while traversing streets; municipal or informal street waste collectors; and waste pickers who operate in landfills and dumps, Samson (2009b).

In South African landfill operations, the inclusion of the informal waste sector is vital for optimising waste management effectiveness. Neglecting this sector leads to numerous issues, such as landfill overflow, environmental degradation, and the loss of income for those who rely on waste collection activities, Scheck et al. (2019). According to Dlamini (2016), the formal waste management system typically disregards the input of informal waste collectors, resulting in operational inefficiencies.

1.2 Problem Statement

Recycling has become more common in South African cities due to the growth of the informal waste sector, which actively retrieves valuable post-consumer recyclables from illegal dumps, streets, and landfills. There are between 60,000 and 90,000 waste reclaimers in South Africa, Yu et al. (2020). Godfrey et al. (2016) report that informal waste pickers recover 80-90% (by weight) of all paper and packaging recyclables in South Africa, equating to approximately 16-24 tonnes per picker annually. These reclaimers save municipalities significant landfill costs, estimated between R309.2 and R748.8 million, by diverting recyclables, Godfrey et al. (2016).

From the recent changes in South African legislation, it is parent that there is a growing recognition of the importance of integrating waste pickers into the formal waste management sector. To this end, the Department of Environment, Forestry, and Fisheries (DEFF) and Department of Science and Innovation (DSI) jointly introduced the Waste Picker Integration Guidelines for South Africa in 2020.

Although some municipalities in South Africa have initiated the inclusion of waste pickers in their waste value systems, currently, there is no universally accepted definition or consistent method for implementing this integration Seabi (2022). This is mainly attributed to the different factors that exist in the institutional and operational frameworks of local and metropolitan municipalities and their engagement with waste pickers.

Several waste picker integration programs in South Africa have already been implemented or piloted in the municipal waste value chain by several authors. Samson et al. (2020) has carried out a study in the municipalities of Metsimaholo and Johannesburg between 2016 and 2019, to develop a comprehensive understanding of waste picker integration centred around the separation at source (S@S) concept. Samson et al. (2020) defined five (5) types of integration initiatives, which were top-down integration and empowerment projects, collaborations between the packaging industry and waste pickers associations, public-private partnerships, and integration activities created by municipalities themselves.

It has been found that the evidence approach and process of waste picker integration will largely depend on the location where the waste pickers reclaim their material, as well as the method of material recovery; that is, street waste pickers' and landfill waste pickers' integration processes and approaches may not necessarily be the same Samson et al. (2020).

Samson et al. (2020) research reveals that waste pickers have long been an integral part of municipal waste management and recycling systems through their 'separation outside source' (SoS) approach. The SoS method, which existed before government recycling initiatives, remains the primary means of gathering post-consumer recyclable materials.

The City of Ekurhuleni governs the East Rand Region of Gauteng. The municipality has nine (9) towns namely, Kempton Park, Alberton, Nigel, Boksburg, Springs, Benoni, Edenvale Brakpan, and Germiston. The City of Ekurhuleni however does not yet have a fully operational or recognised comprehensive and structured waste picker integration program Gumbi (2015). Much of this work is devoted to waste collection and disposal in landfills, with the integration of waste pickers as a relatively new initiative outside the expertise of the City of Ekurhuleni municipal waste officials Gumbi (2015).

The City of Ekurhuleni's primary focus on waste management is the collection and disposal of waste at five designated operational landfill sites CoE WMP (2022). The waste collection service comprises 723,000 formal service points and 176,000 informal service points in the known settlements. However, the service points in informal settlements are constantly changing because of the uncontrollable growth in both new and existing settlements. CoE WMP (2022).

The geographic location of the municipal solid waste collected in the City of Ekurhuleni is managed and handled through a number of waste depots and transfer stations. It has further established a network of mini-disposal sites and garden waste disposal site facilities to support collection operations in areas that do not have formal waste collection services.

The literature emphasises the importance of informal waste sector as a crucial component of municipal waste management systems. Informal waste pickers help divert recyclable materials such as plastics and paper from landfills that are already struggling with the influx of waste. This is usually the case if the waste value chain includes a material recovery facility in which waste is sorted or separated prior to disposal. However, the City of Ekurhuleni has no material recovery facility, and all its waste collection via depots and transfer stations go directly to landfill sites. As a result, up to 90% of the waste reclamation activities occur in landfills. Therefore, most waste pickers are confined to landfills.

Research conducted in Johannesburg by Rasmeni et al. (2019) has revealed a distressing trend in the available and remaining airspaces of landfill sites. It was concluded that the amount of landfill disposal space diminishes at an alarming rate, as more waste is generated in the large metropolitan areas of the Gauteng region. The present circumstances in the City

of Ekurhuleni are characterised by a scarcity of available airspace landfills, which are dwindling rapidly, with some sites having reached the culmination of their operational life. Consequently, it is imperative to establish new waste disposal facilities.

The motivation for this study was rooted in three key factors. First, according to the 2018 State of Waste Report published by the DEA, South Africa generated 55.6 million tonnes of general waste in 2017, with only 11% diverted from landfills. It was estimated that 34.5% of this waste was recycled or recovered, 0.1% was treated, and 65.2% was disposed at landfill sites during the same period. However, there are no published figures regarding the potential recycling or recovery of waste once it enters a landfill site. It is commonly assumed that this waste is immediately disposed.

Second, the presence of a sizable informal waste sector that is primarily situated within the City of Ekurhuleni's operational landfill sites has arisen because of the lack of an integrated waste management system or plan, such as source separation programs or any waste minimisation initiatives.

Third, there is evidence that the available airspace in these landfills is decreasing rapidly. This is because little to no waste diversion has been realised and there has been no long-term establishment of a material recovery facility.

1.3 Purpose Statement

This research aimed to examine the components of the informal waste sector within the City of Ekurhuleni's landfill operations, focusing on their demographic profiles, attributes, work environments, susceptibility, obstacles, and prospects. The study sought to establish a potential correlation between the volume of waste deposited at landfill sites and the subsequent retrieval or reclamation of that waste by individuals in the informal waste sector.

1.4 Research Question

This study aimed to answer the following research questions:

Which individuals constitute the informal waste sector at City of Ekurhuleni landfill sites, and what factors shape their daily work environment, along with the key stakeholders influencing their activities?

In what ways can the City of Ekurhuleni's existing operational landfill sites better incorporate the informal waste sector through the quantification of waste disposed versus material recovery, ultimately preserving landfill airspace?

1.5 The Objective of this Research

The objectives of this study were as follows:

- To ascertain and gain a deeper understanding of the individuals comprising the informal waste sector within the City of Ekurhuleni's landfill site operations.
- To gain a deeper understanding of the informal waste sector's impact, this study aims to evaluate and measure the types and quantities of waste deposited at landfill sites owned by the City of Ekurhuleni over a six-year timeframe (2015 – 2021). The research will also examine the subsequent recovery and recycling of these materials by informal waste collectors.
- To identify and better understand key stakeholders and role players in the City of Ekurhuleni waste value chain and their cross-links to waste pickers/informal waste sector activities at landfill sites.
- To explore the vulnerability, challenges, and opportunities faced by waste pickers in waste reclamation in the city of Ekurhuleni-owned landfill sites.
- To identify opportunities and barriers that exist within existing institutional frameworks, legislation, and guidelines for integrating the informal waste sector at CoE landfill sites.

There is a lack of research examining these topics in the City of Ekurhuleni or in any other location. This study aims to address this gap in literature.

This research will provide policymakers, municipal officials, managers, and the regulatory framework of the waste management sector with additional knowledge regarding the measurable impact that waste pickers have on material recovery and reuse on landfill sites against the amount of waste generated, as well as the necessity of recognising their input and integration into the system.

1.6 Structure of the Thesis

This thesis comprises nine chapters, and is structured to facilitate the development of a robust research argument..

- Chapter 1 – Introduction provides an introductory literature review centred on four main themes: waste reclamation in the informal sector,why the informal waste sector exists and its contributions, socio-economic conditions and challenges, and policy and regulatory framework on informal waste sector inclusion/integration. This chapter provides an overview of the research study on why it was undertaken, including background information, contextual information, aim of the study, explanation of the research question, problem statement, and objectives that the researcher aimed to accomplish through the study.

- Chapter 2: The Literature Review chapter places the research in the conceptual framework of an extensive literature review in both local and international contexts centred around the four themes described in Chapter 1. The literature review focuses on key themes, namely, waste reclamation in the informal sector, its existence and contributions to formal waste management structures, and enabling factors in the context of economic and institutional frameworks. It further examines the part played by informal waste pickers in the waste value chain, types of material being recycled, demographics, and socioeconomic conditions, and discusses the policy and regulatory framework of their formalisation/integration.

- Chapter 3 – The Informal Waste Pickers Legislation chapter provides a comprehensive literature review of the informal waste sector's legislative existence in the context of the South African legislative route, as well as an international framework for the formalisation and inclusion of the informal waste sector, with a particular focus at the municipal level. It discusses the historical legislative framework at both the national and local levels, commencing with the waste hierarchy, implementation of the national waste management strategy, the introduction of the EPR Act, and later the waste pickers' integration guidelines.

- Chapter 4: The Research Methodology chapter provides a description of the research objectives, positionality, design, data analysis, and methodological reflections. It

provides an outline of the research design description, instruments used during data collection, and how the interpretation and analysis of the results will be carried out. It also defined the fundamental concepts of quantitative and qualitative research methodologies, their credibility and validity, and their limitations in the context of the research topic.

- Chapter 5 – The research study area chapter presents the research setting of the study in a geographic context and the associated five (5) case study sites. This chapter provides a comprehensive analysis of the geographical setting of the study area as well as a look at its demographics and socio-economic attributes, waste value chain, waste management policies, and systems. It aims to promote a comprehensive and nuanced understanding of the research topic, while also furnishing an appropriate contextual foundation for comprehending the role of the informal sector in the city's waste management value chain.

- Chapter 6 – The case study findings chapter presents the research findings of the individual case study sites, namely Rietfontein, Platkop, Rooikraal, Simmer & Jack, and Weltevreden. Each sub-section describes aspects of landfill sites related to the physical infrastructure status quo, regulatory compliance status, operational philosophy of the sites in terms of key stakeholders involved in landfill site operations, how waste is measured, record capturing and keeping of waste received, and recyclables taken out that distinguish each site. It further presents the general findings of waste pickers in terms of engagement channels with site owners and operators as well as their socioeconomic conditions and challenges at each site.

- Chapter 7 – The objective of this chapter is to provide a comprehensive comparative analysis of the research theme across all the case study sites. The study's findings are structured and organised in accordance with the main themes identified in Chapter 2. The analysis is supported by a literature review, which was conducted to substantiate the findings, where applicable. The key findings from this study were clearly delineated and concisely summarised. The findings were presented in a graphical and statistical manner to facilitate a clear understanding of the results.

- Chapter 8 – Summary and recommendation chapter presents the summary, reflections, and recommendations of the research topic, by outlining key conclusions and take aways from the research. It further outlines the contribution of the study to previous studies as structured themes and identifies gaps and limitations for future research.

- Chapter 9 - References: This chapter presents a list of references and sources used in this study. The remainder of this thesis includes appendices.

CHAPTER 2.LITERATURE REVIEW OF THE INFORMAL WASTE SECTOR

2.1 Introduction

This section presents a conceptual framework that incorporates an extensive literature review of both local and international contexts, focusing on four main themes. The first theme is an overview of global waste management issues, while the second theme centres on the existence and contribution of the informal waste sector within a broader definition. The third theme examined the integration of informal waste pickers in a global context, and the fourth theme identified the existing literature gaps that prompted this study. This section also explores the integration of informal waste pickers and aims to fill gaps in the existing literature.

2.2 Global Waste Management – Status Quo

In 2018, the World Bank reported that worldwide, municipal solid waste amounts to 2.01 billion tonnes per year, and regrettably, 33% of it is not managed responsibly or sustainably World Bank (2018). It is anticipated that the global waste generation will experience a rise of 75% from the World Bank's 2018 figure of 2.01 billion tonnes annually by the year 2050 Seabi (2022). Currently, landfills make up approximately 37% of the global waste, of which 8% is managed in sanitary landfills and collection systems Kaza et al. (2018).The approximate percentages of waste recovered through recycling and composting, as well as the percentage of waste incinerated for final disposal, are 19% and 11%, respectively Seabi (2022).

The responsibility for municipal solid waste management typically falls under the jurisdiction of the formal sector in the vast majority of countries around the world Wilson et al. (2006). A lack of resources for waste management in developing countries has put a strain on the formal sector's ability to handle the ongoing waste generation, leading the informal sector to intervene and bridge the gap, Wilson et al. (2006).

Efficient municipal solid waste management is essential for achieving the United Nations Sustainable Development Goals, especially with regard to livelihoods, poverty reduction, public health, and environmental protection in low- and middle-income countries Ogwueleka et al. (2021). In many developing countries, waste collection by the informal sector is common and often occurs on the streets or in garbage dumps Ogwueleka et al.(2021). The waste management infrastructure and organisational systems in these countries have been found to be insufficient. As a result, municipalities and formal waste service providers are unable to offer collection services to all households, nor can they guarantee environmentally sound

waste treatment or disposal, which is both effective and responsible Ogwueleka et. al. (2021). The physical and socioeconomic conditions present in the metropolitan areas of developing and transition countries include mass migration, urbanisation, rapid population growth, inadequate infrastructure, a significant number of undereducated workers, a lack of affordable services, and economic hardship, which are prevalent and have a profound effect on the region (Wilson et al., 2006; Sembiring et al., 2010).

Only about half of the population of developing countries has access to adequate, regular, and reliable waste collection services Gunsilius (2010). The issue of municipal solid waste management agencies operating in an unsustainable manner has been exacerbated by factors such as inadequate urban planning, suboptimal policy formulation, accelerated growth of urban populations, and insufficient resources to provide essential services Wilson, Velis and Cheeseman (2006). Owing to insufficient waste management, waste is frequently disposed of in open spaces, streets, waterways, or unused plots of land, resulting in soil degradation, extensive flooding, air and water contamination, and other serious health and sanitation hazards Matter et al. (2013).

Despite this, numerous urban centres in developing nations continue to strive for waste management systems, which are typically characterised by substantial recycling rates for sorted, clean materials Wilson et al. (2006). Many of these cities already have informal recycling industries that rely solely on the sale of reclaimed materials for financial sustainability. However, these informal sectors are instrumental in reducing waste quantities, ultimately resulting in cost savings in the formal sector, Wilson et al. (2006).

The potential for cooperation between the formal and informal sectors is evident, and supporting the latter in improving recycling rates and tackling social issues could result in cost savings for the former in terms of waste management Wilson et al. (2009). In recent years, there has been a noteworthy improvement in the recycling rates of urban areas in China, have reached 17-38% Linzner & Salhofer (2014). Moreover, there have been instances where the recycling rate has reached 70–80% for recyclable municipal solid waste collected by the informal waste sector, as demonstrated in the cases of Nanjing and Beijing in 2016 Chen et al. (2018). This demonstrates the positive contribution of the informal waste sector as an integral component of the waste recycling systems. According to optimistic estimates, the amount of waste collected in cities in developing countries ranges from 30 to 70 per cent Ezeah & Roberts (2012).

In Tandil, Argentina, the informal recycling sector played a crucial role in collecting municipal waste to a greater extent than the official approach, despite the global recovery rate being merely around 2%, Villalba (2020).

2.3 Existence of Informal Waste Sector

2.3.1 Definition of IWS

Several studies have extensively demonstrated the importance of informal waste pickers and their functions in municipal solid waste management systems Guibrunet (2019). Most studies on casual waste disposal ordinarily concentrate on the actions of scavengers, who derive their livelihoods by reselling valuable commodities and objects retrieved from waste Wilson et al. (2009).

The functions of the informal waste sector are highly diverse and conducted under a wide range of circumstances Velis (2017). Typically, informal recycling occurs when three factors coincide: socioeconomic circumstances drive disadvantaged individuals to engage in waste scavenging; waste materials possess monetary value; and they are physically accessible (Velis, 2017; Zisopoulos et al., 2023). The expansion of the informal waste sector in numerous low-developed nations can be ascribed to a variety of factors, including the growing influence of the private sector on wielding market power and its reliance on acquiring substantial quantities of superior-quality recyclable materials Zisopoulos et al. (2023).

Zisopoulos et al. (2023) stated that thousands of individuals in developing urban areas depend on recycled waste for subsistence. Informal recyclers are frequently observed in countries characterised by high levels of urbanisation, substantial socioeconomic disparities, and a significant demand for secondary resources. These individuals frequently engage in waste recycling to earn a living, because they present a relatively profitable opportunity for those with lower income levels Zisopoulos et al. (2023).

Waste pickers who operate in the informal sector are also referred to as the ‘informal recycling sector’ Velis (2017). The informal recycling sector refers to the individuals or companies involved in extracting recoverable and valuable materials from unsorted municipal waste Ezeah et al. (2013).

According to Scheinberg et al. (2010), informal waste sector activities denote operations that are not sanctioned, funded, or endorsed by official solid waste management agencies or those that operate counter to or in opposition to these agencies. This interpretation aligns

with the broader literature on municipal solid waste management highlighted by Guibrunet (2019). The informal economy operates outside the formal sector and is often driven by a desire to preserve the well-being of their families or groups Sekerka et al. (2014). This sector encompasses various unregulated and unauthorised businesses, including garbage collectors, scrap dealers, scavengers, mobile garbage buyers, and scrap merchants, which operate outside the purview of formal regulations, approvals, sponsorships, registrations, and licences Sekerka et al. (2014). These individuals and businesses tend to operate in an unstructured and unorganised manner, often without the support of official institutions or sponsorship Sekerka et al. (2014).

Some studies portray their work as comprising small-scale, labour-intensive tasks that involve low technology and are unorganised, low-paid, and unregulated Ezeah, Fazakerley and Roberts (2013). Informal waste sector activities are part of a self-sustaining activity that typically occurs outside the main economy (Chi et al. 2011). According to Wilson et al. (2006), individuals working in this sector typically lack government social welfare or funding support, operate without licences, and fail to pay state or government taxes. (Ezeah, Fazakerley and Roberts, 2013; Wilson, Velis and Cheeseman, 2006) argued that the informal sector acquires various raw materials and converts them into a wide variety of intermediate and final products, and the skills required for these operations are often acquired outside formal education systems.

2.3.2 Who constitutes the Informal Waste Sector?

According to Ogwueleka et al. (2021), the significance of waste stakeholders in recycling initiatives has been extensively recognised in scholarly works, with a specific emphasis on low-income nations. Although municipal waste collection and disposal systems are operational in several urban areas, four distinct types of informal recycling operations can be identified based on the location and method of material recovery, which are conducted at the site where the materials are collected Ogwueleka et al. (2021).

Informal waste workers include landfill waste pickers, street waste pickers, and those cleaning the streets; collecting waste from household bins; and gathering, handling, moving, collecting, and selling waste from the public and private industries (Medina, 2005; Wilson et al., 2012). Informal waste recycling, as categorised by Wilson et al. (2006) and WIEGO, (2013), is primarily divided into distinct groups based on the location and techniques employed for material recovery.

According to Wilson et al. (2009), there are a minimum of four distinct types of informal waste recycling determined by the location and method of material separation:

(a) Itinerant waste buyers (IWBs): Waste collectors who frequently travel door-to-door to collect recyclable materials and organic waste from households purchase or trade in these items. This practice is prevalent globally, with individual collectors typically specialising in one or two types of materials.

(b) Street waste salvage and picking: Secondary raw materials are commonly derived from unsorted municipal waste sourced from public areas or taken from public area bins prior to official refuse collection. This practice is believed to be widespread in several developing countries, particularly South and Southeast Asia Wilson et al. (2009).

(c) Municipal solid waste collection personnel: In many countries such as Mexico, Colombia, Thailand, and the Philippines, waste is transported in trucks to final disposal sites and secondary raw materials are obtained from this waste Wilson et al. (2009).

(d) Waste picking from landfill sites or dumps: Sorting through waste before it is moved to the final disposal site is a task commonly performed by waste pickers or scavengers, particularly in low-income countries, where open dumping remains the norm Wilson et al. (2009).

Previous studies Guibrunet (2019) have predominantly concentrated on streets and landfill scavengers, whereas comparatively less emphasis has been placed on the study of itinerant waste traders (IWBs). This is because IWBs have minimal interaction with the conventional waste management industry, which typically only recognises and quantifies the waste scheduled for collection Wilson et al. (2009).

Samson (2020) described two main systems in the informal waste sector for informal recycling activities: Separation at Source (S@S) and Separation Outside Source (SoS).
In the Separation Outside Source (SoS) system (see **Figure 1**), reclaimers collect valuable materials from kerbside rubbish bins and landfills before selling these recyclables to buyback centres and reintroducing them into production, consumption, waste, and potential recycling or reuse cycles Samson (2020). In contrast, the Separation at Source (S@S) system (**Figure 2**) involves a regulated operator who collects pre-sorted recyclables from households using the company's trucks Samson (2020).

Figure 1: Separation Outside Source, Samson (2020)

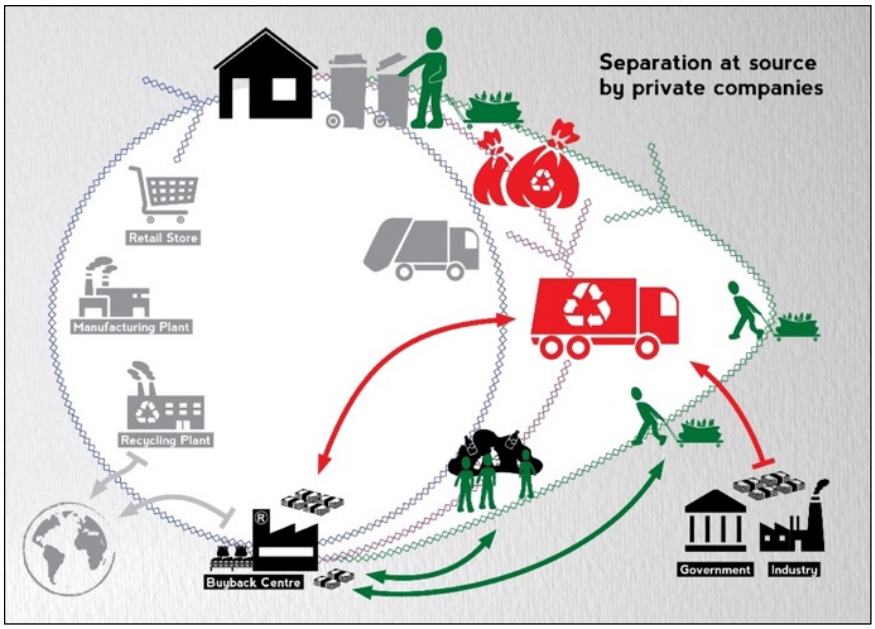


Figure 2: Separation at Source, Samson (2020)

2.4 Informal Waste Sector Contributions

2.4.1 Value Chain

The informal waste sector gathers reusable materials and directs them through intermediaries into a network of recycling businesses, primary dealers, and potential exporters, all of which operate in the formal private sector Guibrunet (2019).

In the past 30 years, South Africa has established a flourishing recycling industry, partly because of the unwavering dedication of the nation's dynamic informal waste sector Godfrey & Oelofse (2017). Despite this progress, considerable work remains to be done, as substantial amounts of waste, including recyclables, continue to be disposed at landfill sites. Landfilling is the predominant technology used for waste management in South Africa Godfrey et al. (2017).

Informal waste reclaimers continue to play a crucial role in the South African recycling value chain, although this is largely unacknowledged. (Godfrey, 2021; Samson, 2020b; Schenck et al., 2019). In developing countries, these entities act as essential intermediaries in linking MSW and formal, private sector service value chains, thereby facilitating the transfer of 'waste' from landfills and kerbsides to the recycling economy Godfrey & Oelofse (2017).

According to Godfrey and Oelofse (2017), the initial findings of the packaging industry suggest that a significant portion of post-consumer paper and packaging collected in South Africa in 2014 was the result of informal waste reclaimers' efforts at a minimal cost to the government or businesses. specifically, between 80-90% of the collected material was obtained using this method. Despite limited integration into municipal waste management services, the informal sector has achieved significant success in bridging the service and value chains. This is demonstrated by Godfrey and Oelofse (2017) (see **Figure 3**), who highlight the sector's ability to effectively connect the two chains. Guibrunet (2019) further supported this finding by showing that informal waste picking has been incorporated into the recycling value chain, which consists of both formal and informal elements.

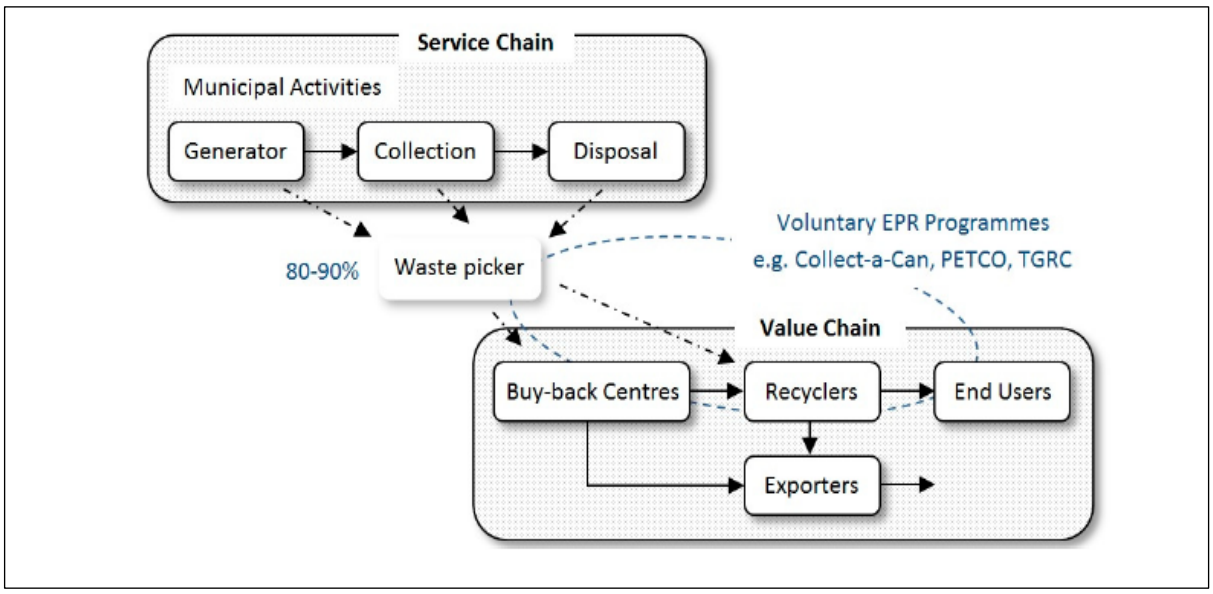


Figure 3: The role of informal waste pickers in connecting service and value chains, with a particular emphasis on paper and packaging industry, in South Africa (Godfrey & Oelofse, 2017)

2.4.2 Overview of Informal Waste Sector Contribution

Historically, municipalities have either disregarded or attempted to suppress informal waste management activities, which have proven ineffective, and less than half of the population in developing countries have access to regular and adequate waste collection services (Gunsilius, 2010; Medina, 2005; Paul et al., 2012). In these nations, informal waste collectors significantly contribute to the waste management process by optimising resources and categorising, sorting, exchanging, and processing waste products Gunsilius (2010).

The World Bank (2018) acknowledged that the informal sector that the informal sector is capable of fulfilling the needs of the poor by providing alternative means of service delivery. According to Guibrunet (2019) findings, informal waste picking has become an integral component of the recycling value chain, because the recycling sector relies heavily on a diverse range of formal and informal elements. Guibrunet (2019) posits that a substantial portion of the formal recycling industry's primary input, comprising recyclable materials, is derived from informal waste-picking activities.

According to Gunsilius (2010), informal waste pickers' performance relies on their capacity to manage their operations effectively, shape public and political viewpoints, and consistently develop innovative methods to obtain waste and surmount obstacles while simultaneously embracing emerging systems as they arise Gunsilius (2010). These actions not only generate income for a small percentage of urban residents, equivalent to approximately 1%, but also

protect the environment and natural resources by recovering up to 20% of municipal waste in a self-sufficient manner Gunsilius (2010). The IWS makes a considerable contribution to minimising the volume of waste sent to landfills, thereby mitigating environmental pollution and fostering the development of local value in the recycling sector Aparcana (2017).

2.4.3 Contribution of Informal Waste Sector by Numbers

To gain insights into the impact of the informal waste sector in municipal solid waste management systems, it is crucial to evaluate their quantitative contributions with respect to the materials they recover.

It has been highlighted in previous sections that the IWS possesses the ability to recognise waste materials with commercial value and reach customers in specific markets Nzeadibe (2009). Moreover, the primary driving force for this industry is not the expenses incurred but rather the income derived from the sale of recovered resources Wilson et al. (2009). By collecting reusable waste materials, employment opportunities are created, the amount of littering decreases, the lifespan of regional landfills is extended, resources and energy are conserved, pollution is minimised, the appearance of the area is maintained, and waste management is streamlined (Monirozzaman et al. (2011).

Waste recovery is instrumental in aiding societies and economies in improving the waste hierarchy and supplying secondary raw materials to industries, as underscored by Asim et al. (2012). This has been evidenced in cities, such as Cairo and New Delhi, where the absence of formal waste collection systems has resulted in the informal sector fulfilling these services Ezeah et al.(2013).

Estimating the global quantity of informal waste recyclers is challenging because of the varying estimates provided by different sources at different times. Estimates range from 11.4 million to over 20 million individuals (Zisopoulos et al., 2023; Gutberlet, 2021; Sanders, 2022), with some sources suggesting a minimum of 15 million people Zisopoulos et al. (2023). This difficulty arises because the role of informal waste recyclers in improving recycling rates varies greatly between low- and middle-income countries (Wilson *et al.*, 2009; Zisopoulos *et al.*, 2023). A precise global figure is difficult to determine, as these recyclers are frequently not included in the formal economy and waste management statistics and are often excluded from government-funded social protection benefits (Gutberlet et al., 2020; Zisopoulos *et al.*, 2023).

In developing economies, the informal sector achieved a recycling rate of 74.3% in 2006, whereas the formal sector managed to achieve only 10.6% Wilson et al. (2009). Comparing the aforementioned figure to that of a developed economy, Chen et al. (2018) discovered that in Nanjing, China, a substantial portion of recyclable MSW materials, ranging from 70% to 80%, was collected by waste pickers in the informal sector, who play a vital role in the waste recycling system. Waste pickers comprise only a small percentage of the entire recycling industry, accounting for 6.8 - 7.3% of the volume. However, they have made a significant contribution to the recycling economy in Nanjing, and by reducing the annual MSW disposal cost by approximately 17.6 - 22.0 million USD, waste pickers have also increased the resource recovery rate by 1.9 - 8.0% Chen et al. (2018).

The recycling rates attained by various groups within the informal waste sector was summarised by Wilson et al. (2009) and expressed as a percentage of the total waste generated Ezeah, Fazakerley and Roberts (2013). Specifically, this study presented the recycling rates achieved by dump waste pickers in five cities in 2006: Cluj in Romania (4.4%), Lima in Peru (1.9%), Lusaka in Zambia (9.4%), Pune in India (2.4%), and Quezon in the Philippines (1.8%). The data presented herein pertain only to the recycling rates achieved by dump waste pickers in these cities in 2006, Wilson et al. (2006).

To gain a comprehensive understanding of the materials that the informal waste sector recovers and contextualises, it is necessary to consider the various factors that influence the amount and type of recoverable waste Damghani et al. (2008). Damghani et al. (2008) state that such factors include cultural traditions, climate, dietary practices, lifestyle, and the financial circumstances of the local community in which waste is generated.

Typical recyclable materials sought after by the informal waste sector include plastic, PET bottles, glass, paper, cardboard, and scrap metals, such as aluminium, steel, and tin, as reported by Wilson et al. (2006). The materials that are generally chosen for recycling are metals, paper, and PET owing to their exceptional recycling potential, durability, and selling price Wilson et al. (2006). The extent to which a particular substance or material is reused is influenced by several factors such as the availability of selling markets, cost of virgin materials, demand for secondary materials, convenience of transportation, accessibility, and anticipated profit that can be earned when the materials are sold Ezeah et al.(2013).

South Africa has a rich history of reclaiming and providing waste-management services at the municipal level. It is crucial to acknowledge that during the apartheid era, waste service

provision in the country was highly unequal and inadequate Samson (2009). During the dawn of the democratic era in South Africa, the government, led by the African National Congress (ANC), recognised the existence of two separate economic systems within the country in 2004. One of these economies was advanced and reliant on skilled labour, possessing a competitive global presence. The other economy, however, was primarily informal and excluded from formal employment opportunities, comprising largely unemployed and underemployed individuals, many of whom stemmed from the apartheid era (Samson, 2009). As noted by (Samson, 2009; Medina, 2005), these citizens earn a living by separating valuable recyclable materials from the waste streams.

The role of informal waste reclaimers in South Africa in collecting recyclables, particularly paper and packaging materials, recovering up to 80–90%, has been vital for nearly three decades Godfrey (2021). This has resulted in municipalities realizing significant savings in landfill airspace costs, in the range of R309.2 million and R748.8 million in 2014, with minimal costs incurred Godfrey et al. (2016).

In 2017, approximately half (51%) of South Africa's paper and packaging waste was collected by informal waste reclaimers before the commencement of the initial voluntary extended producer-responsibility schemes for paper and packaging Godfrey (2021). The information presented below appears to align with the findings of (Linzner and Lange, 2013), who reported that informal waste management systems may achieve recycling rates up to 45% (in some instances, even exceeding this percentage).

Godfrey (2021) further found that approximately 70% of recyclable plastic waste was collected from post-consumers and landfills by the informal waste sector in 2011. Godfrey (2021) stated that in 2012, this percentage dropped to around 58%. However, in 2017, there was a significant increase in the number of recyclables obtained from landfills and other post-consumer sources, with 74% representing the largest proportion Godfrey (2017). Godfrey (2021) concluded that it has been observed that the proportion of recyclable waste collected by the informal sector has been decreasing over time, as acknowledged by the producer responsibility organisations (PROs). The reason for this decline is unclear and may be influenced by a variety of factors, including the erosion of the formal recycling sector Godfrey (2017).

The precise number of waste pickers in South Africa has not yet been estimated officially. Earlier estimates have fluctuated between 60,000 and 90,000 waste pickers DEA (2014b);

Yu et al. (2020), whereas more recent estimates have indicated a much higher figure of up to 215,000 pickers Godfrey & Oelofse (2017). The recent increase in the number of waste reclaimers in South Africa can be partially ascribed to the rise in unemployment, which has prompted individuals to seek subsistence in the informal sector (Seabi, 2022; Godfrey, 2021).

The informal sector is primarily responsible for the majority of recycling efforts in cities in developing countries. This recycling process is entirely dependent on the revenue generated from selling recovered materials, without participation from the formal sector Wilson et al. (2009). In contrast to Europe and North America, recycling is a formal sector process in these regions, which is primarily driven by local authorities and national governments, and is typically carried out by large private sector organisations; this striking difference in recycling practices was highlighted in a study by Wilson et al. (2009).

2.5 Global Integration of Informal Waste Sector

One of the difficulties faced by municipalities is the integration of the diverse array of local actors involved in waste management. These actors extend beyond municipal employees and private sector entities to encompass informal waste pickers, whose significance and inclusion have typically been overlooked and relegated to internal policy discussions Gunsilius (2010). Despite the crucial role played by informal actors in waste management, they are unable to incorporate their operations into formal waste management plans and policies Gerdes and Gunsilius (2010).

The local council frequently sanctions and facilitates informal waste collection in areas where formal collection is hindered by economic and physical constraints. To this end, the council provides various forms of aid, including granting informal workers access to public resources such as collection trucks and waste disposal centres, and furnishing legal support in the event of conflicts with residents Gerdes and Gunsilius (2010). This suggests that the council offers substantial support to the informal waste management sector through regular dealings with informal waste collectors Gerdes and Gunsilius (2010).

Diverse experiences with informal waste management interventions have been observed in various regional environments. In a number of Latin American and Asian nations, informal waste pickers have succeeded in establishing organisations and networks, which, in some instances, interact with local government bodies and commercial entities on a routine basis Gerdes and Gunsilius (2010). The optimal approach to integrating the informal sector is

heavily influenced by a range of political, legal, cultural, and social factors, and it is crucial to consider local, regional, and national contexts. Gerdes and Gunsilius (2010) highlighted that careful consideration of these factors is essential for successful integration.

The primary aim of integrating the informal sector into environmentally sustainable waste management practices is to enhance social inclusivity and protect civil rights, which were initially championed by social activists to assist disadvantaged individuals Gerdes and Gunsilius (2010). However, there are also environmental and economic arguments regarding the integration of the informal sector Gerdes and Gunsilius (2010).

Scheinberg et al., (2006) introduced a methodology that recognises the informal sector's engagement in various economic activities within the waste management system, and examined how modernisation can enhance and reinforce operational and economic niches Wilson et al. (2009). Samson and Sekhwela (2019) define integration as the act of assimilating reclaimers into the municipality's waste management system, which encompasses financial and material backing Seabi (2022).

Several studies have indicated that an informal governance system comprising formal waste authorities and informal waste workers operates beyond formal policy frameworks Guibrunet (2019). For example, Katusiimeh et al. (2013) demonstrated this by describing how the municipality governs (informally) the informal waste sector in Kampala as informal waste collectors collaborate with the city council in the provision of waste collection services Guibrunet (2019). According to Frykman (2006), informal waste pickers in Mexico City have a close relationship with local authorities, which is moderated by the heads of the waste pickers' associations. This relationship strongly balances the interest of the waste picker Guibrunet (2019).

Similarly, in Brazil, waste picker cooperatives have been established in several cities and have been highly successful, leading to the creation of a national movement Gunsilius (2010). This movement began with the First National Congress of Brazilian Waste Pickers held in 2001, as stated by Gunsilius (2010). The informal recycling sector has been receiving consistent governmental backing for approximately ten years through the 'Social Technology Network.' There are currently approximately 1,700 cooperatives and associations across various categories in Brazil, Velis (2017).

Velis et al. (2012) conducted the most comprehensive international assessment of various approaches to informal sector integration. Their analytical framework, known as the InteRa tool, classifies interventions in the informal waste sector into four main areas: the interaction between the informal waste sector and the SWM system, the materials and value chain, broader society, and organisational aspects and empowerment. These four crucial areas are examined and categorised to encourage the incorporation of the informal waste sector into a city's Solid Waste Management (SWM) system. As illustrated in Figure 4, the typology proposed by Velis et al. (2012) categorises each potential intervention action into one of four groups, labelled (A) to (O).

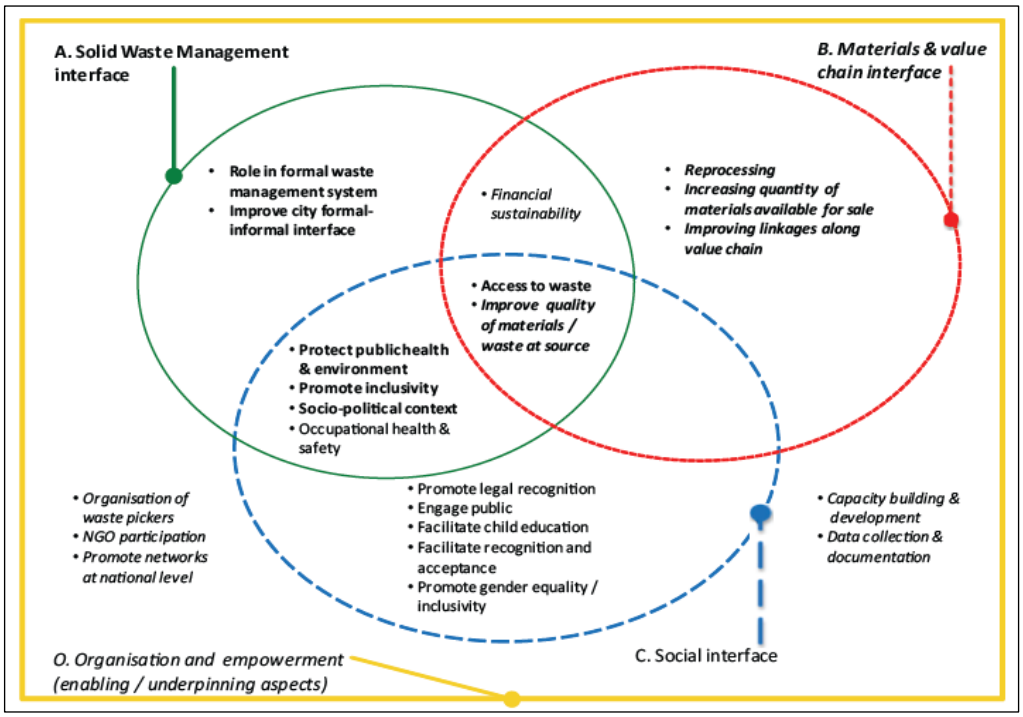


Figure 4: The analytical framework and typology of interventions, showing the interdependencies for integrating the informal recycling sector in waste and resource management (Velis et. al, 2012).

The assessment tool depicted in Figure 4 was developed to illustrate and assess the effectiveness of current or proposed initiatives in the informal recycling waste sector across these four categories, ensuring a well-rounded incorporation of the informal waste sector. This framework is additionally supported by real-world case studies from various global locations, emphasising effective approaches and key factors for enhancing the integration of the informal waste sector.

Research by Velis et al. (2012) indicates that incorporating the informal sector into a city's official Solid Waste Management (SWM) system requires addressing the interaction between these entities (A's). The Informal Recycling Sector (IRS) primarily depends on revenue from selling collected and reprocessed secondary materials into the value chain, establishing the second interaction point (B).

A significant obstacle to integration is the negative public perception of the informal sector, viewed as unhygienic, polluting, untaxed, and reliant on corrupt officials. This creates a third interface with broader society (C). To enhance its position and negotiate across these interfaces, the informal sector must organise itself. Thus, the fourth category of enabling interventions, centred on organisation and empowerment (O), underpins the three interfaces and could be considered a prerequisite for successful intervention, Velis et al. (2012). For a project initiative aimed at integrating the informal sector into a city's SWM system to succeed, it should combine individual interventions from all four categories, tailored to local needs and circumstances, Velis et al. (2012).

The research by Velis et al. (2012) further revealed significant diversity in the focus of integration initiatives within the examined cases, noting that these efforts often lack balance across the four interfaces. They emphasised the importance of giving equal consideration to all four interfaces and their interconnections, particularly by ensuring the informal waste sector can access source-separated waste, to achieve successful integration, inclusion, or formalisation initiatives Velis (2017). Furthermore, the study highlighted that future endeavours to integrate the informal waste sector should prioritise collaboration between formal and informal sectors, whilst addressing specific local requirements to ensure the development of sustainable waste management solutions, Velis et al. (2012).

Within the South African regulatory sphere, the DEFF and DSI (2020) define waste picker integration as a structured and deliberate recycling system that recognises and augments the existing role of waste pickers, capitalises on their proficiency in gathering and repurposing materials, and positions them as indispensable collaborators in the planning, execution, assessment, and renewal of the system.

The second National Waste Management Strategy in South Africa sought to ensure that all metropolitan municipalities, secondary cities, and significant towns initiated separation-at-

source programs by 2016, including diverting 25% of recyclables from landfill sites for recycling, reuse, and recovery Godfrey (2021). Most municipalities have not yet succeeded in achieving this objective, because only a limited number of cities and towns in South Africa have established separation-at-source schemes Godfrey (2021). Furthermore, none of these schemes extends across the entire geographical area of the respective city or town. The initiation and rollout of such programs in Johannesburg and Metsimaholo have been well-documented by Samson et al. (2020).

The key finding of Samson et al. (2020) in the Johannesburg and Metsimaholo case studies was that integration programs focused on the source-at-source (S@S) system, as discussed in **Figure 2**, typically dispossessed reclaimers and disintegrated them from the overall objective. Moreover, the S@S system generated inaccurate data because materials collected by the reclaimers were not included. According to Samson et al. (2020), it is essential to consider integration and S@S as interrelated policy areas, because the success of both relies on an integrated approach.

The relationship between reclaimers, municipal solid waste management systems, and the recycling economy is intricate and facilitated by separation outside the source (SoS) system Samson (2020). This system, which predates government interest in recycling and serves as the primary means of collecting post-consumer recyclables, has been overlooked by municipalities and industries Samson (2020).

2.6 Gap in literature

Waste pickers are increasingly gaining global recognition and awareness, as they participate in international events and share their experiences while also looking towards their future prospects Velis (2017). Over the past decade, significant international initiatives from organisations such as women in informal employment–globalisation and organising (WIEGO), the InterAmerican Development Bank (IDB), and the International Labour Organization (ILO) have played a crucial role in this regard Gunsilius (2010). The globalisation and waste management task force (2012–2015) of the International Solid Waste Association (ISWA) played a key role in bringing about internal transformation, resulting in a global campaign to shut down the world's largest dumpsites Velis (2017). Simultaneously, the organisation has taken steps to address the potential job losses of waste pickers and accommodate them Velis (2017).

According to Koen and Fourie (2022), the regulatory framework of the Ekurhuleni appears to be fragmented. The municipality's solid waste by-Laws, enacted in 2002, does not specifically address waste picking. Nevertheless, they have taken a more lenient approach towards waste pickers, despite the wording of the bylaws Koen and Fourie (2022). It has further lagged behind in the application of the South Africa NWMS (2020) which mandates that, among many things, to have separation at source programs by 2016, as well as diverting 25% of recyclables from landfill sites for reuse, recycling, or recovery (Gumbi, 2015; Seabi, 2022).

According to (Mokoena, 2019), the CoE possesses five operational landfill sites and lacks any material recovery facilities that could assist in diverting waste from these sites. According to Koen and Fourie (2022), waste pickers in Ekurhuleni are restricted to working at only three landfill sites, accounting for less than 30% of the total landfill utilised for general waste within the municipality. Notably, only one of these three landfill sites is owned and operated by the CoE, whereas the remaining two are privately owned (Mokoena, 2019). Most waste pickers in CoEs salvage materials at municipal landfill sites Gumbi (2015). These are known to collect recyclables through what Samson (2020a) calls ‘separation-outside-source’ (SoS).

According to Samson (2010b), the South African government acknowledged that rehabilitating landfill sites presents significant health and safety concerns. Nonetheless, advocating the eradication of waste pickers without ensuring their participation in future recycling programs jeopardises the subsistence strategies of individuals who are already grappling with providing for themselves and their dependents Samson (2010b). The DEFF NWMS (2020) urges municipalities and private organisations to establish material recovery facilities that can be safely operated by waste pickers prior to disposal of waste in landfills DEFF (2020a).

The recovery of waste by informal waste pickers has been the subject of numerous studies, with a particular focus on street waste pickers and the sale of waste to buy-back centres. However, the researcher is unaware of any study that has sought to quantify the total amount of waste recovered from landfill sites by the informal waste sector in a situation where there is no separation-at-source initiative.

The researcher conducted a comprehensive examination of the existing literature, focusing on the incorporation of waste pickers and quantity of recoverable materials within the municipal waste value chain. The results of this study are as follows:

- Samson (2010) research on organising reclaimers in Tshwane, South Africa: Lessons from Top Down and Bottom Up Experiences analysed the collaboration between informal waste collectors who had formed a collective bargaining group known as the network and their interaction with the potential for integration within the waste management system of the City of Tshwane.

- Velis et al. (2012) examined ten case studies focusing on initiatives aimed at incorporating informal recycling activities into formal systems in countries across Latin America and Asia. The researchers utilised these case studies to evaluate a framework or tool and demonstrate its potential application in future scenarios. Notably, the study did not include any examples of informal waste sector integration from sub-Saharan African nations.

- The research conducted by Sasaki and Araki (2014) examined the informal recycling efforts of landfill waste pickers at and around the Bantar Gebang final disposal site in Jakarta, Indonesia. This research not only focused on the Bantar Gebang site but also extended to the surrounding areas of the landfill site.

- Linzner and Salhofer (2014) conducted a study to explore the effects of municipal solid waste recycling and the role of the informal sector in urban China. This study assessed the proportion of total waste generated in urban areas of China and the extent to which it was retrieved or recycled by the informal waste sector. This study focused on material recovery before ultimate disposal at a landfill site.

- Silva De Souza Lima and Mancini (2017) investigated the incorporation of the informal recycling sector in Brazil, with a focus on Sorocaba City. Their research analysed the quantity of recyclables gathered by street waste collectors and the diversion of waste from landfills.

- Guibrunet (2019) focused on determining the rate of recycling practiced by street waste pickers who collected waste from specific streets in the Tepito neighbourhood of Mexico City. This process replaced the municipal collection service and was interconnected with

a formal waste-collection system. The primary goal of this study is to measure the financial transactions triggered by informal waste pickers.

- The research conducted by Nzeadibe and Ajaero (2010) examined the recycling rates achieved by the informal waste sector in the cities of Enugu and Onitsha in southeastern Nigeria, Lagos and Ilorin in the southwest, and Abuja in northern Nigeria, consisting of both itinerant and landfill waste pickers.

- (Nguyen and Nitivattananon (2019) studied Bangkok as a case study and scrutinised the connections between municipal garbage collection teams and waste pickers at transfer stations as well as how these activities contribute to waste recycling. This research evaluates the functions of the informal waste sector and delves into how the activities of the informal waste sector at transfer stations and other official venues are interwoven with the larger municipal solid waste (MSW) system.

- The study conducted by Seabi (2022) investigated role-players' opinions concerning the inclusion of waste pickers in the formal waste management system in South Africa, with a particular emphasis on four Gauteng municipalities and two buy-back centres in the province. This study aimed to explore the multiple viewpoints of stakeholders regarding the inclusion of waste pickers in the formal waste management industry, as well as the potential advantages and obstacles related to this process. It should be noted that the City of Ekurhuleni was not included among the municipalities examined in the study.

- The research carried out by Sekwela (2017) examined the implementation of the policy and practice of integrating reclaimers in the City of Johannesburg, with a specific focus on the separation of external source programs at both the material recovery facility and one operational landfill site.

The following studies were conducted in the city of Ekurhuleni to explore both informal waste pickers and their integration or role.

- The research conducted by Mokoena (2019) aimed to evaluate the extent to which the provisions of the NWMS had been implemented by the CoE. However, the study did not produce any findings regarding NWMS's objective of achieving a 20% increase in

recyclables diverted from landfill sites through reclamation. Despite the exclusion of informal waste pickers from the study, one of the key recommendations made was the formalisation of informal reclaimers at the CoE's permitted landfill sites, Mokoena (2019).

- An ongoing study by Mngomezulu and Senekane (2023) examined the perspectives of informal waste pickers regarding their integration into the waste management system of the City of Ekurhuleni Municipality. This research concentrates on waste pickers working at the Simmer and Jack and Rooikraal landfill sites, which are managed by the CoE.

- The study conducted by Gumbi (2015) aimed to characterise the status quo of current waste management and minimisation in Ekurhuleni. The study focused on the role that different stakeholders play in waste minimisation, including households, Ekurhuleni personnel, and informal waste pickers. The study also explored into towards understanding the nature of recycling initiatives at landfill sites as well as the types and quantities of waste disposed in all cities of the Ekurhuleni landfill sites over the period 2006 – 2011, as well as the privately owned landfill site Chloorkop.

  This study focused on 89% of waste pickers operating at the privately owned Chloorkop landfill site, and only 11% of the waste pickers studied were from the Weltervreden landfill site owned by the City of Ekurhuleni. These waste pickers were reclaimed from streets and households (52% of waste pickers), illegal dump sites (23%), and landfill sites (19% of waste pickers).
  The study did not examine the entire landfill site waste picker population at the other three sites in the City of Ekurhuleni landfill sites: Rietfontein, Rooikraal, and Simmer & Jack. The study did not analyse the total amount of recyclables removed by waste pickers from all four cities of the Ekurhuleni-owned operational landfill sites that permit waste pickers. Weltervreden was the only site in which the number of recyclables recovered by informal waste pickers was assessed. This study did not explore the integration of waste pickers, but rather focused on the role they could play in waste minimisation within the city of Ekurhuleni. This study did not examine the correlation between the recoverables from the other four operational landfill sites.

The literature review has highlighted significant gaps in the assessment of the role and integration of the informal waste sector within an urban and growing city, such as the City of Ekurhuleni. Specifically, there is a need to understand the volume of waste disposed at landfill sites in the absence of any source separation programs or initiatives, and how this waste is later recovered by waste pickers. This literature review underscores the importance of addressing these gaps to ensure effective waste-management strategies in urban areas.

The purpose of this study is to bridge this gap in the literature and provide additional knowledge to policymakers, municipal officials, managers, and the regulatory framework of the waste management sector on the measurable impact of waste pickers on material recovery and reuse on landfill sites in relation to the amount of waste generated, as well as the need to recognise their input and integration into the system. This research enhances the comprehension of the part played by waste pickers in the municipal solid waste management sector and offers important perspectives for those in charge of making decisions.

2.7 Chapter Conclusion

A literature review of the informal waste sector reveals that it plays a significant role in waste management, particularly in developing countries, where formal sector resources are insufficient. The presence of informal waste pickers can be attributed to the absence of reliable waste collection services, rapid population growth, a large unskilled labour force, depleting and inadequate infrastructure, economic poverty, and insufficient service affordability. Informal waste pickers contribute to waste value systems by reducing waste quantities disposed of at landfill sites, ultimately saving costs to the formal waste sector. There is clear potential for mutually beneficial cooperation between the formal and informal sectors.

The literature review highlighted significant gaps in the assessment of the role and integration of the informal waste sector within an urban and growing city, such as the City of Ekurhuleni. Specifically, there is a need to understand the volume of waste disposed at landfill sites in the absence of any source separation programs or initiatives, and how this waste is later recovered by waste pickers. This literature review underscores the importance of addressing these gaps to ensure effective waste-management strategies in urban areas.

CHAPTER 3.WASTE AND INFORMAL WASTE PICKERS LEGISLATION IN SOUTH AFRICA

3.1 Introduction

This section provides a comprehensive understanding of the policies and regulations governing waste management in South Africa, and the key events that have led to their transformative growth. The focus is on the significant milestones that have been instrumental in addressing pressing waste management issues and in implementing the waste management hierarchy. Additionally, the responsibilities of municipalities in discharging duties related to waste services are examined. Finally, the integration of informal waste pickers into waste management policies was discussed.

3.2 The landscape of waste regulations in South Africa

The regulatory landscape for waste management in South Africa has undergone considerable transformation over the years, with several noteworthy milestones and events contributing to its current state Matete & Trois (2008). Comprehending these events and their implications for waste management is essential for formulating effective policies and regulations that address the pressing challenges confronting the nation. Implementing a waste management hierarchy that prioritises waste reduction, reuse, and recycling over landfills is challenging Matete & Trois (2008). This approach has been instrumental in decreasing waste disposal expenses and fostering sustainable waste management Matete & Trois (2008).

To effectively understand the evolution of waste management, recycling, and the informal waste industry in South Africa, it is necessary to evaluate the policies and regulatory frameworks that have shaped these sectors. The integration of these policies and regulations is important to understand the dual responsibility of municipalities in the context of integrating the informal waste sector.

3.2.1 The Landfilling Era

The historical roots of waste management legislation in South Africa can be traced back to the apartheid era, which saw the implementation of the first significant milestone, in the form of the Environmental Conservation Act (Act 73 of 1989) of 1987 Godfrey et al. (2017). This legislation is known as "The Age of Landfilling", as described by Godfrey et al. (2017).

According to the results published in the DEA (2012), a significant portion of the waste generated in South Africa is not managed in compliance with the waste management hierarchy. Specifically, the study reported that 90.1% of the total waste was disposed of in landfills, while only 9.8% was recycled, and an insignificant 0.1% was treated (DEA, 2012). These findings indicate that South Africa requires a more efficient waste-management system to address this issue.

The primary objective of this era was to mitigate the ecologically detrimental effects associated with improperly managed landfills that encompass both controlled and uncontrolled dumpsites Godfrey et al. (2017).

The implementation of permits for landfill sites was initiated in Section 20 of the Environment Conservation Act (Act 73 1989). This is largely supported by the South African Constitution (Act 108 of 1996), which is mandated to ensure that the right to the environment is not harmful to health Oelofse (2013). Nonetheless, the issuance of these permits was subject to the development of a set of Minimum Requirements in 1998 intended to ensure guidance on the handling, classification, monitoring, and disposal of waste to a particular standard (Oelofse, 2013).

The Department of Water Affairs (DWA) Minimum Requirements in 1998, when viewed independently, were insufficient to address the issue of numerous uncontrolled landfill sites throughout the country Oelofse (2013). These requirements were applicable solely to authorised landfill sites and did not extend to unauthorised sites that existed and were in operation Oelofse (2013). Consequently, landfills that failed to meet the Minimum Requirements could not be granted permits Oelofse (2013).

To this point, South Africa's waste management endeavours failed to address all waste issues that had been encountered and failed to prove advantageous to industry stakeholders, as highlighted by Oelofse and Godfrey (2017). The scarcity of well-defined policies governing waste collection, selection, trading, and recycling has resulted in disparities in waste management procedures, including disposal, treatment, recovery, and recycling as well as reduction and avoidance Oelofse & Godfrey (2017). The realisation of the limitations in the existing regulations at the time paved the way for the next phase of regulatory and policy development.

3.2.2 The beginning of the Recycling Era

According to Oelofse and Godfrey's (2017) research, the latter part of South Africa's waste management period was marked by a significant transition towards recycling and material recovery, which was referred to as "The Emergence of Landfilling." The government's enactment of Integrated Pollution and Waste Management (IP&WM) and the 1st National Waste Management Strategy (NWMS) in 1999 played crucial roles in facilitating this transition.

The Department of Environmental Affairs and Tourism (DEAT) held an inaugural National Waste Summit in September 2001, in Polokwane, Limpopo Province, South Africa. The aim of the summit was to emphasise the importance of waste management for all South Africans and to encourage swift action to minimise, repurpose, and recycle waste in order to preserve and establish a clean and healthy environment.

The Polokwane Declaration aimed to improve waste management practices by enforcing the cradle-to-cradle approach towards zero waste to landfills by 2022 Seabi (2022), while stabilising waste generation and reducing waste disposal by 50% by 2012, Polokwane Declaration (2001).

After the Polokwane Declaration of 2001, two notable accomplishments were made during the ensuing period. The first was the implementation of a tax on plastic bags, commonly referred to as the "plastic bag ban," which aimed to decrease the amount of plastic waste Seabi (2022).

According to Nhamo (2004), the second milestone led to a significant reduction in the number of plastic bags distributed to consumers, and three months after the plastic bag regulations were implemented, the reduction was between 80% and 90%. However, the figures decreased slightly to an average of 70% after one year later Nhamo (2004).

The expansion of the local recycling industry was evident, as indicated by Oelofse and Godfrey (2017), with the emergence of numerous voluntary materials organisations, such as the PET Recycling Company (PETCO), which were largely influenced by the initiatives of Western economies and multinational corporations, such as Coca-Cola, resulting in an increase in recyclable materials.

The increase in recycling rates was largely attributable to the thriving informal waste sector, which was previously unnoticed. The increase in the number of informal waste pickers in South Africa over the years is a clear indication of the growing unemployment rate in the country, which has forced individuals to seek employment in the informal subsistence sector. This trend is particularly evident in the recent increase in the number of waste pickers. As Oelofse and Godfrey (2017) highlight, this trend has contributed to the rise in recycling rates in the country, although still at fairly low rates, with as little as 10% diverted from landfills.

The government of South Africa wrote the informal waste pickers existence into policy even as far back the “The Age of Landfilling”. In 1998, the Department of Water Affairs Minimum Requirements for Waste Disposal offered waste pickers a certain level of protection to work in landfills. This protection encompassed provisions that promoted occupational health and safety as well as ensuring that waste pickers had a voice and representation. Nevertheless, this protection would only be effective for waste pickers if the specific landfill they were based on was subject to these requirements Koen and Fourie (2022).

The South African Constitution (Act No. 108 of 1996) contains provisions in Section 24 that guarantee the right of all individuals to live in a safe environment while also ensuring the protection of the environment for the benefit of present and future generations. Although the mandate in the constitution is very clear, waste pickers have yet to receive protection under significant labour laws, including the Occupational Health and Safety Act (OHASA) of 1993 (Act 85 of 1993).

Even after significant strides in waste regulations between 1989 and 2007, South Africa was confronted with a growing population, increased waste generation, and inefficient waste delivery systems in municipalities. According to the findings of the Department of Environmental Affairs and Tourism (DEA) in 2007, a significant proportion of South African municipalities (87%) lacked the necessary infrastructure and provision to successfully operate municipal solid waste systems as reported by Seabi (2022).

3.2.3 Waste Hierarchy Era

In 2008, South Africa witnessed the emergence of its initial waste management legislation, the National Environmental Management Waste Act (NEMWA), which significantly affected the country's legal waste management system. Designed as the nation's first law dedicated to waste management, the NEMWA provided a comprehensive framework for effective waste

management practices. This Act also played a crucial role in regulating the entire waste and secondary resource value chain in the country. Consequently, various regulations have been established to control this sector and to mitigate the environmental and health consequences of inadequate waste management, Godfrey & Oelofse (2017).

The emphasis has been on shifting waste management practices to the waste hierarchy from disposal to reuse, recycling, and recovery, while addressing the adverse effects of poor waste management.

The waste management hierarchy comprises several tiers, each representing a distinct approach to waste disposal. These tiers were arranged in a prioritised descending order, as illustrated in **Figure 5** Eberhard (2018). The waste management hierarchy outlines a series of steps that prioritise effective waste management methods, with the preferred option being to avoid or reduce waste generation Eberhard (2018). Subsequently, emphasis is placed on utilising waste for either a comparable or divergent objective, without altering its inherent properties or traits Eberhard (2018). Recycling waste materials into new materials for various uses and recovering specific components or materials are subsequent steps Eberhard (2018). The second to last steps involve converting waste materials that cannot be reduced, reused, or recycled into energy Eberhard (2018).

Finally, the least desirable option is the treatment and disposal of waste, adopting higher levels of waste management hierarchy advocating a cradle-to-cradle approach that emphasises recycling or reusing products at the end of their life cycle to create new materials or products Eberhard (2018).

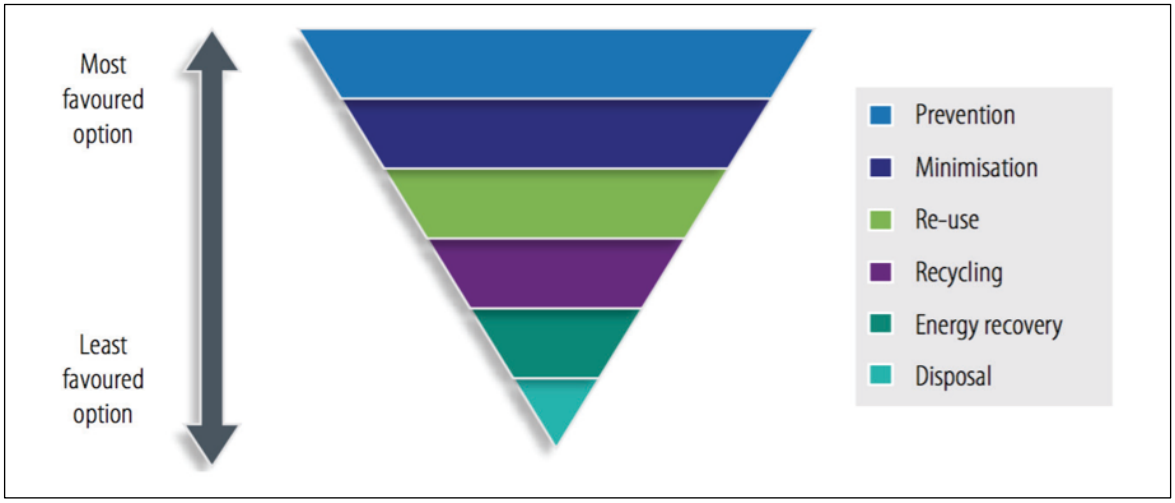


Figure 5: Waste Hierarchy (Eberhard, 2018)

South Africa's legal waste management framework has been substantially shaped by the waste hierarchy established by the National Environmental Management Waste Act (NEMWA). The Act, enacted following its publication, mandates that the government and waste industry adhere to the waste management hierarchy. The objectives set in the hierarchy were implemented and achieved.

The National Environmental Management Waste Act (NEMWA) mandates various instruments that uphold the duty of care, including Integrated Waste Management Plans (IWMPs), waste management plans, norms and standards, and extended producer responsibilities (EPR) (DEA, 2011; Seabi, 2022). Additionally, IWMPs guarantee that municipalities adhere to the waste management hierarchy, thereby promoting a new way of thinking (DEA 2012).

3.2.4 The EPR Era

The National Waste Management Strategy (NWMS) in South Africa was updated in 2020 with the aim of building on past accomplishments and the 2011 version, which marked a significant shift towards a circular economy (DEFF, 2020b). The National Waste Management Strategy (NWMS) of 2011 was the inaugural policy document to recognise the role of waste pickers in assisting municipalities in fulfilling the objectives outlined in the National Environmental Management: Waste Act (NEM:WA) of 2008 Seabi (2022).

The National Waste Management Strategy (NWMS) revision of 2020 sought to minimise waste by implementing waste prevention and resource management initiatives aimed at achieving a circular economy. This strategy emphasises the need for innovative approaches and tools for informal waste pickers Magomola (2019).

It further introduced industrial symbiosis and extended producer responsibility as a means of mitigating the negative impacts of waste management on society and the environment, introduced under the Section 18 Regulations of the National Environmental Management Waste Act on 5 November 2020. The regulations, which became effective on May 5th, 2021, underscore the significance of Extended Producer Responsibility (EPR) as a fundamental element of the National Environmental Management Waste Act (NEMWA).

The Extended Producer Responsibility (EPR) approach is based on the principle of assigning manufacturers responsibility for their products from cradle to grave, including end-of-life management such as take-back, recycling, and disposal. Proponents of this approach

contend that, by imposing environmental costs on producers, they are motivated to develop products with reduced disposable content, increased recyclability, and more sustainable packaging.

South Africa has had voluntary material organisations since the mid-2000s, some of which have implemented aspects of EPR and operated similarly to a Producer Responsibility Organisation (PRO). Nonetheless, the legal framework established by the NEM Waste Act (Act 56 of 2008) provided the opportunity to transition from voluntary to mandatory EPR schemes Godfrey and Oelofse (2017).

The following clauses in the EPR address the inclusion of waste pickers.

- 5A1(m): The Producer Responsibility Organisation should incorporate informal waste collectors, waste pickers, and pickers into the post-consumer collection value chain.
- 5A1(p): The National Registration Database compensates waste collectors, waste pickers, and pickers for collection services and environmental benefits by charging a collection service fee, which will be reviewed annually by the national department responsible for Environmental Affairs by November 2022.

The regulations set out key milestone dates for cities and municipalities as follows:

- By 2021, all metropolitan areas should have EPR integration programmes in place.
- By 2024, all secondary cities should have integrated programmes.
- By 2024, 500 jobs had to be created for the recyclables.

Critics have argued that implementing a mandatory EPR program for all waste streams can negatively affect the livelihoods of waste pickers. According to Godfrey (2016), traditional mandatory EPR can displace waste pickers from the market and restrict their access to waste. This could compromise their ability to make a living through waste picking, as larger formal players would dominate the market and threaten the margins of waste pickers. Additionally, waste may not reach landfill sites, further inhibiting the ability of waste pickers to earn a living.

3.3 Waste Pickers Policies and Regulations in South Africa

3.3.1 Background

Although waste management laws exist in South Africa, there is a need to adequately address the integration of waste pickers such as those working at landfill sites. It is essential to recognise that poor waste management practices and their implementation not only impact the working conditions of waste pickers but also put their livelihoods at risk. Even under improved working conditions, elimination or ineffective enforcement of waste management practices can adversely affect them.

The National Environmental Management: Waste Act 59 of 2008 (NEMWA, 2008) introduced a noteworthy policy change that allowed salvage operations under specific circumstances and supported the existence of informal waste pickers. The requirement for a waste management license stipulates that, if applicable, it must specify the conditions under which salvaging of waste at landfill sites may be carried out (NEM:WA 2008: section 51(1)(i)), Koen and Fourie (2022).

However, although the Act recognised the economic potential of waste as a resource, it neglected to acknowledge the essential role of waste pickers in the waste management sector. As a result, waste pickers have been rendered invisible by the government, and their contributions to waste value chains have gone unrecognised, as pointed out by Blaauw et al. (2015), even after the implementation of the Waste Act.

3.3.2 Waste Picker Integration Guideline for South Africa, 2020

The informal recycling sector has garnered recognition from the Department of Environmental Affairs (DEA) and Council for Scientific and Industrial Research (CSIR) for its remarkable contribution to the country. As per CSIR's 2016 report, this sector saved an impressive R750 million in municipal landfill airspaces across the nation in 2014. (2016). Additionally, DEA's 2017 report showed that the sector collected 80-90% of recyclable materials throughout the country in the same year. Integrating the informal recyclable collection industry into national source separation initiatives is increasingly emphasised to promote recycling and reduce landfill waste.

The National Waste Management Strategy (DEAT, 1999) aims to foster a favourable environment for waste pickers to collect recyclables from landfills. The strategy proposed the

formalisation and regulation of salvaging landfills in 2003, with a complete phasing-out in due course (DEAT, 1999). Additionally, the plan sought to end the unregulated salvage of general landfill sites as soon as possible. (DEAT, 1999).

Godfrey et al. (2016) demonstrated a substantial increase in the number of individuals engaged in the collection of waste from landfill sites and curbsides attributable to the absence of governmental oversight. However, the national government has yet to take minimal steps to recognise and integrate waste pickers into the waste industry. Furthermore, South Africa has not yet established a comprehensive source separation program, as mandated by the strategy of implementing source separation programs in metropolitan municipalities in 2016 outlined by Godfrey et al. (2016).

One of the key factors in fostering greater respect and understanding between waste pickers and the communities they serve is to eliminate the social stigma that is often associated with their profession while also legitimising their work. This was emphasised in a study conducted by Samson et al. (2022).

To promote more inclusive strategies for engaging reclaimers, the Department of Environment, Forestry, and Fisheries (DEFF) and the Department of Science and Innovation (DSI) introduced guidelines for municipalities and the solid waste industry in 2020 to enhance the working conditions of waste pickers by integrating them into South Africa's waste economy.

The primary aim of these guidelines was to offer advice to local authorities and industries on how to efficiently incorporate waste pickers into their formal waste management frameworks, while also providing support to these entities in the execution and institutionalisation of waste picker integration strategies Seabi (2022).

Despite these initiatives, the process of integration is still in its early stages and much work remains to be done by Samson et al. (2022).

3.4 Local Government Function

As per legal provisions, metropolitan areas, such as the City of Ekurhuleni, play a distinct role in managing solid waste. They have been entrusted with both regulatory and management responsibilities and must be discharged efficiently. The regulatory function of metropolitan areas encompasses ensuring adherence to waste management regulations, formulating

tariffs, providing incentives, and imposing penalties (Eberhard 2018). Moreover, they are responsible for waste collection, diversion, transfer, and disposal, which are crucial aspects of their management.

Metropolitans operate within the framework of national regulations. In addition, the private sector is involved in waste management and can work independently or contract with the local government to provide services Eberhard (2018). According to the provisions laid out in the Constitution of South Africa (1996), municipalities are entrusted with specific duties and authority towards waste management and include refuse removal and management of refuse dumps/landfill sites Eberhard (2018).

The Municipal Systems Act of 2000 (Act 32) defines municipalities as both service authorities and providers. The authority function, which includes policy development, by-law drafting, tariff setting, investment financing, service delivery decisions, and service regulations, empowers municipalities to make informed decisions in line with their by-laws and other mechanisms. However, the service provider, whether internal or external to the municipality, is solely responsible for the actual service provision. For example, in the case of solid waste, the service provider is responsible for collecting refuse, transporting it, and managing the waste disposal facilities.

The Waste Act (59 of 2008) mandates that each municipality be responsible for fulfilling its obligations related to waste services, which encompasses waste collection, storage, and disposal. These obligations entail the formulation of a comprehensive waste management strategy, adherence to national and provincial guidelines, establishment of local regulations, and appointment of competent waste management teams.

According to the provisions of Section 12 of the Municipal Systems Act of 2000 (Act 32), it is incumbent on the executive authority to ensure the fulfilment of the essential needs of the local community, foster their growth, and provide all members with access to fundamental municipal services at an affordable cost. This encompasses waste management, as stipulated in Section 9(2) of the Waste Act, in which everyone must have access to reasonably priced waste collection and disposal services.

These services should be accessible and provided in an efficient and economical manner while making the best use of available resources, and should also be financially and environmentally sustainable. Regular reviews should be conducted to ensure that the

services are of high quality and that opportunities to upgrade, extend, and improve them are explored, as per Section 73(2) of the Municipal Systems Act.

The following are the six (6) main responsibilities of municipalities in their roles as waste service authorities (**Error! Reference source not found.**).

Figure 6: Core Functions of Municipality Waste Services Authority (Eberhard, 2018)

The Waste Act mandates that municipalities acquire licences for conducting any of the waste management activities listed in Section 19 of the National Environmental Management Waste Act 2008 (Act No. 59 of 2008). This comprises transfer and disposal facilities, with some exemptions that may be applicable based on scale and assessed risk.

The waste management policy serves as a crucial framework for providing guidance on waste management services within a municipality's jurisdictional area. It is imperative for both local and metropolitan municipalities to develop comprehensive waste management policies to effectively address the issue of waste management (Eberhard 2018).

Waste management by-law serves as a regulatory and enforcement mechanism for municipal waste management policies. These by-laws empower municipalities to exercise legislative authority over waste management within their geographical jurisdictions.

The objectives of the by-laws are as follows: -

- As required by Section 24 of the Constitution, a municipality must regulate its waste management within its jurisdiction.
- Establish a legal and administrative framework to manage and regulate waste management activities in compliance with relevant laws.
- Waste is minimised and disposed of in an environmentally friendly manner by reuse, recycling, or recovery.
- Promote and deliver effective waste services.

Regulations governing waste management activities conducted by waste generators and service providers at the local level were established using waste bylaws. In the case of the City of Ekurhuleni, these bylaws were first introduced in 2002 and have since been in effect. However, it is important to note that these bylaws were developed prior to the implementation of the Waste Act (2008), and as such, they need to be updated to ensure compliance with current legislation.

The city of Ekurhuleni developed integrated waste management by law, and a resolution was passed on 25 March 2021 and is currently enforced. The by-laws do not explicitly and openly state anything about the inclusion of the informal sector, only the inclusion of informal recyclers, or the activities permitted by informal recyclers. A summary of the inclusions is provided below:

- Chapter 1: Definitions of informal recyclers.
- Chapters 2 and 4(g) state that the municipality's objective is to manage and promote waste recycling and regulate informal recyclers (CoE; IWM By-law 2021).
- Chapter 5, clause 27, outlines the regulated activities of informal recyclers, as follows:

- Individuals involved in informal recycling activities are not authorised to arrange and package items in any public location other than those specifically designated by the local authority for this purpose. It is essential that these designated areas are consistently maintained in a clean and orderly manner.
- Recyclers who operate informally ought to refrain from dismantling the contents of waste containers from which they retrieve materials, as this practice is discouraged.

The Waste Act 59 of 2008 established specific requirements for creating an integrated waste-management plan. Integrated waste management planning encourages sustainable growth in municipalities. To achieve this, municipalities must strategize and align themselves with the Integrated Development Plan, taking into account socioeconomic, technical, financial, institutional, and environmental factors in a comprehensive waste management plan.

The City of Ekurhuleni currently has no integrated waste-management plan. As of November 2023, the CoE officials interviewed by the researcher indicated that the draft version was undergoing a reworking and consultation process initiated by July 2024. An external consultant was appointed to facilitate the stakeholder engagement.

3.4.1 Integrated Waste Management Plan

The development of the City of Ekurhuleni Integrated Waste Management Plan is still in the draft phase and is expected to be completed by the end of 2024. However, the plan will outline several objectives and goals for waste management and disposal, with the first goal being "Effective waste minimisation, re-use, recycling and recovery of waste" as per the NWMS.

Although the CoE has been improving its waste services for the people of the municipality (with 98 % of them receiving a waste collection service), it is yet to introduce a separate waste collection system at the household level. This has resulted in low recycling rates and high volumes of garden waste being sent to landfill. Consequently, there is a significant market for recycling and waste recovery within CoEs. (CoE, Waste Management Presentation 2022).

3.4.2 Integrated Waste Management by Laws

The City of Ekurhuleni aims to regulate waste management activities in its jurisdictional area in accordance with the environmental rights outlined in Section 24 of the Constitution. This is

done by providing an integrated waste management value chain and complying with the City of Ekurhuleni 2021 Integrated Waste Management by Laws and other applicable laws.

According to the Integrated Waste Management by Laws of 2021, the City of Ekurhuleni is responsible for managing and regulating waste. A City must ensure that waste is avoided or minimised, reused, recycled, and recovered. Any remaining waste must be treated and disposed of in an environmentally friendly manner. The city must also promote and ensure the effective delivery of waste services, as well as ensure universal access to municipal waste services.

The City of Ekurhuleni Waste Management Services Department is responsible for the implementation, enforcement, and management of waste management through laws within the municipality. Within the framework of the by-laws, the core service delivery areas of the Waste Management Services department include the following.

- Waste collection from households, industrial areas, and informal settlements.
- Litter picking and cleaning of illegal dumps within municipalities.
- Street sweeping in central business districts, areas, and industrial areas.
- Operation and maintenance of a network of waste management facilities, that is, public offloading, transfer stations, mini dumps, and landfill sites.

Figure 7 summarises the City of Ekurhuleni municipal business service chain. In the case of cities, the main focal areas are collection, transfer, recycling, disposal, and rehabilitation.

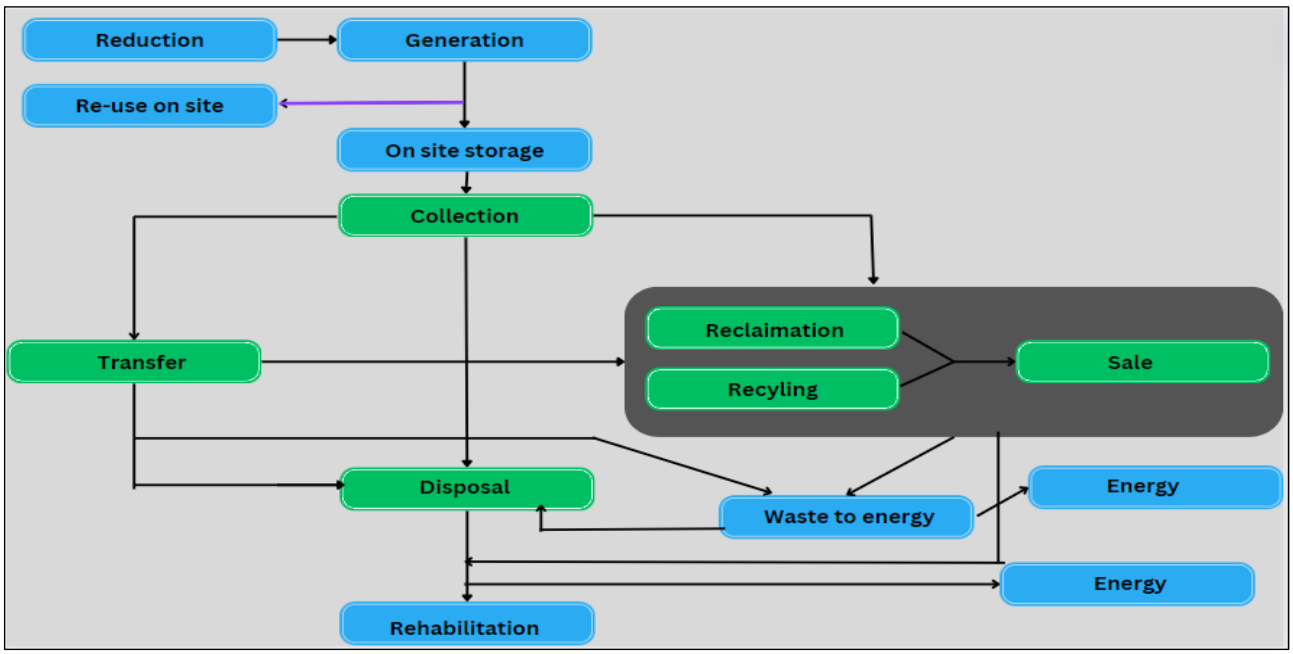


Figure 7: The scope of the municipal waste business adapted from Eberhard, 2018

3.4.3 City of Ekurhuleni Business Model

Waste management primarily aims to minimise waste through reduction, reuse, recycling, and safe disposal. Nevertheless, the waste management industry is intricate and depends on numerous interconnected elements for an efficient operation. The waste management business comprises of three key participants: waste generators, waste service providers (both public and private), and the local authority responsible for waste management. These groups work in tandem to manage waste effectively Eberhard (2018).

Proper functioning of the waste management system relies on the active participation of all stakeholders, including individuals, households, businesses, and institutions. It is crucial to reduce the amount of waste generated, optimise reuse, and participate in recycling programs by separating recyclable materials from their point of origin or delivering them to designated recycling facilities. Additionally, proper disposal of litter and refusal is essential, as it avoids littering and illegal dumping. By working together at the individual, community, and institutional levels, municipalities can ensure a cleaner and more sustainable environment for everyone. Eberhard (2018).

Various regulatory, economic, and socio-psychological factors can strongly influence individuals, communities, and institutions. The city has considerable control over regulatory tools and economic factors, which can significantly impact socio-psychological factors. Regulatory tools involve imposition of fines and disincentives to deter illegal dumping, littering, and effective enforcement. The City of Ekurhuleni also regulates waste-related

activities executed by the private sector such as collection, transfer, material recovery, and disposal (Eberhard, 2018), ***Figure 8***).

Economic incentives can be introduced as a means to

- The collection tariff;
- The gate fee at the city's disposal facilities; and
- Application of incentives for material recovery for recycling and reuse, including extended producer responsibility (EPR).

The City of Ekurhuleni can influence socio-psychological factors through educational and community participation initiatives. The city is a direct actor in the waste management business, and the effectiveness and efficiency with which it fulfils these functions play a significant role in the overall effectiveness of waste management in the City of Ekurhuleni.

The private sector is an active participant (in addition to being a waste generator and hence a customer) in collection, transfer, materials recovery, and disposal activities. The private sector typically plays this role in competition with other providers and the City of Ekurhuleni. The outcomes are strongly determined by the regulation and management of this competitive market.

In discussing the informal waste sector in City of Ekurhuleni, it is necessary to discuss and identify the other key players within the CoE water value and service chain, in particular the producer responsibility organisations (PROs) namely, the Glass Recycling Company, MetPac, Plastics SA, Petco, Polyco, RecycledZA, the Polystyrene Association of South Africa, and Fibre Circle Godfrey et. al. (2021).

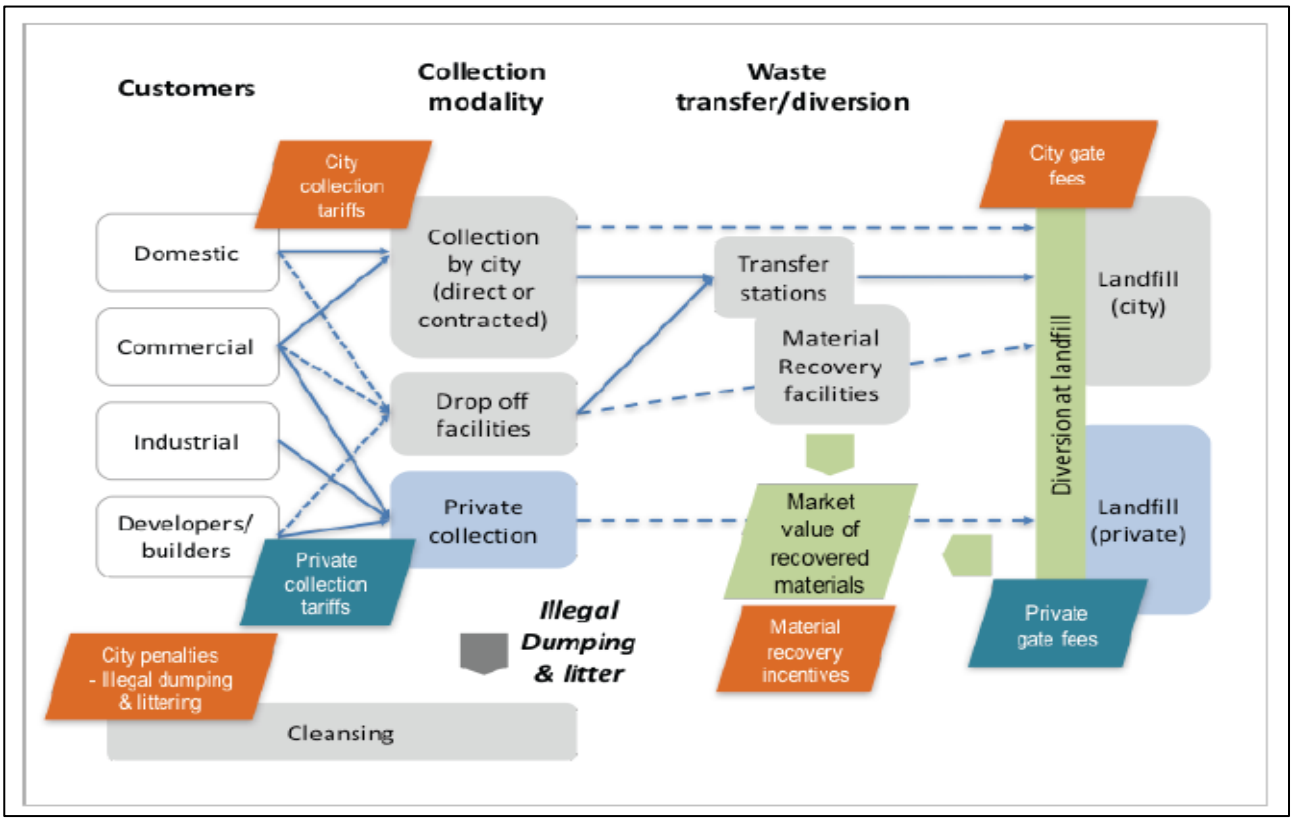


Figure 8: City of Ekurhuleni Key Waste Management Services & Incentives (Eberhard 2018).

3.5 Chapter Summary

The regulatory landscape of waste management in South Africa has undergone considerable transformation over the years, particularly with the inclusion and integration of waste pickers. Several noteworthy milestones and events contributed to this state.

Four distinct periods in the history of South Africa's waste management sector have been identified, which include "The Age of Landfilling," "The Dawn of Recycling," "The Waste Hierarchy," and "The Enactment of EPR."

South Africa has introduced policies aimed at preventing waste from entering landfills by focusing on reuse, recycling, and recovery. Despite these efforts, the response has been lukewarm, with barely 10% of the general and hazardous waste generated in 2011 diverted from landfills.

The South African waste sector has made significant strides to recognise and integrate waste pickers into the legislative framework. The first significant step towards acknowledging the

role of waste pickers in the waste management value chain was taken with the National Environmental Management Waste Act (59 of 2008), which followed the amended bill of 2007. However, this legislation does not include provisions for the integration of waste-pickers. The National Waste Management Strategy (NWMS) of 2011 was the first policy to explicitly discuss the need for waste picker integration, and its subsequent revision in 2020 emphasised the importance of innovative approaches and tools for informal waste pickers.

In 2020, the implementation of waste picker integration guidelines aimed to improve the relationship between waste pickers and their communities by eliminating social stigma and promoting more inclusive engagement strategies for reclaimers.

CHAPTER 4.RESEARCH STUDY AREA

4.1 Introduction

This chapter presents a comprehensive analysis of the geographical setting of the study, namely the City of Ekurhuleni. This study provides an in-depth account of a city's demographics and socio-economic attributes, along with an overview of its waste value chain, waste management policies, and systems. Furthermore, the analysis sheds light on the unique characteristics of the region, including economic and spatial disparities. This approach aims to promote a comprehensive and nuanced understanding of the subject matter while also providing an appropriate contextual foundation for comprehending the role of the informal sector in the city's waste management value chain.

4.2 Study Area

4.2.1 Background

The City of Ekurhuleni, one of three metropolitan municipalities in Gauteng Province, spans 1,975 square kilometers. Its population accounts for 6% of the national total and 28% of Gauteng's population (CoE IDP 2022/23 – 2026/2027). It houses the OR Tambo International Airport, South Africa's largest. As per the 2011 census, Ekurhuleni had 3,178,470 residents, with 71.7% being of working age (16-64 years). The CoE IDP 2022/23 – 2026/2027 estimates the population at approximately 3,379,104.

Ekurhuleni was established in 2000 due to local government restructuring, stretching from Germiston in the west to Springs and Nigel in the east, and consists of nine towns: Alberton, Benoni, Boksburg, Brakpan, Edenvale, Germiston, Kempton Park, Nigel, and Springs. It is divided into North, South, and East Service Delivery Regions for efficient service delivery (CoE IDP 2022/23 – 2026/2027).

Four significant areas on Ekurhuleni's outskirts, including Tembisa, the Katorus complex, the Kwatsaduza complex, and the Daveyton/Etwatwa complex, are far from most job opportunities. A smaller marginalized area, Actonville-Wattville, lies south of Benoni CBD. These areas comprise about 62% of the city's population (CoE IDP, 2022/23 – 2026/2027).

Ekurhuleni is a commercial, industrial, and residential hub providing various services to residents and visitors, playing a crucial role in the economic growth of Gauteng Province and South Africa (CoE IDP 2022/23 – 2026/2027).

4.2.2 Socio-Economic Status and Demographics

The City of Ekurhuleni Integrated Development Plan 2022/23 – 2026/2027 reports that Ekurhuleni's population grew from 2,481,752 in 2001 to 3,379,104 in 2016, exceeding 6% of South Africa's total population (Stats SA, 2017). The growth rate decreased from 2.8% in 2011 to 2.1%. Future projections indicate a slower growth rate (below 2%), with the population expected to exceed four million by 2030 and reach 8.8 million by 2050, driven largely by net migration. Ekurhuleni, along with Tshwane and Johannesburg, receives significant in-migration. Approximately 66% of the population is of working age, and 53% are between 20 and 49 years old. The median age is 30 years, higher than Gauteng's but 20% lower than the national median of 25 years. Age distribution shows 66% are 18–64 years old, 18% are under 18, and 6% are over 65, indicating a relatively young population similar to that of Gauteng (CoE IDP 2022/23 – 2026/2027).

Ekurhuleni's population is predominantly black (82%), with white individuals making up 14%, Coloured individuals 3%, and Indian individuals 2%. The most spoken home language is Isizulu (34%), followed by Sepedi (12%), Sesotho (11%), and English (10%). The city is multilingual, with all 11 official South African languages spoken (CoE IDP 2022/23 – 2026/2027).

4.2.3 Gross Domestic Product

In 2018, the City of Ekurhuleni contributed 19.67% to Gauteng's R1.7 trillion GDP, up from 19.57% in 2008, with its GDP increasing from R160 billion to R334 billion. Its share of South Africa's R4.87 trillion GDP remained steady at 6.85%. The city’s 2018 economic growth rate was 1.09%, similar to Gauteng's 1.12% and higher than South Africa's 0.79%. Despite being ranked third among regional economies, Ekurhuleni's share in Gauteng's GDP has stayed at 19.7% since 2008. From 2018 to 2023, it is projected to grow at an average annual rate of 1.75%, exceeding the projected growth rates for Gauteng (1.72%) and South Africa (1.60%). Economic growth peaked at 5.65% in 2010 but remains strong. (CoE IDP 2022/23 – 2026/2027).

4.2.4 Households

Ekurhuleni hosts 1,299,490 households, reflecting an increase of 284,025 since 2011, with 18.7% living in informal dwellings according to a 2016 survey. These households represent about 25% of Gauteng's and 10% of South Africa's total (CoE IDP 2022/23 – 2026/2027). Over 50% of households have properties either fully paid off or in the process, 22% rent from

private individuals, and 11% rent from the state, including municipalities and government-subsidized housing. Women head 32.8% of households, and 3,737 are headed by children under 18 (CoE IDP 2022/23 – 2026/2027).

The typical annual household income in Ekurhuleni is R29,400, similar to Gauteng and South Africa. More than half (56%) earn less than R40,000 annually. This trend has improved since 2011, but the COVID-19 pandemic might have impacted incomes due to job losses and salary cuts. The City is reviewing its indigent policy to adjust income brackets and optimize essential service provision (CoE IDP 2022/23 – 2026/2027).

Figure 9 shows average household income in CoE, with 17.8% having no income and 29.6% earning more than R76,401 annually (Stats, 2011).

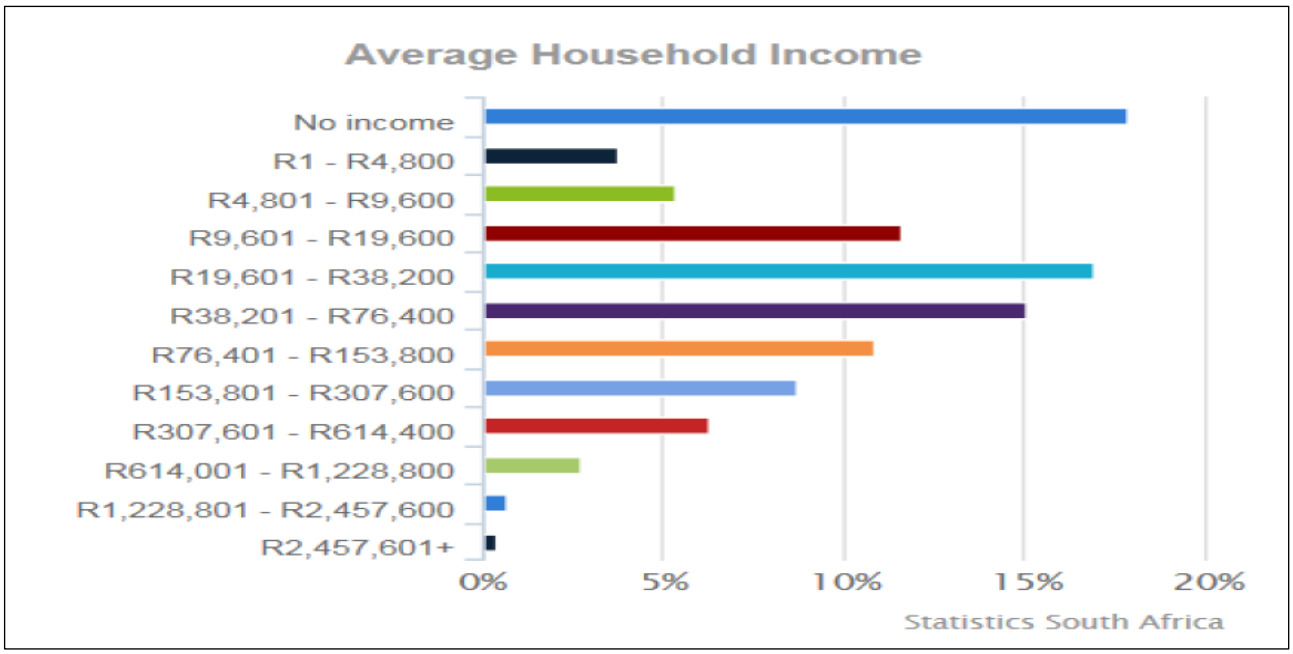


Figure 9: City of Ekurhuleni Average Household Income (Source StatsSA, 2011) adopted from CoE IDP 2022/23 – 2026/2027

4.2.5 Types of Waste Collected and Disposed in the City of Ekurhuleni

The City of Ekurhuleni collects and accepts the disposal of the following waste categories (CoE, Waste Management Presentation 2022). The tariffs of the different waste categories that CoE accepts are presented in Error! Reference source not found.**Table 1**, **Table 2** and **Table 3Error! Reference source not found.**.

Table 1: Tariffs for disposal of accepted waste types at the Weltevreden, Platkop, Rooikraal, Rietfontein and Simmer & Jack landfill sites for financial year 2022/23

Waste Type	Tariff R per ton 2021/22 All landfill sites	Tariff R per ton 2022/23 All landfill sites
General public: up to 1 000 kg limited to once a week (NB if same vehicle is carrying a load of more than 1000kg the complete load seizes or is no longer exempt and normal tariffs are applicable)	**Zero rated**	**Zero rated**
Disposal of general and non-hazardous industrial dry solid waste by the general public in excess of 1 000 kg	**R321.98**	**R344.52**
Disposal of general and non-hazardous industrial dry solid waste by contractors	**R321.98**	**R344.52**
Disposal of general and non-hazardous industrial dry solid waste by Lesedi Municipality and Ekurhuleni Metropolitan Municipality	**R321.98**	**R344.52**
Disposal of clean compostable garden refuse by general public in excess of 1000kg	**R166.31**	**R177.95**
Disposal of clean compostable garden refuse by contractors – all waste must be charged per kg	**R166.31**	**R177.95**
Disposal of general and non-hazardous industrial dry solid waste by the general public and contractors, from outside the boundaries of the metro.	**R875.67**	**R936.97**
Safe disposal of products: Crushed / Buried –per ton	**R488.08**	**R522.25**
Clean building Rubble (less than 300mm in diameter)	**Zero rated**	**Zero rated**
Clean building Rubble (more than 300mm in diameter)	**R308.58**	**R330.18**
Soil, usable as cover material	**Zero rated**	**Zero rated**
Mixed waste (soil, paper, rubble etc.)	**R321.98**	**R344.52**

Table 2: Tariffs for disposal of accepted waste types at the Rietfontein landfill site for financial year 2022/23.

Waste Type	Tariff R per ton 2021/22	Tariff R per ton 2022/23
Classified type 2 and/or 3 solids (less than 300mm in diameter)	**R553.85**	**R592.62**
Classified type 2 and/or 3 solids (less than 300mm in diameter) from outside boundaries of the metro	**R930.47**	**R995.60**
Classified type 2 and/or 3 solids (more than 300mm in diameter)	**R692.32**	**R740.78**
Classified type 2 and/or 3 solids (more than 300mm in diameter)) from outside boundaries of the metro	**R947.04**	**R1013.33**
Classified type 2 and/or 3 sludge (trench and cover)	**R1,788.59**	**R1913.79**
Classified type 2 and/or 3 sludge (trench and cover) from outside boundaries of the metro	**R2,446.65**	**R2617.92**
Classified type 2 and/or 3 liquids (trench and cover)	**R2,209.58**	**R2364.25**
Classified type 2 and/or 3 liquids (trench and cover) from outside boundaries of the metro	**R3,022.49**	**R3234.06**
Disposal of treated liquids / sludge of contaminated foods	**R503.99**	**R539.27**
Disposal of treated liquids / sludge of contaminated foods from outside boundaries of the metro	**R689.84**	**R738.13**
Paper pulp exceeding 40% moisture content	**R1,907.17**	**R2040.67**
Paper pulp exceeding 40% moisture content from outside boundaries of the metro	**R2,608.82**	**R2791.44**
Paper pulp below 40% moisture content	**R553.85**	**R592.62**
Paper pulp below 40% moisture content from outside boundaries of the metro	**R757.67**	**R810.71**
Disposal of treated liquids / sludge of contaminated food stuff where lime is used	**R503.99 plus additional R109.77per bag of lime used for the treatment of waste**	**R539.27 plus additional R117.45per bag of lime used for the treatment of waste**
Disposal of treated liquids / sludge of contaminated food stuff from outside boundaries of the metro where lime is used	**R689.84 plus additional R104.42 bag of time used for the treatment of waste**	**R738.13 plus additional R111.73 bag of time used for the treatment of waste**

Table 3: Tariffs for disposal of refuse only at the Platkop waste disposal site for financial year 2022/23.

Waste Type	Tariff R per ton 2021/22	Tariff R per ton 2022/23
Asbestos Waste	**R1,350.81**	**R1445.37**
Safe disposal of products: Crushed / Buried –per ton	**R488.08**	**R522.25**
	plus, additional R104.42 bag of lime used for the treatment of waste	**plus, additional R111.73 bag of lime used for the treatment of waste**
Safe disposal of products: Crushed / Buried –per ton from outside the boundaries of Ekurhuleni. where lime is used will be calculated according to the amount of bags used on the said product	**R689.84 plus, additional R104.42 bag of lime used for the treatment of waste**	**R738.13 plus, additional R111.73 bag of lime used for the treatment of waste**

4.2.6 Household & Industrial Waste Collection Services

Ekurhuleni is divided into Eastern, Southern, and Northern service delivery areas. The city's primary focus in waste management is the collection and disposal of waste at five designated landfill sites (CoE Waste Management Presentation 2022). Waste service delivery involves municipal and private contractor-operated trucks collecting household and industrial waste from residential and industrial areas (CoE, Waste Management Annual Report 2021/2022).

Ekurhuleni provides weekly waste collection services to 723,000 formal service points and 176,000 informal service points in known informal settlements (CoE, Waste Management Annual Report 2021/2022). However, informal settlement service points frequently change due to uncontrollable growth.

Recognized informal settlements receive weekly waste management services (CoE, Waste Management Annual Report 2021/2022). The city faces challenges like backlogs from work stoppages, community unrest, and resource shortages in growing informal settlements but clears waste when resources are available (CoE, Waste Management Annual Report 2021/2022).

Private entities collect medical and hazardous waste within the municipal area, typically pre-arranged and not disposed of at the city's landfill sites (CoE, Waste Management Annual Report 2021/2022).

4.2.7 Depots and Transfer Stations

The City of Ekurhuleni operates ten waste depots and seven transfer stations across its service areas (Table 4) (CoE, Waste Management Annual Report 2021/2022). These facilities, managed by about 1,500 staff members, utilize various trucks, equipment, and waste receptacles for collection activities. In many previously disadvantaged areas, waste collection is outsourced to contractors, reducing the council's workload by nearly 60% and promoting business empowerment through contracts (CoE, Waste Management Annual Report 2021/2022). Although the city currently lacks a waste recovery facility, efforts are underway to address this and improve waste management infrastructure. The geographic management of municipal solid waste is detailed in Table 4.

Table 4: City of Ekurhuleni Waste Depot and Transfer Stations (CoE, Waste Management Annual Report 2021/2022)

Service Delivery Area	Suburb	Name of Facility	Street Name and Suburb
Eastern	Benoni	Benoni Solid Waste Depot	Golden Drive, Morehill, Benoni
	Brakpan	Brakpan Solid Waste Sub-Depot	C/o Lemmer and Denner Roads, Vulcania, Brakpan
	Springs	Springs Solid Waste Depot	Stadium Avenue, Geduld Ext 4, Springs
	Nigel	Nigel Transfer Station	Fred Wagener Street, Prosperitas, Nigel
Southern	Alberton	Alberton Waste Management Depot	Swartkoppies Road, Alberton
	Alberton	Heidelberg Road Transfer Station	Heidelberg Road, Alberton
	Boksburg	Boksburg Waste Management Depot	Reservoir Road, Boksburg East
	Germiston	Germiston Waste Management Depot	Cnr Ostend Road and Jackpienaar
Northern	Bedfordview	Bedfordview Waste Management Depot	Cnr Van Vuuren & Skeen Boulevard , Bedfordview
	Edenvale	Sebenza Transfer Station	Cnr Lahla & Bahla Road Sebenza, Edenvale
	Kempton Park	Kempton Park Waste Management Depot	Cnr H Lewis and Kelvin Street Spartan, Kempton Park
	Kempton Park	Highveld Waste Transfer Station	Corner Albatros and Highveld Streets, Kempton Park
	Kempton Park	Norkem Park Waste Transfer Station	Corner James Wright and Mooi Rivier Streets, Norkem Park
	Kempton Park	Isando Waste Transfer Station	Corner Furnace and Diesel Streets, Isando
	Kempton Park	Olifantsfontein Transfer Station	RTJ Namane Drive, Tembisa

4.2.8 Mini Disposal and Garden Sites

The City of Ekurhuleni has established twenty-six mini disposal sites and six garden waste disposal sites to support its collection operations (CoE Waste Management Annual Report 2021/2022). These sites are strategically placed in residential, industrial, and informal settlements throughout the eastern, southern, and northern service areas of the city. Mini-disposal sites handle waste not collected through regular bin services, while garden waste sites manage green waste like grass clippings and leaves. These facilities are crucial for effective waste management, providing residents with a convenient and safe disposal method, reducing illegal dumping, and preventing environmental pollution.

Some waste disposal sites, established before current legislation, lack proper licensing and are thus unauthorised for use. The city is reviewing these sites to ensure legal compliance. Although the specific number and locations of these sites were not detailed in the report, the city is addressing the issue.

The development of a master plan for a public offloading facility marks a significant milestone, laying out a roadmap for small, medium, and large waste disposal sites with specific responsibilities for waste minimisation. Recent developments in the plan have focused on underserved areas, ensuring the community's waste management needs are efficiently met (CoE, Waste Management Annual Report 2021/2022)..

Table 5: City of Ekurhuleni Mini Disposal and Garden Sites (CoE, Waste Management Annual Report 2021/2022)

Service Delivery Area	Suburb	Name of Facility	Street Name and Suburb
Eastern	Benoni	Northmead Mini Garden Disposal Site	Hospital Road, Northmead, Benoni
	Benoni	Cloverdene Mini Garden Disposal Site	Fourth Road, Van Ryn Small Holdings, Cloverdene, Benoni
	Benoni	Actonville Mini Garden Disposal Site	Daya Street, Actonville, Benoni
	Benoni	Actonville Recycling Facility	Mayet Street, Actonville
	Benoni	Watville Recycling Facility	Glasgow Road, Wattville
	Brakpan	Geluksdal Mini Garden Disposal Site	Rheumanell Road, Geluksdal, Brakpan
	Brakpan	Minnebron Mini Garden Disposal Site	West Street, Minnebron, Brakpan
	Brakpan	Brenthurst Mini Garden Disposal Site	Muriel Brand Street, Brenthurst, Brakpan
	Springs	Modder East Mini Disposal Site	Cloverfield Street, Modder East, Springs
	Springs	Geduld Mini Disposal Site	Cemetry Road, Geduld Ext 4, Springs
	Springs	Welgedacht Mini Disposal Site	Cnr of Main and Railway Street, Welgedacht, Springs
	Springs	Daggafontein Mini Disposal Site	Kestrel, Daggafontein, Springs
	Springs	Dersley Mini Disposal Site	Alumina Street, Dersley, Springs
	Nigel	Nigel Ablution Facilities	Court Street, Nigel
Southern	Boksburg	Atlasville Mini Disposal Site	Atlas Road, Impala Park
	Boksburg	Dayen Glen Mini Disposal Site	Dayen Street, Dayen Glen
	Boksburg	Freeway Park Mini Disposal Site	Wildesering Street, Freeway Park
	Boksburg	Lilianton Mini Disposal Site	Brenda Street, Lilianton
	Boksburg	Parkrand Mini Disposal Site	Leipoldt Crescent, Parkrand
	Boksburg	Reiger Park Mini Disposal Site 1	Lily Street, Reiger Park
	Boksburg	Reiger Park Mini Disposal Site 2	John Collins Street, Reiger Park
	Boksburg	Van Dyk Park Mini Disposal Site	Bergbos Street, Van Dyk Park
	Boksburg	Villa Liza Mini Disposal Site	Lama Street, Villa Lisa
	Boksburg	Vosloorus Mini Disposal Site 1	Ext 16, Vosloorus
	Boksburg	Vosloorus Mini Disposal Site 2	Mokgako Street, Ext 1 Vosloorus
	Boksburg	Vosloorus Mini Disposal Site 3	Manyedi Street, Zulu Section, Vosloorus

Service Delivery Area	Suburb	Name of Facility	Street Name and Suburb
	Boksburg	Vosloorus Mini Disposal Site 4	Sithohimela Street ,Ext 9, Vosloorus
	Boksburg	Vosloorus Mini Disposal Site 5	Roets Drive, Ext 14, Vosloorus
	Germiston	Elspark Mini Disposal Site	Heidelburg Road, Opposite Plantoria
	Germiston	Leondale Mini Disposal Site	Heidelburg Road off R554 Brakpan Road
	Germiston	Marlands Mini Disposal Site	Main Reef Road, Barbara Road
	Germiston	Palmridge Mini Disposal Site	Cnr Satarius & Whiteker Street, off Blackthorn Road
Northern	Edenvale	Sebenza Mini Disposal Site	Cnr Lahla & Bahla Road Sebenza, Edenvale
Northern	Kempton Park	Clayville Mini Disposal Site	Corner Reginald and Van Streets, Clayville

4.2.9 Landfill Sites

The City of Ekurhuleni owns and operates five municipal waste disposal landfill facilities licensed by provincial environmental authorities: Rietfontein, Simmer & Jack, Weltevreden, Rooikraal, and Platkop. These are situated in Boksburg (Rooikraal), 30 km from Germiston (Platkop), Springs (Rietfontein), Germiston (Simmer & Jack) and Brakpan (Weltevreden) (CoE, Waste Management Annual Report 2021/2022), refer to Figure 10 and Table 6.

The CoE contracts private waste management companies to operate these landfills, while retaining the role of Permit Holder. Additionally, the CoE uses the privately-owned Chloorkop Landfill Facility (Tembisa) and FG landfill (for hazardous waste) in Olifantsfontein for waste disposal in the northern municipality. The CoE does not own any landfill in the north; waste from this area is disposed of at the FG landfill.

This study exclusively examined landfill sites owned by the City of Ekurhuleni, excluding privately-owned facilities like the Enviroserve Holfontein Landfill Site, which accepts hazardous waste.

All five City of Ekurhuleni landfills have operational weighbridges in compliance with the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), as outlined in GNR 625. This act requires entities engaging in specified waste-related activities to register on National, Provincial, and/or Municipal Waste Information Systems, as applicable.

Table 6: Waste Management Facilities within the CoE (including municipal- and privately owned facilities) (CoE, Waste Management Presentation 2022)

Service Delivery Area	Landfill Site	Classification	Types of Waste	Operational Since	Remaining site years as at June 2020
Eastern	Rietfontein	G:L:B+	General, delisted waste & liquids	1997	4.88
	Platkop	G:L:B-	General and asbestos	1988	24.03
	Weltevreden	G:L:B-	General	1994	2.73
	Holfontein (private)	H:H	Hazardous	Unknown	Unknown
Southern	Rooikraal	G:L:B-	General	1988	18.38
	Simmer & Jack	G:L:B-	General	1983	0.60
Northern	FG Interwaste (private)	G:L:B+	Hazardous	Unknown	Unknown
	Chloorkop (private)	G:L:B+	General	Unknown	Unknown

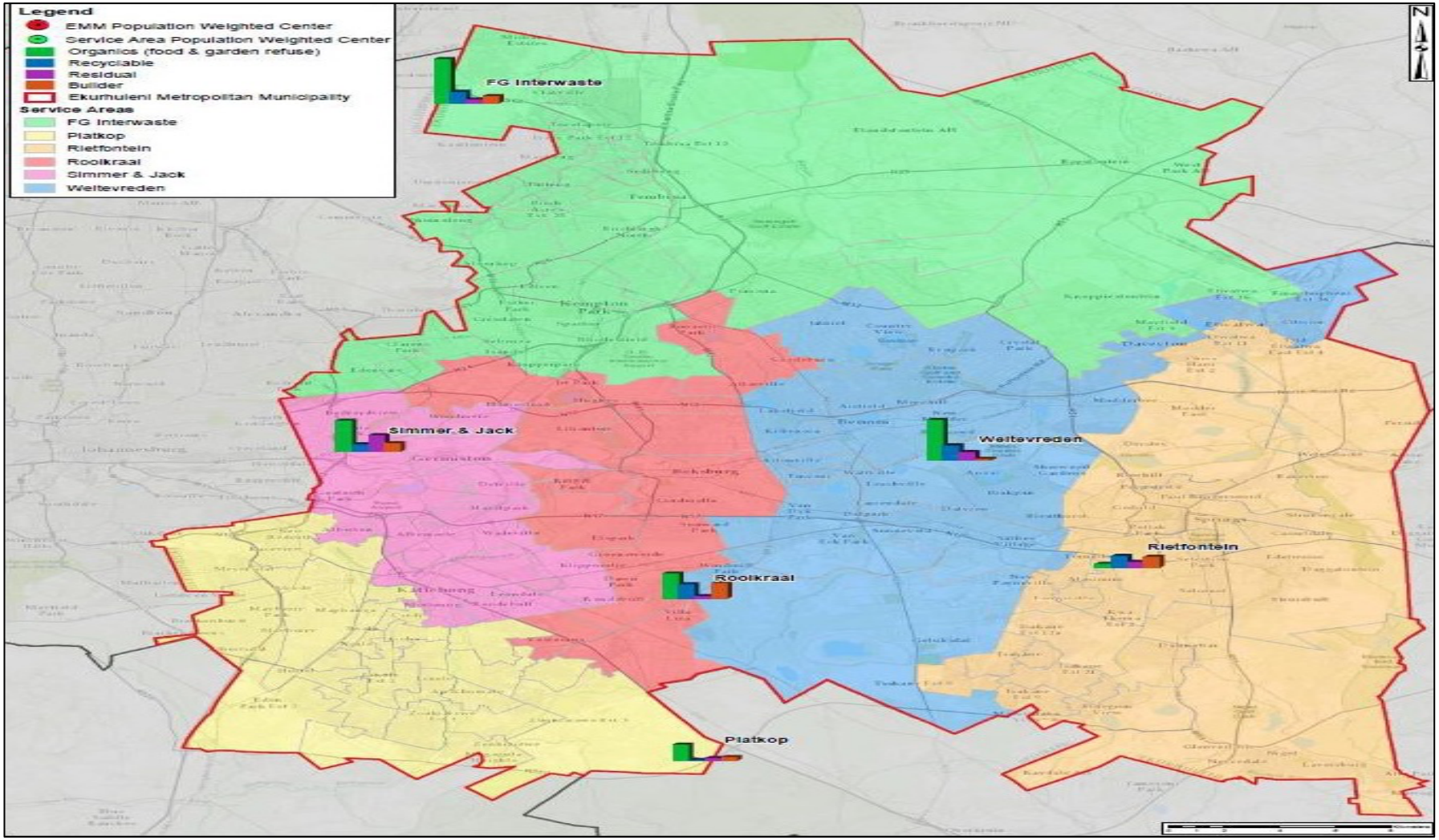


Figure 10: City of Ekurhuleni Landfill Site locations and their Service Areas (adopted from CoE, Waste Management Annual Report 2021/2022)

To comply with the Act, the City of Ekurhuleni has kept detailed waste disposal records since 2009 (CoE, Waste Management Annual Report 2021/2022). The landfill site's weighbridge system is managed by a third-party service provider contracted by the City (CoE, Waste Management Annual Report 2021/2022). These records offer precise data on waste amounts at each landfill site and recyclables removed, aiding effective waste management monitoring.

The City's landfill sites operate under the National Environmental Management: Waste Act 59 of 2008 and the Environment Conservation Act of 73 of 1989, issued by the Gauteng Department of Agriculture and Rural Development and the Department of Forestry, Fisheries, and Environment. Table 6 shows that four landfill sites (Rooikraal, Weltevreden, and Simmer & Jack) are classified as GLB-, accepting domestic, non-hazardous business waste, non-infected carcasses, and garden waste. The Rietfontein site, classified as GLB+, accepts these waste types and type A and B waste. The Platkop site, although classified as GLB, accepts asbestos waste and is treated as receiving hazardous waste until its permit is amended from the Environment Conservation Act of 1989 to the National Environmental Management: Waste Act of 2008.

Several landfill sites in the City are closed and no longer accept waste, maintained according to closure requirements, as reported in the CoE Waste Management Annual Report 2021/2022.

4.2.10 City of Ekurhuleni Recycling Facilities and Buy Back Centres Facilities

As reported in the CoE, Waste Management Annual Report of 2021/2022. The City of Ekurhuleni has two (2) active and operational recycling facilities in its eastern service area. These are Actonville and Watville, both of which are located in the Benoni area. The recycling activities taking place on these premises are as per specific initiatives with cooperatives in the area.

The Sustainable Seas Trust (SST) database which is a voluntarily compiled database, was used to locate all collectors, recyclers, and buy-back centres in the City of Ekurhuleni. The database captures the name of the organisation, the category of whether they are collectors or recyclers, the recyclable materials they are dealing with, and the general description of their collection points, (**Table 7**, **Table 8**, **Table 9** and **Table 10**) .

Table 7: Sustainable Seas Trust Database 2023 of City of Ekurhuleni Private Collectors of Recyclables (SST African Marine Network map - recycling and waste locations, viewed on 22 November 2023)

Item No:	Company	Category	Type of Recyclables	Drop off recyclables at site allowed	Company collects from individuals	Company pays for recyclables (ie Buyback Centre)
1	Mpact Recycling	Collector	Paper Cardboard Glass Plastic (Types 1 2 4 5) Carton (Tetra Pak)	Yes	Business only	Yes
2	Liatros Recycling	Collector	E-waste Catalytic converters	Yes	Yes	Yes
3	Remade Recycling - GERMISTON	Collector	Paper Cardboard Glass Plastic (Types 1 2 4 5) Carton (Tetra Pak) Nonferrous metal (aluminium or tin) E-waste	Yes	No	Yes
4	Oil Drop	Collector	Cooking oil	No	Yes	No
5	Sinethemba Ewaste Tradings	Collector	Ferrous Metal - Iron or steel E-waste Empty ink Laser printer cartidges	Yes	Yes	Yes

Table 8: Sustainable Seas Trust Database of City of Ekurhuleni Private Collectors and Recyclers (SST African Marine Network map - recycling and waste locations, viewed on 22 November 2023)

Item No:	Company	Category	Type of Recyclables	Drop off recyclables at site allowed	Company collects from individuals	Company pays for recyclables (ie Buyback centre)
1	JMB Plastics	Collector & Recycler	Plastic (Types 2 4) LDPE film grades HDPE film grades HDPE injection grades	Yes	Yes	Yes
2	Planet Care	Collector & Recycler	Paper Cardboard Glass Plastic (Types 1234567) Carton (Tetra Pak)	Yes	Yes	Yes
3	Dawhi Rubber Recycling	Collector & Recycler	Tyres	Unknown	Yes	No
4	Wykco Recycling	Collector & Recycler	Paper Cardboard Plastic	Yes	Yes	Unknown

5	EnviroLite Concrete Pty Ltd	Collector & Recycler	Plastic (Types; 6)	Yes	No	No	
6	Ferrous Metal Processors (FMP)	Collector & Recycler	Paper Glass Plastic (Type: null) Nonferrous metal - aluminium Nonferrous metal - copper, Ferrous metal - Iron or steel	Yes	Yes	Yes	
7	Shirley's Recycling	Collector & Recycler	Plastic (Types: 2 5)	Unknown	Unknown	Unknown	
8	REBOX RECYCLING	Collector & Recycler	Paper Cardboard Plastic (Types: 1 2 4 5)	Yes	Yes	Yes	
9	Tufflex Plastic Products (Pty) Ltd	Collector & Recycler	Plastic (Types: 2 4 5)	No	Yes	No	
10	RecycleX	Collector & Recycler	E-Waste	Yes	Yes	No	
11	Desco Electronic Recycler CC	Collector & Recycler	E-Waste	Yes	Yes	No	

12	EarthTREAD	Collector & Recycler	Tyres	Unknown	Yes	No
13	Esiltuli Transport Logistics and	Collector & Recycler	Plastic (Types:4)	Yes	Yes	Yes
14	Reclaim Plastic Recoveries	Collector & Recycler	Paper Cardboard Plastic (Types:1 2 4 5) Carton (Tetra Pak)	Yes	Yes	Yes

Table 9: Sustainable Seas Trust Database of City of Ekurhuleni Private Recyclers (SST African Marine Network map - recycling and waste locations, viewed on 22 November 2023)

Item No:	Company	Category	Types of Recyclables	Drop off recyclables at site allowed	Company collects from individuals	Company pays for recyclables (ie Buyback centre)
1	Forest	Recycler	Plastic (Types 2 4 5)	Unknown	Unknown	Unknown
2	BPCR	Recycler	Plastic (Types 4)	Unknown	Unknown	Unknown
3	Custom	Recycler	Plastic (Types:2 5)	Unknown	Unknown	Unknown
4	Get-go	Recycler	Plastic (Types:5)	Unknown	Unknown	Unknown
5	B4 Plastics	Recycler	Plastic (Types:2 5)	Unknown	Unknown	Unknown
6	Transpaco	Recycler	Plastic (Types:2 4)	Unknown	Unknown	Unknown
7	EMET	Recycler	Plastic (Types:2 4)	Unknown	Unknown	Unknown
8	HB Plastics	Recycler	Plastic (Types 2 4 5)	Unknown	Unknown	Unknown
9	Polyethylene	Recycler	Plastic (Types 2 4 5)	Unknown	Unknown	Unknown
10	Robus	Recycler	Plastic (Types:2 4)	Unknown	Unknown	Unknown
11	JCL Plastic Enterprises (Pty) Ltd	Recycler	Cardboard Plastic (Types: 1 2 3 Nonferrous metal -	Unknown	Unknown	Unknown
12	Plasticomp	Recycler	Plastic (Types:4)	Unknown	Unknown	Unknown
13	Trident Fuels (Pty) Ltd	Recycler	Tyres Rubber	Unknown	Yes	No
14	Trirom	Recycler	Plastic (Types:5)	Unknown	Unknown	Unknown
15	Afri-pipe	Recycler	Plastic (Types:2 4)	Unknown	Unknown	Unknown
16	Mpact	Recycler	Paper	No	No	No

17	Multi Plastic	Recycler	Plastic (Types:2 5)	Unknown	Unknown	Unknown
18	Avo	Recycler	Plastic (Types:2 4)	Yes	Yes	Yes
19	BB Plastic	Recycler	Plastic (Types:2 5)	Unknown	Unknown	Unknown
20	Cronimet RSA (Pty) Ltd	Recycler	Nonferrous metal -	Unknown	Yes	No
			Nonferrous metal -			
			Ferrous metal - iron			
21	Kubili	Recycler	Plastic (Types:2)	No	No	Yes
22	Extruwood	Recycler	Plastic (Types:2 4 5)	No	No	Yes
23	Recyclit (Pty)	Recycler	Plastic (Types:2 4 5)	Unknown	Unknown	Unknown
24	Extrupet	Recycler	Plastic (Types:1 2)	No	No	Yes
25	Italian	Recycler	Plastic (Types:2 4)	Unknown	Unknown	Unknown
26	Unique	Recycler	Plastic (Types:2 4 5)	Unknown	Unknown	Unknown
27	Pro Plastic	Recycler	Plastic (Types:4)	Unknown	Unknown	Unknown
28	Topex	Recycler	Plastic (Types:4)	Unknown	Unknown	Unknown
29	East Rand	Recycler	Plastic (Types:	Unknown	Unknown	Unknown
30	I and You	Recycler	Plastic (Types:4)	Unknown	Unknown	Unknown

Table 10: Sustainable Seas Trust Database of City of Ekurhuleni Buyback Centres (SST African Marine Network map - recycling and waste locations, viewed on 22 November 2023)

Item No:	Company	Category	Recyclables	Drop off recyclables at site allowed	Company collects from individuals	Company pays for recyclables (ie Buyback centre)
1	Remade Recycling Brakpan	Buyback	Paper Cardboard Glass Plastic (Types 1 2 4 5) Carton (Tetra Pak) E-waste Non-ferrous metal aluminium or tin	Yes	No	Yes
2	Regreen	Buyback	Plastic (Types:6 7)	Yes	No	Yes
3	Africa	Buyback	E-waste	Yes	Yes	Yes
4	Droplets for Life Waste Management and Recycling	Buyback	Paper Cardboard Plastic (Types 1 2 4 5) Carton (Tetra Pak) Non ferrous metal aluminium or tin Nonferrous metal - copper, lead, zinc or nickel Ferrous metal - iron or steel E-waste	Yes	Yes	Yes
5		Buyback	Paper Plastic (Types:2 3 4 5 6)	Yes	Yes	Yes

	Valiant recycling		Ferro–s metal - iron or steel E-Waste			
6	Lakhwisha holdings	Buyback	Paper Cardboard Glass Plastic (Types:1 2 4 5) Carton (Tetra Pak) Nonferrous metal - aluminum or tin	Yes	Yes	Yes
7	Remade Recycling - Elandsfontein	Buyback	Paper Cardboard Glass Plastic (Types 1 2 4 5) Carton (Tetra Pak) Non-ferrous metal aluminium or tin E-waste	Yes	No	Yes
8	Remade Recycling - Boksburg	Buyback	Paper Cardboard Glass Plastic (Types 1 2 4 5) Carton (Tetra Pak) Non-ferrous metal aluminium or tin E-waste	Yes	No	Yes

CHAPTER 5. RESEARCH METHODOLOGY

5.1 Introduction

This chapter covers the research objectives, positionality, design, data analysis, and methodological reflections of this study. The chapter begins by restating the research aims and objectives and outlines the specific research questions addressed by the study. It then discusses the researcher's positionality and how it may have influenced the research process, followed by an overview of the data collection methods.

The chapter concludes with a discussion of the data analysis techniques employed, and methodological reflections on the research process. By providing a detailed account of the research methodology, this chapter enhances the credibility and validity of the study, and serves as a critical component of any academic or business research project. Additionally, investigating the merits and demerits of the implemented methodology can help understand the strengths and limitations of the research.

This study focuses on assessing the contributions of the informal waste sector in Ekurhuleni. The goal is to promote the recovery and reuse of waste in ways that do not involve landfills. Currently, the solid waste value chain of the City of Ekurhuleni prioritises only formal waste collection from households and industrial areas and waste disposal in landfills. This approach ignores the potential benefits of the informal sector's contribution to recycling, material recovery, and reuse. Implementing these contributions may be economically advantageous.

5.2 Research Approach

The objective of this study was to gain a comprehensive understanding of the personal perspectives and experiences of individuals or groups (waste pickers) who are engaged in informal waste recycling at City of Ekurhuleni landfill sites. The researcher aimed to use empirical collected data (quantitative) of disposed waste at operational landfill sites versus what is recovered by the waste pickers. The researcher further aimed to gather valuable insights and experiences on integration of waste pickers (qualitative) to better comprehend their contribution to saving landfill airspace. Consequently, this approach places significant importance on interpretation and observation as fundamental tools to better understand the informal sector, Dlamini (2017).

An analysis of informal waste recycling data was conducted to explore why waste pickers in the City of Ekurhuleni were not integrated into the municipal waste management system, and how they contributed to municipal solid waste recycling towards saving landfill space. The researcher identified this as a subjective issue that required additional engagement with waste management officials and waste pickers.

(Stake, 1995; Hennink et al., 2011) contend that the foremost goal of qualitative researchers is to comprehend the intricate experiences of individuals, rather than solely attempting to rationalise and manage them. Both authors stressed the importance of qualitative researchers approaching their work with profound sensitivity to the nuanced experiences of those they are studying.

Rather than focusing solely on explanations and control, qualitative researchers should prioritise gaining a thorough understanding of the complex and intertwined factors that shape the lives of their research subjects. By adopting this approach, researchers can obtain a more comprehensive view of the lived experiences of the individuals they are studying, leading to a greater understanding of the social and cultural contexts in which these experiences are situated. Both qualitative and quantitative approaches were used in this study.

5.3 Research Design

The research design is a roadmap that guides the study Manti (2018). Silva (2017) stated that research design indicates the approaches to be adopted in data gathering and analysis. The three main research designs are exploratory, descriptive, and explanatory. The exploratory research approach attempts to explore the phenomenon under study in an attempt to answer the “what” and “how” questions Pollfish (2021). McCombes (2019) postulated that the exploratory research approach uses quality data that are critical in establishing key research issues. This study adopts an exploratory design.

5.4 Research Study Area

This study was conducted in the City of Ekurhuleni (CoE) in Gauteng Province, South Africa. The CoE is a metropolitan municipality covering 1,975 square kilometers, representing 15.6% of Gauteng's land mass. The research focused on five operational landfill sites: Rietfontein, Simmer & Jack, Weltevreden, Rooikraal, and Platkop, located in Boksburg (Rooikraal), 30 km from Germiston (Platkop), Springs (Rietfontein), Germiston (Simmer & Jack), and Brakpan (Weltevreden) (**Figure *10***).

A multiple case study approach and cross-case analysis were used to explore differences and similarities within and between cases, enabling new knowledge discovery (Schenck et al., 2019). Case study research focuses on understanding the intricacies of a single setting Van Wynsberghe (2008) and employs various data-gathering techniques such as interviews, questionnaires, and observations Schenck et al. (2019).

Chapter 5 provides a comprehensive description of the geographical setting and detailed summaries of each study site.

5.5 Target and Study Population

The study population included the following participants.

- Informal waste pickers located in the City of Ekurhuleni operational landfill sites that are involved in waste sorting, recycling, and recovery.

- Officials in the City of Ekurhuleni who are responsible for implementing policies related to waste reduction strategies, waste collection, recycling, disposal activities, and landfill management.

- The City of Ekurhuleni generally engages external organisations to assist with landfill site operations. These private entities, acting as service providers, offer a variety of specialised support functions. Their roles include landfill management, maintenance of weighbridge systems and infrastructure, financial consultation on landfill revenue, and the provision of external auditing services.

- Various entities, including private sector industries, Producer Responsibility Organisations (PETCO, Plastics SA, and RecycledZA), and recycling firms, that have established direct initiatives and partnerships with waste pickers operating at the City of Ekurhuleni's landfill sites.

- Buy-back centres (Remade/Mpact), located in the City of Ekurhuleni, that are involved in the collection of waste, recycling and recovery, re-use, and operating buy-back centres. And have a direct interaction or link to the waste pickers on the City of Ekurhuleni landfill sites.

5.6 Research Process

The following summarises the four phases of the research process.

5.6.1 Phase 1 – Data Collection and Organizing

Phase 1 of the research process entailed establishing effective communication channels with pertinent officials who oversaw waste management activities within the City of Ekurhuleni landfill sites. In addition, it was necessary to acquire permission to access relevant data sources, which was a crucial aspect of the study.

Through multiple meetings with the identified stakeholders, the following data were obtained.

- Data on the quantities of waste disposed at the City of Ekurhuleni operational landfill sites from 2015 to 2021.
- Data on the quantities of waste disposed at the City of Ekurhuleni operational landfill sites that permit waste pickers from 2015 to 2021.
- Data on all registered informal waste pickers working in the City of Ekurhuleni operational landfill sites.
- Data on the quantities of total waste recyclables recovered by waste pickers from the City of Ekurhuleni operational landfill sites.
- Data on the total registered buy-buy centres and recycling entities operating in the City of Ekurhuleni, which are directly linked to material recovery at the City of Ekurhuleni landfill sites.

5.6.2 Phase 2 – Data Analysis of Waste Streams Disposed and Recovered at City of Ekurhuleni Landfill Sites

Phase 2 of the research was to analyse the data collected for the period 2015–2021 in a statistical representation (pie charts and bar graphs) to formulate an overview of the waste material recovery flow of the City of Ekurhuleni landfill sites by comparing total waste tonnages disposed at landfill sites against what was recycled or recovered from the landfill sites by waste pickers.

5.6.3 Phase 3 – Municipal Existing Policies, Interventions and Initiatives relating to Informal Waste Sector.

This research phase provided a framework to understand which part of the waste material recovery flow identified in phase 2 could be attributed to specific interventions resulting from the City of Ekurhuleni's existing waste minimisation policy. This was done in three steps: regulatory enforcement or initiatives, site-specific related initiatives or cooperatives, temporal influences (types of waste and quantities being recovered or recycled), and geographical influences (locations of potential buyers such as middlemen and buy-back centres).

5.6.4 Phase 4 – Identified Key Variables in the Study

The final step in the research process was to identify the key variables that provide insight into the impact of waste recovery quality and quantity based on waste type, generation volume, location of waste collected, etc..

The following variables were identified and calculated as far as possible.

- Total Waste – The total amount of waste disposed at City of Ekurhuleni operational landfill sites between a defined period, i.e. 2015 to 2021.
- Waste Recovered (%): The amount recovered as a percentage of the total waste disposed between 2015 and 2021.
- Waste Recovered (%): The waste taken from the operational landfill sites to buy-back centres or other sellers from the City of Ekurhuleni landfill sites by waste pickers.

5.7 Data Collection, Data Analysis and Interpretation

5.7.1 Research Questionnaires

The commencement of data collection entailed developing a survey and creating interview questions in line with the research objectives. The study utilised three separate questionnaires, each specifically designed for different participant groups, as detailed below:

- Informal waste pickers working on City of Ekurhuleni landfill sites
- City of Ekurhuleni officials
- Service providers involved in landfill operations and support services to City of Ekurhuleni

- Various entities, including private sector industries, Producer Responsibility Organisations (PETCO, Plastics SA, and RecycledZA), buy back centres and recycling firms, that have established direct initiatives and partnerships with waste pickers operating at the City of Ekurhuleni's landfill sites.

The survey instruments comprised distinct sections, each addressing specific aspects related to the study's aims. These sections are outlined as follows:

5.7.1.1 Waste Pickers Questionnaire

The interview questions for waste pickers were designed to gather and examine information about their personal details, work environment, and obstacles they face. The survey sought to understand the types of waste they collect, their measurement methods, transportation practices, buyers, and selling prices.

The questionnaire targeted waste pickers aged 18 and above. It was structured to allow the researcher to mark or record responses, as waste pickers were not expected to provide written answers.

For the waste picker group, all research sheets were translated into a local language, and Isizulu was chosen as the preferred language. Where the waste pickers were found to be illiterate, the researcher used a recruited field interpreter to translate the waste pickers into their home language even if they were not isiZulu, and their responses to the questionnaire were recorded on questionnaire forms.

The consent form and participation fact sheet were also translated into Zulu and Sotho. In most cases, waste pickers could at least write their names and sign consent forms. (**APPENDIX A,B, C,** and **D**). An English version of the questionnaire is provided below.

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Waste Pickers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - 35	

	>45 years	
1.2	**Sex**	
	Male	
	Female	
1.3	**Employment Status**	
	Working for myself	
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	

	Streets (Commercial and Industrial Areas)		
	Landfill Site (name?)		
3.2	**Where do you sell the recyclables?**		
	Within City of Ekurhuleni		
	Outside City of Ekurhuleni		
	It Varies		
	I don't know		
	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		
	Paper (Other)		
	Plastic (PET)		
	Plastic (Other)		
	Food waste		
	Glass (Bottles)		
	Glass (Broken)		
	Metal (Steel)		
	Metal (Other)		
	Rubber		
	If Other, specify		
3.6	**Indicate whether buyers collect the waste products from you or whether you have to deliver it to them?**		
	They collect		
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		

	No	
	Don't know	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**	
	Yes	
	No	
	Don't know	
4.3	**Will you continue to work in this area?**	
	Yes	
	No	
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**	
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**	
	City of Ekurhuleni	
	Buy Back Centre	
	Producer Responsibility Organisation	
	Nothing	
	Other	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**	
	Yes	
	No	
	Other	
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**	
	Formal integration - (working with the CoE on waste coming in	
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	

5.7.1.2 City of Ekurhuleni Personnal and service providers in landfill operations and support services Questionnaire

The survey questions distributed to Ekurhuleni city staff and landfill service providers aimed to gain deeper insights into the waste management process, particularly regarding existing policies and initiatives concerning the informal waste sector. It also sought to identify potential obstacles, challenges, and opportunities for integrating waste pickers into the system. Additionally, the researcher intended to gather information on how data related to waste

picker activities at landfill sites is collected, as well as to estimate the quantity of waste recovered by these individuals.

The questionnaire, along with the consent form and participation information sheet, was prepared solely in English. This decision was based on the assumption that most participants in this category were proficient in English and possessed adequate literacy skills.

The research information sheet, consent form, and questionnaires for the City of Ekurhuleni officials, staff and service providers, producer-responsible organisations, and private sector entities were compiled in English. They were typically shared via email or in person at a designated research point. (**APPENDIX A,B, C,** and **D**). Below, you will find the comprehensive questionnaire for this specific participation category.

City of Ekurhuleni Employees and CoE Service Providers		
This questionnaire will take approximately 15 - 20 minutes to complete.		
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
1.2	**How long have you been in that position?**	
1.3	**Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	
	No	
	I don't know	
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni? And how?**	
2	**Informal Sector Contribution**	
2.1	**Is your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	
2.3	**Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?**	
2.4	**Are you aware of any success inititiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	
	No	
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activitities in the City of Ekurhuleni ?**	
	Yes	
	No	
	Not my area of responsibility	

2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni?**	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	
3	**Informal Sector Volumes/Tonnages**	
3.1	**Who is responsible for data collection and capturing for informal reclaimers material recyclables and recoverables?**	
	City of Ekurhulleni	
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Other	
	I don't know	
3.2	**Within your area of responsibiliity, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
3.3	**How is this data collected or captured from informal reclaimer material recycables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables; and if so where and how many?**	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	
	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	
	Not my area of responsibility	

5.7.1.3 Private sector entries, PROs, recycling companies and buy back centres

The questionnaire administered to private sector entities, such as recycling firms, Producer Responsibility Organisations, and buy-back centres, sought to obtain a more comprehensive understanding of their direct activities and interactions with the informal waste sector, specifically at landfill sites in Ekurhuleni. Furthermore, the survey aimed to identify the infrastructure facilities these entities have established and gather data on the varieties and quantities of waste collected by waste pickers that are ultimately processed at their facilities.

The questionnaire, along with the consent form and participation information sheet, was prepared solely in English. This decision was based on the assumption that most participants in this category were proficient in English and possessed adequate literacy skills. Below, you will find the comprehensive questionnaire for this specific participation category.

City of Ekurhuleni - Informal Waste Sector Questionnaire		
Producer Responsible Organisations, Recycling Companies and Buyback centres		
This questionnaire will take approximately 20 - 30 minutes to complete.		
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
1.2	**How long have you been in that position?**	
1.3	**Are there any existing company policies or future initiatives by your company to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	
	No	
	I don't know	
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni (Landfill sites, buy back ceentres or other formalised areas)? If so where and how?**	
2	**Informal Sector Contribution**	
2.1	**Is your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	
2.3	**Are there any existing structures or opportunities where the informal sector can be formally integrated into waste material recovery systems by your organistion in the City of Ekurhuleni?**	
2.4	**Are you aware of any success inititiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	
	No	

2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activitities in the City of Ekurhuleni that your organisation has direct control on ?**	
	Yes	
	No	
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni as faced by your organisation?**	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	
3	**Informal Sector Volumes/Tonnages**	
3.1	**Who is responsible for data collection and capturing for informal reclaimers material recyclables and recoverables in your organisation?**	
	Our Company	
	City of Ekurhulleni	
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Others	
	I don't know	
3.2	**Within your area of responsibiliity, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni by your organisation?**	
3.3	**How is this data collected or captured from informal reclaimer material recycables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables by your organisation; and if so where and how many?**	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	

	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	
	Not my area of responsibility	

5.7.2 Data Collection – Interviews and Questionnaire Process

5.7.2.1 Key Stakeholders Semi-Structured Interviews

The research data were collected from primary and secondary sources. Semi-structured interviews were also conducted.

A semi-structured interview is a research technique that allows the interviewer to ask questions and prompt them to guide a conversation with the interviewee. This method is useful when researchers want to gain insight into an individual's opinions, beliefs, experiences, or attitudes toward specific topics Hennink et al. (2011). According to De Vos et al. (2005), semi-structured interviews provide a flexible framework. Unlike structured interviews, which follow a predetermined set of closed-ended questions, semi-structured interviews allow the interviewer to ask follow-up questions and probes for more detailed responses. The interviewees were also free to express their ideas and experiences in their own words, which could provide valuable insights into their thought processes. Semi-structured interviews provide rich data that can be used to gain a deeper understanding of a particular phenomenon or issue (Hennink et al. 2011; Longhurst, 2010).

The three (3) target groups each completed a semi-structured questionnaire to meet the research objectives as outlined above. Structured questionnaires are highly effective in gathering and documenting information on specific topics of interest (Mudavanhu, 2020).

They are particularly helpful in obtaining clear and easily quantifiable responses that can be analysed using quantitative data Ebrahim et al., (2005). For this study, a structured questionnaire was employed to gather information on the socioeconomic backgrounds of waste pickers. The questionnaire was designed to include a range of predetermined responses to ensure consistency of the collected data. This study sought to examine the factors that influence the socio-economic status of waste pickers, with particular emphasis on their demographic characteristics. A questionnaire was administered to a sample of waste pickers, and the collected data were analysed using statistical techniques to identify patterns

and trends. The findings of this study provide valuable insights into the socioeconomic conditions of waste pickers, and highlight the need for policies and interventions aimed at improving their well-being. The questionnaire used in this study was adapted from the work of Schenck et al. (2012) and Viljoen (2014) on waste pickers to align with the research objectives and goals of this study.

5.7.2.1.1 City of Ekurhuleni Personnel and Service Providers

Interviews with the City of Ekurhuleni Department of Environmental Resource and Waste Management Services personnel and service providers were a critical point of entry for understanding existing policies and regulations of the informal waste sector within the city.

The researcher commenced her interviews with the City's Waste Services Department, particularly with project managers and heads of landfill sites. A total of three (3) personnel were interviewed: two (2) holding the position of the project manager over the five (5) landfill sites and the third holding the head of landfill site services. These were the key people responsible for the operations of all five operational landfill sites in the City of Ekurhuleni, and were knowledgeable about all existing policies and initiatives running the sites. **The researcher got a response rate of 100% with three (3) questionnaires completed.**

The second group of people from the city that the researcher interviewed was from the Department of Waste Minimization within the city. The personnel from this department were responsible for collecting data and implementing waste minimisation policies as regulated by the city, as well as keeping accurate records of waste pickers' activities, and not limited to an active database, recycling quantities from waste pickers outside the landfill sites. One person from this department was interviewed about the waste minimisation initiatives implemented in the city. They have held this position for the last five (5) years. **The researcher got a response rate of 50% with one questionnaire completed.**

The third category of personnel from the City of Ekurhuleni interviewed were those stationed at the respective landfill sites and involved in the daily management and operations of the landfill sites. These personnel are typically involved in weighbridge operations that capture all waste tonnage entering and exiting landfills. Over five (5) landfill sites in the city, the researcher interviewed twelve (12) employees actively working at landfill sites on the research topic. **The researcher got a response rate of 100% with twelve (12) questionnaires completed.**

Finally, the researcher engaged all service providers or stakeholders directly involved in the waste value chain within the city. These service providers were categorised into two categories: those that were involved in the daily management of the landfill sites, that is, waste operators that the city contracts to operate and maintain the landfill sites; service providers that provide physical infrastructure and support to the weighbridges; and ongoing maintenance and data capturing of the system as well as the financial service provider that manages the collection of revenue at the respective landfill sites. The researcher interviewed six (6) personnel from service providers working at the five (5) landfill sites of the city. **The researcher got a response rate of 100% with six (6) questionnaires completed.**

5.7.2.1.2 Producer Responsibility Organisations

Despite persistent efforts to interview multiple producer responsibility organisations for their research, the researcher could only successfully conduct an interview with Recycled PaperZA.

The researcher also reached out to PETCO and Plastics SA, but no interview or data were obtained from either organisation. PETCO provided the researcher with its website, which offered information on recycling centres and partners but needed to provide specific data regarding the amount of recycled material. Unfortunately, despite the researchers' best efforts, no data were obtained from the Plastics SA. As a result, this research could only obtain information from Recycled PaperZA, limiting the scope of the study to a certain extent. **The researcher got a response rate of 30% with one (1) questionnaire completed.**

5.7.2.1.3 Buy Back and Recycling Centres

The buyback and recycling centres in the City of Ekurhuleni play a crucial role in the waste value chain. All recyclables collected by waste pickers from landfill sites were either sold to these centres or directed towards them.

These centres serve as the primary points of purchase or reception for all recyclable materials collected by waste pickers from landfills. To gain a comprehensive understanding of the critical stakeholders in the city, extensive research and literature review were conducted. The waste pickers provided valuable insights into who purchased all their recyclables. During interviews with waste pickers, two companies, Mpact and Remade, were mentioned consistently. The researcher interviewed two personnel from the Mpact and Remade via telephone interview. The researcher found it necessary to conduct telephone interviews to obtain feedback from these participants. This approach was considered only after attempting

other methods, such as distributing questionnaires and conducting in-person interviews, which proved to be unsuccessful. This situation often arose when the designated contact for the organisation was initially contacted and needed help to provide the requested information, necessitating the need to get a more senior individual. In such cases, the researcher was given a phone number instead of an email address. **The researcher got a response rate of 50% with one (1) telephone interview questionnaire completed.**

5.7.2.2 Waste Pickers Interviews

Most waste pickers were found to work as individuals, fewer work together in a family clan, and others work as part of an organised group. The City of Ekurhuleni has established protocols for engaging with waste pickers at each landfill site. The researcher conducted individual interviews with waste pickers but observed that four of the five landfill sites had specific protocols to follow before engaging with the waste pickers. These communication protocols were established among waste pickers, the City of Ekurhuleni staff, and the contracted landfill operator. Each landfill site had a waste picker steering committee consisting of to 6-8 individuals appointed by the waste pickers themselves. This committee served as the representative of the waste pickers on that site, and all engagement with the researcher was first discussed with them.

With the assistance of an interpreter, the researcher successfully engaged both the steering committee and focus group in conducting meetings in Zulu. Prior consultation and engagement with the steering committee were crucial for several reasons.

First, it allowed waste pickers to better understand the research objectives and expected outcomes, which helped them feel less exploited and more secure about their livelihood.

Second, a pilot trial of the anticipated questions was conducted with waste pickers, which provided valuable feedback and allowed the researcher to gauge the potential impact of the study on their lives.

Third, the researcher understood how to comply with the site working protocols and collected the data. By adjusting and working within the communicated site schedule, the researcher was able to collect data in compliance with the specific hours and days on which waste pickers were allowed on-site.

Finally, the steering committee played a vital role in facilitating communication with the rest of the waste pickers and organising on-site focus groups for the researcher to gather the necessary information.

During the focus group, waste pickers could narrate their experiences, challenges, and feelings towards their work in particular volumes of recyclables and waste pickers' integration efforts in City Ekurhuleni. The researcher individually collected socioeconomic data from each participant in the focus group as per the questionnaire. All other responses related to the working conditions were collectively noted as the most popular response. Where an individual had a different reaction to a popular response, the researcher stated it separately.

The assistant interpreter/facilitator took meticulous notes after each focus group discussion. This was done as a precaution in case of any technical problems with the tape recorder or disturbances caused by traffic noise. The notes captured the key points and ideas discussed during the sessions, ensuring that the valuable insights were recovered.

This section provides an overview of the total number of waste collectors interviewed during the study. All interviews with these waste pickers were conducted at the landfill sites within the City of Ekurhuleni, as detailed below. **The researcher got a response rate of 100% with seventy-eight (78) questionnaires completed from both interview and group focus interviews.**

Landfill site and form of interviews conducted	**Demographic profile of waste pickers**	**Total no. interviewed**	**Total no. of waste pickers present on the landfill site**
Rietfontein (Individual Interviews)	Committee Members	5	220
	Male Waste Pickers	28	
	Female Waste Pickers	7	
Simmer & Jack (focus Groups consisting of a maximum of 8 people)	Male Waste Pickers	72	280
	Female Waste Pickers	0	
Rooikraal (focus Group – one large group)	Male Waste Pickers	24	180
	Female Waste Pickers	2	
	Committee Members	3	

Weltevreden (focus groups - consisting of a maximum of 8 people)	Male Waste Pickers	108	500
	Female Waste Pickers	80	
TOTAL		**329**	**1180**

5.7.2.3 Waste Disposal Data Collection

Below is a comprehensive breakdown of the data collected and analysed from City of Ekurhuleni landfill for the period 2015 – 2021.

City of Ekurhuleni Data

- The volume of waste generated by households, businesses, and institutions serviced by the City of Ekurhuleni through their collection.
- Quantification of total registered informal waste pickers and waste pickers operating in the City of Ekurhuleni.
- Geographic location of municipal solid waste collected in the City of Ekurhuleni.
- The proportion of recyclable versus non-recyclable materials collected in the City of Ekurhuleni.
- Waste disposal volume at all operational landfill sites in the City of Ekurhuleni.
- The recyclable waste material was recovered by informal waste pickers from the City of Ekurhuleni operational landfill sites.

Private Sector and PRO Data

- Quantifying the total registered buy-buy centres and recycling entities operating in Ekurhuleni.
- The volume of recyclable waste is processed and accepted by producer-responsible organisations such as PETCO and RecyleZA in the City of Ekurhuleni.

5.7.2.3.1 City of Ekurhuleni Data Collection Portal

The waste tonnages and quantities in the City of Ekurhuleni were primarily sourced from the online portal managed by Opto Africa. This system captures all registered users, waste types, and waste tonnages disposed at five operational landfill sites in the city. Each landfill has an incoming and outgoing weighbridge system that monitors the flow of waste in and out of the landfill sites.

Ekurhuleni is yet to have an official material-recovery facility. Upon waste collection from households and industries, the waste is directed to landfill sites via transfer stations or depots. No quantification or isolation of waste occurred at the transfer stations or depots. The OptoAfrica platform at landfill sites is the sole source of waste data captured in the entire City of Ekurhuleni, which includes waste collection tonnages and waste pickers' activities or recyclables as they exit landfill sites. Therefore, all waste collection from households and industrial areas was quantified through weighbridges at landfill sites and not elsewhere.

Although the City of Ekurhuleni officials communicated that they kept an active register of waste pickers conducting activities within the city, formal data were on record and available regarding tonnage of recyclables, only what was captured at the landfill sites. It should be noted that no data were collected from street pickers, as the amount of waste collected did not go through official channels to quantify them.

5.7.2.3.2 Private Sector and PRO Data

Data collection on the total registered buy-buy centres and recycling entities in the City of Ekurhuleni were obtained via official interviews and questionnaires targeted to the audience. Remade/Mpact is the most significant buy-back centre in the city. Broader and more detailed data were obtained from the Sustainable Seas Trust (SST) database, which was also accessed and used.

5.7.2.4 Site Status Quo and Researcher Field Observations

During the study, the researcher visited several landfill sites to obtain first-hand data. The researcher employed multiple primary data-collection techniques to collect data from the field. One such technique was to observe the phenomenon itself, which involved closely observing the landfill environment to determine the different activities that occurred. Another technique involved photographs, which involved capturing images of landfills and their surroundings to document the different aspects of waste 'ickers' activities and recycling sites.

These primary data collection methods were particularly useful for revealing the activities of waste pickers and the recycling sites they used. The researcher documented these observations in detailed field notes, which served as a valuable resource for analysing the data.

Overall, the combination of primary data collection techniques and field notes provided the researcher with a comprehensive understanding of the landfill environment and the activities of the various actors involved in waste management.

5.7.3 Data Analysis

Both qualitative and quantitative methods were used in this study.

Qualitative research involves two crucial stages, data collection and analysis, which should be conducted simultaneously (Creswell, 2014; Miles et. al., 1994; Dlamini, 2017). This categorisation method is commonly used in qualitative data analysis, in which people, events, and objects are sorted into different categories Miles et. al (1994). Researchers typically describe patterns and themes in their data to better understand participants' perspectives. To ensure the reliability of this study, the researchers used Tesch's method of qualitative data analysis, as described in Creswell's (2009) study. Moreover, this study provides a thorough and comprehensive description of its external validity. Researchers have employed various techniques to ensure the dependability of their findings, including the methods of (Creswell, 2014; Hennink et al.,2012; Miles et. al., 1994; Dlamini, 2017).

Creswell's 2014 study presented a thorough framework and guidance for data collection. To maintain reliability and internal validity, following Hannink et al. ’s (2012) guidelines, four distinct data collection techniques were utilised: key informant interviews, personal observation, focus groups, and semi-structured interviews. The information gathered was meticulously coded to ensure accuracy and the research methodology was thoroughly outlined to ensure consistency. Quotes were utilised to attribute statements to remain impartial throughout the research process.

All data from the various sites were compiled in an MS Excel spreadsheet. Descriptive statistical methods, including bar graphs, tabulations, and pie charts, were used to corroborate the qualitative data in each case study.

The questionnaires were thoroughly reviewed for precision and correctness before and after the recording. The results were presented both visually and numerically using tables and

graphs. In the quantitative part, the data were downloaded and captured in MS Excel, where the information was processed in bar graphs, pie charts, and percentiles. Data were further analysed using regression and statistical analyses, leading to effective and accurate conclusions.

At the end of the study, the findings and results were presented as percentages, graphs, and statistics. After depicting the data in graphs, the results were extracted as answers to the research question. The answers are considered as the study's outcome, which addresses how the informal waste recycling sector can be formally integrated into the solid waste management practices in the City of Ekurhuleni and contribute effectively towards waste recovery and reuse to enhance the waste value chain.

5.8 Research Methodology Observations, Reflections, Barriers and Limitations

The researcher took note of several observations, reflections, and limitations of the employed research methodology, which are discussed below.

5.8.1 Observations

At the commencement of the research, initial meetings with waste pickers occurred at each site with the respective steering committee in the site boardroom. However, all subsequent engagements with waste pickers, whether individual or focus group, were conducted at the landfill site (working face), as per their preference to remain in proximity to their collected materials.

It was observed that a minority group of waste pickers at certain landfill sites requested the exclusion of City of Ekurhuleni officials involved in daily operations from the interview process. This request stemmed from concerns regarding potential discrimination based on the information shared.

The researcher found that conducting individual interviews with waste pickers proved more advantageous, as it allowed for elaboration or clarification on specific points.

Furthermore, the researcher observed that a particular cohort of waste pickers demonstrated increased comfort when interviewed in pre-existing groups. This phenomenon was attributed to trust issues associated with sharing information and experiences with unfamiliar individuals. The presence of familiar peers in these settings enhanced the waste pickers'

comfort and security in disclosing their thoughts and experiences to the researchers. This observation underscores the importance of establishing trust and rapport among participants in research studies, particularly those who may be more vulnerable or have unique needs.

5.8.2 Barriers

The researcher encountered some challenges in conducting focus group discussions with waste pickers, particularly due to time constraints and the necessity for participants to intermittently depart to retrieve recyclables from passing trucks. This intermittent departure was essential to avoid missing opportunities for recovering recyclables.

In certain instances, the researcher was required to conduct telephone interviews for data collection purposes. Questionnaires were distributed via email to the stakeholders within the population group who were capable of completing them; however, despite repeated follow-ups, responses were not forthcoming. To obtain the necessary information, the researcher contacted these participants via telephone, albeit with limited time, to investigate specific waste recyclables.

The buy back centres are key players in the value chain on the recyclable materials. Throughout the research period, the key buyback centres that purchase recyclables from waste pickers declined to disclose quantities of collected recyclables from landfill sites by waste pickers, citing them as intellectual property. Instead, they provided only verbal monthly estimates of their collections, which presented challenges in obtaining accurate data on the quantity of recyclables processed by the buyback centres over a six (6) year duration in the city of Ekurhuleni.

5.8.3 Reflections

Observations from the waste picker focus groups revealed a disparity in communication styles amongst participants. Some individuals displayed greater assertiveness and self-assurance when sharing their views, whilst others appeared more reserved and withdrawn. This imbalance in expression risked skewing the representation of opinions, potentially compromising the richness and diversity of group dialogues and collective decision-making. To mitigate this issue, the researcher implemented a structured round-table approach, affording each participant an equal opportunity to voice their thoughts and reactions. This method ensured that all contributions were acknowledged and given due consideration.

5.8.4 Limitations

During the study, the researcher faced several constraints.

The research centred on the waste value chain in City of Ekurhuleni, taking into account all pertinent key players. However, it is worth noting that the study did not include some stakeholders such as government officials and regulatory bodies like GDARD. The researcher recognises the potential drawbacks of this decision and is committed to addressing them in future research.

The researcher encountered challenges in obtaining data from producer responsibility organisations within the municipality regarding their operations, initiatives, and the aggregate quantity of recovered recyclable materials. The organisations did not respond to the data request.

Attempts were made by the researcher to reach out to several recycling entities listed as clients in the City of Ekurhuleni database. Only the leading five customers, determined by the volume of recyclables diverted from landfills, were contacted. None of the respondents verified the amount of waste recyclables gathered from sources outside the landfill. Leaving a significant gap to their probable contribution.

Due to the researcher 's unfamiliarity with local languages, the assistance of an interpreter or facilitator was necessary. However, this introduced the possibility of information or messages being misinterpreted or lost during the translation process.

5.9 Ethical Considerations

Research ethics are the ethical guidelines that guide investigations (Manti, 2018). Ethical considerations are crucial in research because they indicate the benefits and risks that the research subjects face (Silva, 2017).

The following ethical considerations were considered:

The informants (all groups) were informed that their involvement in the study was voluntary and that they were free to withdraw from the research if they wished without facing any negative consequences. This was communicated via a consent form presented in both English and Zulu. The literate population groups signed the consent forms. For waste pickers,

language barriers existed; this was communicated to them in Zulu or Sotho by an officially recruited interpreter.

Security was enforced to ensure that no research participants had been psychologically or physically harmed. The respondents' identities were not disclosed to enhance confidentiality, privacy, and anonymity. All participants were assured before the commencement of the questionnaire.

All interviews were conducted as per the prior and agreed upon times that suited their schedules. There was no discrimination regarding who was selected to be interviewed as both male and female legal and illegal workers were interviewed.

The researcher made every effort to conduct the interviews professionally and ethically, aiming to display tolerance and avoid judgment of the participants. No questions that could have placed them in danger or posed a threat to them were asked.Finally, the research was approved before the commencement of the study by the University of Witwatersrand's ethical committee to carry out the research (protocol number H21/11/50 issued on 23 May 2022). A copy of the approval is included in **APPENDIX F**.

5.10 Chapter Conclusion

This chapter details the research objectives, positionality, design, data analysis, and methodological reflections of the study, which aimed to assess the contributions of the informal waste sector in the City of Ekurhuleni. This study targeted the City of Ekurhuleni officials, private sector industry and other entities, buy-back centres, informal waste pickers, and entities promoting waste recovery and reuse processes. It further details the methodology employed in this study and explains the rationale behind their selection. To conduct a thorough empirical case study, the researcher implemented an exploratory research design and utilised both qualitative and quantitative research methodologies. The data collection phase involved obtaining information on waste collection movements, landfill disposal quantities, registered informal waste pickers, recyclable waste materials, and recyclable waste processed by buy-back centres and recycling facilities. As with most research endeavours, this study was not without its limitations, which could have potentially compromised the validity of the findings if not adequately addressed, and these are explicitly outlined.

CHAPTER 6.FINDINGS OF THE INDIVIDUAL CASE STUDY LANDFILL SITES

This chapter documents and discusses the general overview of operations at all the City of Ekurhuleni landfill sites and individual findings at all the case study landfill sites where the research took place. All waste reclamation activities within the City of Ekurhuleni are confined to landfill sites only. Reclamation activities by waste pickers occurring at City of Ekurhuleni transfer stations or mini dumps were excluded in the study.

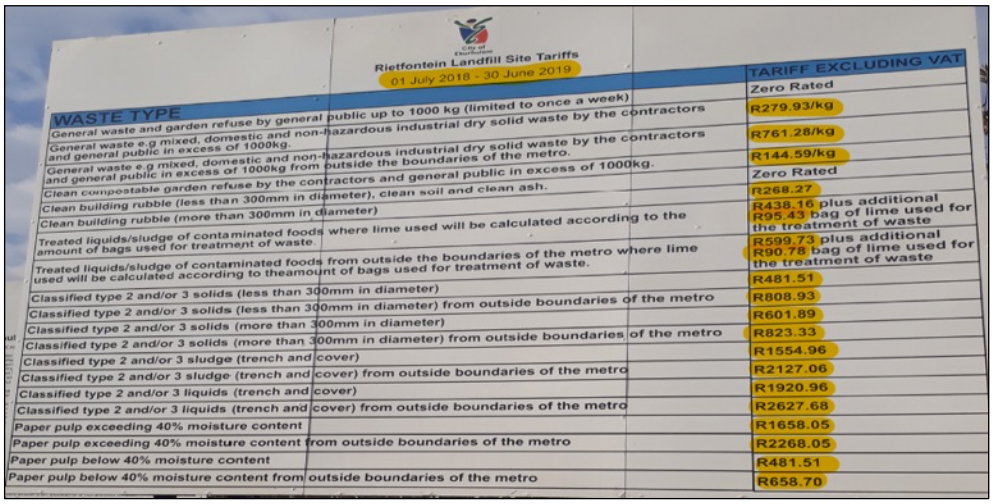
6.1 Waste Category & Tonnages Capturing Procedure in the City of Ekurhuleni.

Entities involved in activities listed in Annexure 1 of the NEM:WA Act, 2008 (Act No. 59 of 2008), must register on National, Provincial, and Municipal Waste Information Systems. The Gauteng Waste Information System (GWIS) oversees waste data in the Gauteng region, including the City of Ekurhuleni. Accurate data on waste movements is crucial for enhancing a city's waste management system. Identifying how a city collects and organizes these data helps integrate formal and informal waste sectors, fostering economic and environmental benefits.

At landfill sites, waste trucks enter through a main security gate, where the driver signs a register before proceeding to the weighbridge. Controlled by a traffic-light system, the truck stops at a designated area on the weighbridge (**Figure 11**). The operator then identifies the vehicle owner via the number plate and assigns it to a customer account.

Figure 11: Rietfontein Landfill Site: Weighbridge Infrastructure – Capturing of incoming waste tonnages on site

The weighbridge operator then verifies the type of waste disposed of into the landfill site as per the permitted waste category and assigns a waste disposal tariff. The weighbridge operator captures the incoming waste truck tonnage and assigns it to a customer account according to the applicable waste tariff (**Figure 12)**.



Rietfontein Landfill Site Tariffs
01 July 2018 - 30 June 2019

WASTE TYPE	TARIFF EXCLUDING VAT
General waste and garden refuse by general public up to 1000 kg (limited to once a week)	Zero Rated
General waste e.g mixed, domestic and non-hazardous industrial dry solid waste by the contractors and general public in excess of 1000kg.	R279.93/kg
General waste e.g mixed, domestic and non-hazardous industrial dry solid waste by the contractors and general public in excess of 1000kg from outside the boundaries of the metro.	R761.28/kg
Clean compostable garden refuse by the contractors and general public in excess of 1000kg.	R144.59/kg
Clean building rubble (less than 300mm in diameter), clean soil and clean ash.	Zero Rated
Clean building rubble (more than 300mm in diameter)	R268.27
Treated liquids/sludge of contaminated foods where lime used will be calculated according to the amount of bags used for treatment of waste.	R438.16 plus additional R95.43 bag of lime used for the treatment of waste
Treated liquids/sludge of contaminated foods from outside the boundaries of the metro where lime used will be calculated according to theamount of bags used for treatment of waste.	R599.73 plus additional R90.78 bag of lime used for the treatment of waste
Classified type 2 and/or 3 solids (less than 300mm in diameter)	R481.51
Classified type 2 and/or 3 solids (less than 300mm in diameter) from outside boundaries of the metro	R808.93
Classified type 2 and/or 3 solids (more than 300mm in diameter)	R601.89
Classified type 2 and/or 3 solids (more than 300mm in diameter) from outside boundaries of the metro	R823.33
Classified type 2 and/or 3 sludge (trench and cover)	R1554.96
Classified type 2 and/or 3 sludge (trench and cover) from outside boundaries of the metro	R2127.06
Classified type 2 and/or 3 liquids (trench and cover)	R1920.96
Classified type 2 and/or 3 liquids (trench and cover) from outside boundaries of the metro	R2627.68
Paper pulp exceeding 40% moisture content	R1658.05
Paper pulp exceeding 40% moisture content from outside boundaries of the metro	R2268.05
Paper pulp below 40% moisture content	R481.51
Paper pulp below 40% moisture content from outside boundaries of the metro	R658.70

Figure 12: Rietfontein Landfill Site Tariff Board

The waste truck driver waits for a green light at the traffic signal to proceed to the landfill working face for disposal. At the working face, the driver is directed by the site operator's "spotters" on where to dispose of the waste.

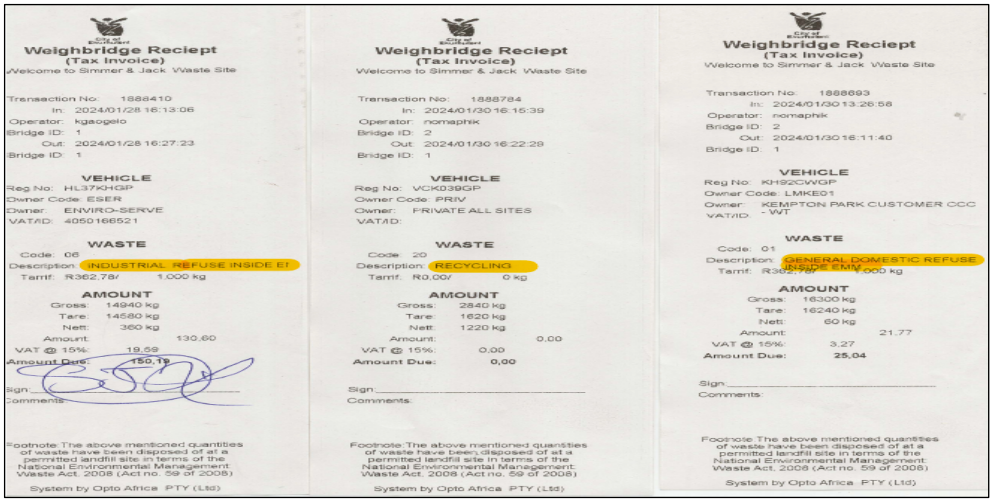
After leaving the working face, all waste trucks, whether carrying recyclables or empty, must pass through the outgoing weighbridge, which records the truck's outgoing weight. If the truck returns empty, the difference between the incoming and outgoing weight represents the total waste disposed of.

For trucks carrying recyclables, the waste is recorded as a negative tonnage from the site, and these vehicles are linked to a pre-registered customer account (**Figure 13**). No weighbridge fee is charged for removing recyclables from the landfill.

Figure 13: Rietfontein Landfill Site: Weighbridge Infrastructure - Capturing of outgoing recyclables tonnages from site

Waste tonnages and reports from the weighbridge system can be downloaded by the City of Ekurhuleni and its authorised users on a monthly basis. The data for the research period from 2015 to 2021 were downloaded and reviewed by the researcher. Examples of transaction receipts and reports from the weighbridge system are shown in **Figure 14 Figure 15**, **Figure 16** and **Figure 17**.

The above waste acceptance and waste tonnage capturing procedure is applicable to all five (5) City of Ekurhuleni operational landfill sites.



Weighbridge Reciept
(Tax Invoice)
Welcome to Simmer & Jack Waste Site

Transaction No: 1888410
In: 2024/01/28 16:13:08
Operator: kgaogelo
Bridge ID: 1
Out: 2024/01/28 16:27:23
Bridge ID: 1

VEHICLE
Reg No: HL37KHGP
Owner Code: ESER
Owner: ENVIRO-SERVE
VAT/ID: 4050166521

WASTE
Code: 06
Description: INDUSTRIAL REFUSE INSIDE EI
Tariff: R362,78/ 1,000 kg

AMOUNT
Gross: 14940 kg
Tare: 14580 kg
Nett: 360 kg
Amount: 130,60
VAT @ 15%: 19,59
Amount Due: 150,19

Sign:
Comments:

Footnote: The above mentioned quantities of waste have been disposed of at a permitted landfill site in terms of the National Environmental Management: Waste Act, 2008 (Act no. 59 of 2008)

System by Opto Africa PTY (Ltd)

Weighbridge Reciept
(Tax Invoice)
Welcome to Simmer & Jack Waste Site

Transaction No: 1888784
In: 2024/01/30 16:15:39
Operator: nomaphik
Bridge ID: 2
Out: 2024/01/30 16:22:29
Bridge ID: 1

VEHICLE
Reg No: VCK039GP
Owner Code: PRIV
Owner: PRIVATE ALL SITES
VAT/ID:

WASTE
Code: 20
Description: RECYCLING
Tariff: R0,00/ 0 kg

AMOUNT
Gross: 2840 kg
Tare: 1620 kg
Nett: 1220 kg
Amount: 0,00
VAT @ 15%: 0,00
Amount Due: 0,00

Sign:
Comments:

Footnote: The above mentioned quantities of waste have been disposed of at a permitted landfill site in terms of the National Environmental Management: Waste Act, 2008 (Act no. 59 of 2008)

System by Opto Africa PTY (Ltd)

Weighbridge Reciept
(Tax Invoice)
Welcome to Simmer & Jack Waste Site

Transaction No: 1888693
In: 2024/01/30 13:26:58
Operator: nomaphik
Bridge ID: 2
Out: 2024/01/30 16:11:40
Bridge ID: 1

VEHICLE
Reg No: KH92CWGP
Owner Code: LMKE01
Owner: KEMPTON PARK CUSTOMER CCC - WT
VAT/ID:

WASTE
Code: 01
Description: GENERAL DOMESTIC REFUSE INSIDE EMM
Tariff: R362,78/ 1,000 kg

AMOUNT
Gross: 16300 kg
Tare: 16240 kg
Nett: 60 kg
Amount: 21,77
VAT @ 15%: 3,27
Amount Due: 25,04

Sign:
Comments:

Footnote: The above mentioned quantities of waste have been disposed of at a permitted landfill site in terms of the National Environmental Management: Waste Act, 2008 (Act no. 59 of 2008)

System by Opto Africa PTY (Ltd)

Figure 14: Examples of weighbridge transaction receipts for Industrial refuse, recycling and general domestic refuse from Simmer & Jack Landfill Site

OptoAfrica Connecting the Real World

WinBridge™ - Ekurhuleni | Customer Report

Customer Report-All Sites | Log Off

All Sites Customer Report Report for **REMADE HOLDINGS (PTY)LTD (SJ1571)** between **2015/01/01** and **2021/12/31**

Report generated on 2024/01/29 at 22:13:17

REMADE HOLDINGS (PTY)LTD (SJ1571)			
Waste Category	**Transactions**	**Mass**	**Amount**(ex VAT)
INDUSTRIAL REFUSE INSIDE EMM	4	19 800 kg	R 5 727.26
RECYCLING	8	12 640 kg	R 0.00
Total	**12**	**32 440 kg**	**R 5 727.26**

Customer Report

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Figure 15: Example of Customer Report from Weighbridge System for all City of Ekurhuleni Sites for period 2015 – 2021

OptoAfrica Connecting the Real World

WinBridge™ - Ekurhuleni | Customer Report

Customer Report-All Sites | Log Off

All Sites Customer Report Report for **RECYCLERS WELTEVREDEN (WT3116)** between **2015/01/01** and **2021/12/31**

Report generated on 2022/10/07 at 02:42:34

RECYCLERS WELTEVREDEN (WT3116)			
Waste Category	**Transactions**	**Mass**	**Amount**(ex VAT)
GENERAL DOMESTIC REFUSE INSIDE EMM	1	2 500 kg	R 752.30
INDUSTRIAL REFUSE INSIDE EMM	1	1 540 kg	R 431.09
RECYCLING	296	367 408 kg	R 0.00
Total	**298**	**371 448 kg**	**R 1 183.39**

Customer Report

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Figure 16: Example of Customer Report from Weighbridge System for all City of Ekurhuleni Sites for period 2015 – 2021

OptoAfrica Connecting the Real World

WinBridge™ - Ekurhuleni | Waste Category Report

Waste Category Report-WELTEVREDEN | Log Off

Waste Category Report for **WELTEVREDEN** between **2015/01/01** and **2021/12/31**

Report generated on 2024/01/29 at 22:41:34

Waste Category	Transactions	Total Qty	Total Amount
ASH COVER MATERIAL	544	0 (2 849 786 kg)	R 0.00
CLEAN BUILDING RUBBLE (less than 300mm)	24 855	0 (101 005 035 kg)	R 0.00
CLEAN BUILDING RUBBLE(MORE than300mm)	293	0 (1 898 330 kg)	R 490 471.61
CONTRACTORS-CLEAN COMPOST/GARDEN REFUSE	11 087	0 (9 562 276 kg)	R 1 356 751.27
GEN PUB - CLEAN COMPOST/GARDEN REFUSE	3 496	0 (2 434 692 kg)	R 73 481.23
GENERAL DOMESTIC REFUSE INSIDE EMM	210 032	4 (1 228 506 626 kg)	R 332 142 165.50
INDUSTRIAL REFUSE INSIDE EMM	88 367	0 (159 173 012 kg)	R 42 048 912.66
INDUSTRIAL REFUSE OUTSIDE EMM	2	0 (4 880 kg)	R 4 165.74
MIXED WASTE (Soil, paper,rubble etc)	59 785	0 (582 498 776 kg)	R 164 681 387.96
NO LONGER IN USE	2	0 (9 380 kg)	R 0.00
RECYCLING	4 967	0 (6 515 291 kg)	R 0.00
SAFE DISPOSAL PRODUCTS: CRUSHED/BURIED	1	0 (60 kg)	R 27.37
SOIL (usable as cover material)	12 116	0 (101 930 793 kg)	R 0.00
Sub Total	**415 547**	**2 196 388 937 kg**	**R 540 797 363.34**
Uncategorised Waste	**272**	**54 120 kg**	**R 1 061.33**
Total	**415 819**	**2 196 443 057 kg**	**R 540 798 424.67**

Waste Category Report

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Figure 17: Summary of all waste categories and tonnages received at Weltevreden landfill site for the period 2015 - 2021

6.2 Rietfontein Landfill Site

6.2.1 Site Brief and Setting

The Rietfontein landfill site in Springs was fully operational during the study period and managed by a professional waste operator for Ekurhuleni. Ekurhuleni personnel oversee the weighbridge system, daily waste documentation, and vehicle tracking, while weighbridge maintenance and software management are handled by a third-party contractor. The City of Ekurhuleni retains control over daily operations but outsources critical maintenance tasks.

Interviews with waste pickers required a kick-off meeting with key stakeholders, including the site manager from the waste operator, the researcher's translator, Ekurhuleni personnel, and site security.

The Rietfontein landfill, classified as a G:L:B+ site, receives about 20,000 tonnes of general and delisted waste monthly and hosts approximately 220 daily waste pickers. The site operates under permit number 16/2/7/C221/D494/P275, issued on 02 October 1997, per section 20(1) of the Environment Conservation Act, 1989 (Act 73 of 1989), and reviewed by the Department of Water Affairs and Forestry (now DWS). This permit has been amended several times, notably on 23 March 2001 and 08 July 2003.

Originally, the 1997 permit allowed waste reclamation, but amendments, particularly from 2001, prohibited on-site waste reclamation, meaning waste pickers should not reclaim waste at the Rietfontein landfill. However, the permit has not been amended under NEM:WA 2008 (Act No: 59 of 2008).

The City of Ekurhuleni is required to comply with a number of regulatory requirements in the management of waste pickers on their landfill sites. Firstly, they must ensure that the waste register of all waste pickers working at Rietfontein is maintained. Secondly, monthly meetings are to be conducted between the site operator, the City of Ekurhuleni, and the waste pickers. Lastly, the municipality is obligated to provide personal protective equipment to each reclaimer working on-site.

At the Rietfontein landfill site, a six-member waste pickers steering committee first reviewed the researcher's objectives and request for participation to inform the other waste pickers before interviews began. Forty waste pickers, including 37 males and 7 females over 18 years old, were interviewed individually. Minors under 18 were not allowed on the site for reclamation activities. The interviews, conducted between 26 May and 03 June 2022 at the

landfill working face, were chosen to avoid the risk of stolen recyclables, as waste pickers were hesitant to leave their materials to visit the site office. No compensation was offered to participants.

6.2.2 Waste Reclaimer's Working Conditions, Notes, Concerns and General Observations

The study revealed that waste pickers operate every day of the week, generally during the landfill's operational hours. Although they are prohibited from residing on the premises, it was noted that some individuals are compelled to sleep on-site to safeguard their collected materials. The site operator assigns waste pickers to a specific area within the landfill for their activities, which may change weekly or monthly. This designated space is determined by the operator's waste deposition strategy.

At Rietfontein landfill site, there exists a registered group of on-site waste collectors. This organisation maintains a register that serves two purposes for its members. Firstly, it provides support to waste pickers who are unable to work due to injuries sustained whilst on the job, contributing to their sustenance during their absence. Secondly, the register offers assistance in times of bereavement when a member loses a family member.

The majority of recyclable materials collected by waste pickers are paper, cardboard, glass and plastics (**Figure 18** and **Figure 19**), these are sold on-site to buyers known as waste dealers (middlemen) (**Figure 21**) and/or directly to Remade/Mpact (refer to Figure 19), who have a representative on-site daily. Remade/Mpact provides permanent waste skips on site, where all the waste, once bought, is placed (**Figure *22***). All waste is measured between waste pickers and buyers on a mobile scale (**Figure 20**).

The waste dealers and buyers typically carry recyclables out daily and take them to a buy-back centre within the City of Ekurhuleni operated by the private sector. All waste recyclables are measured using a site weigh bridge (**Figure 13**).

Waste pickers face a significant obstacle in material recovery due to the contamination of recyclables with other refuse. The majority of waste pickers indicated that source separation of waste could contribute to reducing the volume of hazardous and mixed waste, including items such as shattered glass, that ultimately ends up in landfills.

Figure 18: Rietfontein Site - Waste pickers scavenging through waste on working face

Figure 19: Rietfontein Site - Collected recyclables off the working face before being weighed

Figure 20: Rietfontein Site - Mobile scale on site used to weigh waste recyclables

Figure 21: Rietfontein Site - Collected recyclables before being taken off site via weighbridge by middle buyers

Figure 22: Rietfontein Site - Recyclables bought from waste pickers by Remade/Mpact on Site

6.2.3 Challenges and Opportunities Communicated by Waste Pickers during the Interviews

Waste pickers at the Rietfontein Landfill Site reported various challenges and opportunities associated with their work.

Firstly, a general decline in recyclable waste from the site was observed. This reduction was attributed to several factors, notably the impact of the Covid pandemic in the two years preceding the research. According to the waste pickers their income had further drastically decreased because of changes in PET. Coca Cola, as one of the major PET producers, has introduced the recyclable and returnable bottles, as a result very little PET is found at the landfill sites.

Secondly, there is more competition and a notable increase in waste pickers at the site compared with previous years. This implies that in the midst of declining waste recyclable volumes, more waste pickers must share a lower tonnage of waste for recyclables. Some of the waste pickers are having to explore other opportunities and avenues to earn a livelihood other than waste reclamation as a result of this.

The COVID-19 outbreak imposed additional employment and economic constraints. For a period of seven (7) months, waste collectors were prohibited from accessing the Rietfontein landfill site. This exacerbated their already challenging financial circumstances.

Despite facing work-related difficulties, waste pickers remained hopeful about potential improvements to their working environment. They identified several opportunities for enhancement. Firstly, the City of Ekurhuleni could install a pedestrian access gate on the Kwa Thema side, facilitating easier entry and exit, particularly for transporting materials. Secondly, the provision of on-site toilet facilities and potable water would improve user convenience. Lastly, the waste pickers believed that increased engagement from the City of Ekurhuleni regarding waste reclamation activities, coupled with public education about waste recovery and its benefits, would be beneficial. This approach could help them recover more materials, not only at landfill sites but also through source separation.

6.3 Rooikraal Landfill Site

6.3.1 Site Brief and Setting

The Rooikraal landfill site in Boksburg was closed and non-operational during the research period, with no waste vehicles or trucks entering (**Figure 23**). It had been shut for eighteen months due to internal administrative issues within the City of Ekurhuleni, which were still being resolved at the time of the study. The reopening date remains unknown. The site was staffed only by City of Ekurhuleni employees and a private security company contracted by the municipality.

Figure 23: Rooikraal Landfill Site: Closed during the Research Period up to 18 months before date of Research

The Rooikraal landfill, a G:L:B- waste disposal site, received around 23,000 tonnes of general waste monthly before closing and has 150–180 waste pickers reclaiming waste weekly. The site permit (No. 16/2/7/C221/D24/Z1/P512) issued on 30 June 2005 under the Environment Conservation Act, 1989 (Act 73 of 1989) by the Department of Water Affairs and Forestry (now DWS) was reviewed and amended under NEM:WA 2008 (Act No: 59 of 2008) on 06 November 2017 with a new Waste Management Licence (No. 002/17–18/W0005). The licence includes provisions regarding waste reclamation and waste pickers.

Clause 3.6 (c) allows waste reclamation to provide a demarcated area and waste reclamation does not interfere with daily site operations.

Clause 3.6 (g): requires City of Ekurhuleni to provide and make allowance to all waste reclaimers on site with full PPE and conduct medical checkups on an annual basis.

A few waste pickers were still present on site and reclaimed waste was illegally dumped outside the landfill site. With the aid and assistance of the CoE site officer, a special meeting was arranged for all waste pickers working in Rooikraal. The meeting took place on the 06th of June 2022 at the entrance gate of the site (**Figure 24)**.

The group discussion was arranged in response to a specific appeal from the waste pickers, who requested reimbursement for their travel expenses incurred to join the discussion. The researcher provided a compensation of R30.00 to each participant as a travel cost reimbursement.

In total, twenty-six (26) waste pickers were present at the meetings. All attendees signed individual consent forms; however, the interviews were conducted as a group discussion. Questions were read aloud, and responses were solicited from all participants.

6.3.2 Waste Reclaimer's Working Conditions, Notes, Concerns and General Observations

Considering that the site was closed, a number of key findings were noted based on general observations and comments from the waste pickers focus group discussions.

The site operator when the site is operational allocates waste pickers to specific times when they can reclaim materials from the working face, which is typically between 07h00am and 10h00am every day. The waste pickers maintain a register and record of all waste pickers working on site. However, it was noted that during the research study period, there was a growing number of unregulated waste pickers on the site that are not part of the register, and this makes it difficult for the waste picker committee to manage and control them in light of agreed working conditions with the City of Ekurhuleni and site operators.

The majority of recyclable materials collected by waste pickers are paper, cardboard, glass and plastics and it was stated that the waste pickers opts to sell all their recyclable materials to Remade/Mpact due to their competitive pricing compared to other local buyers. Additionally, the convenience of Remade/Mpact representatives visiting the landfill site simplifies the transaction process for the waste pickers.

However, owing to the closure of the site, others have had to look at alternative means to earn income, such as providing gardening services in nearby communities.

The waste pickers at Rooikraal identified several potential improvements to their working conditions that could be facilitated by the City of Ekurhuleni. These enhancements included the provision of a dedicated work area in the form of a shed, suitable protective gear, toilet facilities, and access to water. The implementation of these measures was viewed as a valuable opportunity to ameliorate their work environment.

Figure 24: Rooikraal Landfill Site - Engagement of Waste Pickers in a Focus Group

6.4 Simmer & Jack Landfill Site

6.4.1 Site Brief and Setting

The Simmer & Jack landfill site is located in the Germiston area (**Figure 25**) and is fully operational. The researcher visited the site from 06 to 08 June 2022. A pre-meeting on 06 June 2022 introduced the research objectives to the researcher, facilitator/interpreter, Site Operator manager, and City of Ekurhuleni representative.

On 07 June, a kick-off meeting with the waste pickers committee occurred in the Simmer & Jack site boardroom, attended by the Site Operator's Manager and City of Ekurhuleni representative. The site is a G:L:B- waste disposal facility handling approximately 25,000 tonnes of general waste monthly, with around 280 waste pickers reclaiming waste daily and weekly (**Figure 26**).

Figure 25: Simmer & Jack Landfill Site: Entrance Signage to site

The site permit number B33/2/0322/494/P223, issued on 18 March 1996 under section 20 (1) of the Environment Conservation Act, 1989 (Act 73 of 1989), and the Department of Water Affairs and Forestry (now DWS), was reviewed. It was amended on 26 October 2017 under NEM:WA 2008 (Act No: 59 of 2008) with a new Waste Management Licence (Gaut 002/17-18/W0003). The Licence addresses waste reclamation and waste pickers.

Clause 3.6 (c) allows waste reclamation to provide a demarcated area and waste reclamation does not interfere with daily site operations.

Clause 3.6 (g): requires City of Ekurhuleni to provide and make allowance to all waste reclaimers on site with full PPE and conduct medical checkups on an annual basis.

6.4.2 Waste Reclaimer's Working Conditions, Notes, Concerns and General Observations

The following are the general notes and observations from the site in relation to waste picker activities at the Simmer & Jack landfill site.

The research findings indicated that waste pickers work seven days a week, and the City of Ekurhuleni officials maintain and update an on-site register of these workers. Communication between the municipal authorities and waste pickers is facilitated through a waste picker committee, which serves as an intermediary amongst the waste collectors, the City of Ekurhuleni, and the site manager. This committee is responsible for addressing any emerging concerns or problems at the site, involving all relevant parties.

The waste pickers participated in on-site focus group discussions. All interviewees indicated that waste picking constituted their sole means of livelihood. The site operates under a gender-exclusive policy, permitting only male waste pickers, with females barred from entry. Notably, this restriction is self-imposed by the waste pickers rather than mandated by the City of Ekurhuleni. The rationale behind this arrangement remained unexplained. One participant hinted at historical inter-picker territorial violence as a potential factor contributing to the absence of women, implying an environment deemed unsafe for their presence. This past conflict may have deterred women from frequenting the area.

The majority of recyclable materials collected by waste pickers are paper, cardboard, glass and plastics and these are sold to Remade/Mpact, and waste pickers transport these recyclables to the buy-back centre, as Remade/Mpact does not maintain a permanent structure on-site, a restriction enforced by the waste pickers committee. This arrangement

results in additional costs for the waste pickers, as all recyclables collected on-site must be transported to recyclers or buy-back centres. Majority of waste pickers pick do not have a specific preference of what type to reclaim and would typically reclaim what they find and pay less attention to composition of recyclable materials.

The utilisation of portable weighing equipment such as mobile scales for recyclable materials is prohibited on the site. All recyclable items must be weighed using the City of Ekurhuleni's official weighbridge(**Figure 27)**.

Figure 26: Simmer & Jack Landfill Site - Reclaimers in sight on the landfill workface reclaiming recyclables

Figure 27: Simmer & Jack Landfill Site - recyclables taken off site via weighing at site weighbridge

6.4.3 Challenges and Opportunities Communicated by Waste Pickers during the Interviews

The City of Ekurhuleni site manager stated that the landfill site had reached its operational life in 2021; however, it still receives waste, although the tonnages have lessened over the last twelve (12) months. As a result, the waste being reclaimed and recovered has declined, making the standard of living difficult for waste pickers due to the low income being generated.

The site experiences frequent closure due to operational and safety concerns, primarily attributed to insufficient space for incoming trucks to deposit waste. Additionally, it was observed that recyclable storage containers from buy-back centres such as Remade/Mpact are not permitted on site. Consequently, this results in limited space on the premises for waste pickers to store recyclable materials.(**Figure 28)**.

Figure 28: Simmer & Jack Landfill Site - Waste pickers recycling bags on site, view of limited storage space

Waste pickers face various daily obstacles, including the risk of injury from shattered glass bottles mixed with refuse, which presents a significant safety hazard during waste collection. Additionally, their work is often interrupted by the grim discovery of deceased infants or foetuses at the site. Such incidents require notification to the City of Ekurhuleni, and law enforcement is typically summoned to remove the remains. During this process, waste pickers are prohibited from continuing their work until the police have completed the removal of the deceased body.

Nevertheless, amidst the daily challenges they encountered, they perceived potential opportunities for improving their on-site working conditions, should the City of Ekurhuleni address them, such as:

The provision of permanent shelters and supporting infrastructure for waste collectors and their on-site activities, as well as a waste compressing machine on-site prior to waste pickers transporting their recyclables off-site.

Furthermore, they expressed the view that the provision of financial assistance from the City of Ekurhuleni in the form of grants during periods when the site is closed, resulting in income loss, could ensure their ability to sustain their families in the absence of employment.

Others felt that in view that the site is likely to close any day, they would appreciate a new landfill site where they could reclaim their recyclables to ensure continuous earning of income.

One group further expressed that the municipality needs to provide and do more in the area of general awareness to households and industries to not dispose of any hazardous substances together with recyclable materials, as many waste pickers' livelihoods are dependent on it and poses a further health hazard to them..

6.5 Weltevreden Landfill Site

6.5.1 Site Brief and Setting

The Weltevreden landfill site was located in the Brakpan area (**Figure 30**). The site is fully operational. The researcher conducted her site visit over three (3) days from 22 to 24 June 2022.

A pre-meeting took place on 22 June 2022 as a formal introduction to the research objectives and goals between the researcher, facilitator/interpreter, Site Operator manager, and the city of Ekurhuleni site representative. The researcher was introduced to the waste picker committee on the same day, which consisted of three (3) people (**Figure 29**).

Figure 29: Weltevreden Landfill Site - Kick off meeting with waste pickers committee on 22 June 2022

Weltevreden landfill, designated G:L:B-, is the largest waste disposal site in the City of Ekurhuleni, handling around 34,000 tonnes of general waste monthly and employing approximately 500 waste pickers. The site operates under permit B33/2/321/172/P137, issued on 07 October 1994 per Section 20 (1) of the Environment Conservation Act, 1989 (Act 73 of 1989), and reviewed by the Department of Water Affairs and Forestry (now DWS). This permit was amended on 26 October 2017 under NEM:WA 2008 (Act No: 59 of 2008) with a new Waste Management Licence (Gaut 002/17-18/W0006), addressing waste reclamation and waste picker operations.

Clause 3.6 (c) allows waste reclamation to provide a demarcated area and waste reclamation does not interfere with daily site operations.

Clause 3.6 (g): requires City of Ekurhuleni to provide and make allowance to all waste reclaimers on site with full PPE and conduct medical checkups on an annual basis.

Figure 30: Weltevreden Landfill Site: Entrance signage to site

6.5.2 Waste Reclaimer's Working Conditions, Notes, Concerns and General Observations

The following are the general notes and observations from the site in relation to waste picker activities at the Weltevreden landfill site (**Figure 31**).

On-site focus group discussions were conducted with waste pickers at the working face. All participants reported that waste picking was their only source of income. The site was found to have an organised structure overseen by a waste pickers committee, along with a register of all waste pickers operating on-site. The city of Ekurhuleni supplies personal protection equipment (PPE) to waste pickers, but this is limited to South African citizens and those with legal status. It was noted that the majority of waste pickers do not wear the provided PPE whilst on-site.

Both male and female individuals engage in recyclable material reclamation at the Weltevreden Landfill Site, operating in two distinct shifts daily: a morning shift (07:00 – 13:00) and an afternoon shift (13:00 – 17:00). Male workers are present from Monday to Thursday, while female workers are present from Friday to Sunday. The gender-based allocation of working periods is implemented to enable women to reclaim materials without apprehension of harassment or intimidation by physically dominant male counterparts in the waste collection process.

The waste pickers collect all recyclable materials available such as paper, cardboard, glass and plastics; however, some individuals focus on specific items such as plastic bottles due to preference and the value of the recyclable material. It was also observed that PET is among

the most valuable recyclables, and its supply is high during summer and low in winter. This fluctuation is attributed to the increased consumption of beverages in summer for cooling purposes. Majority of waste pickers pick do not have a specific preference and would typically reclaim what they find and pay less attention to composition of recyclable materials.

All on-site recyclables by waste pickers on the working face are weighed using a mobile scale. Then, the vehicles transporting them off-site must pass through the weighbridge (**Figure 33**). The recyclables are sold to various recycling facilities, including Remade/Mpact, Benoni Chinese Recycling, and Kobus Metals.

Although there is a recycling facility structure on-site called the Mayfair storage area, it is not currently utilised by waste pickers and is situated at a considerable distance from the working face and the primary activities of waste pickers. The waste pickers expressed interest in utilising the structure; however, they indicated that there would be costs associated with its operation, including the provision of full-time security, which they were unable to manage independently without assistance from the City of Ekurhuleni.

Waste pickers are therefore required to immediately transport all recovered materials off site for sell as on-site storage of recyclable items is not permitted (**Figure 32**).

Figure 31: Weltevreden Landfill Site - Reclamation of waste in progress

Figure 32: Weltevreden Landfill Site - Collected recyclables on the working face

Figure 33: Weltevreden Landfill Site - Mobile scale on site for weighing recyclables

The landfill site has a public disposal area operated and managed by an appointed service provider as appointed by the municipality and caters for all recycling activities in the area. The public disposal area operator is responsible for managing all incoming waste and reclaimed waste from the area. The public disposal area typically receives waste from households in small quantities. However, waste pickers are restricted from reclainign materials from this area.

It was further reported that during the COVID-19 pandemic, access to the site was restricted for waste pickers. Nevertheless, the site continued to receive waste from COVID-related facilities.

6.5.3 Challenges and Opportunities Communicated by Waste Picker During the Interviews

The site owner reported several challenges in their daily operations of the site in relation to waste picker activities and the measurement of recyclables. The municipality emphasised the need for more stringent enforcement and control at the weighbridge for incoming and outgoing vehicles that collect recyclables. The majority were found to be non-compliant with the protocols of stopping at the weighbridge, and the buyers of recyclables would typically traverse the weighbridge on their way out, as there is no boom gate to regulate the stop-and-go process to allow for the capturing of recoverable materials.(**Figure 34**).

Figure 34: Weltevreden Landfill Site - Vehicle with recyclables going out of site without being weighed

Another significant challenge encountered on-site was the limited availability of remaining airspace. The municipality indicated that a new cell was in the process of being constructed and would commence waste disposal in early 2025. Due to constrained airspace, the working face is currently utilised as a collection point and storage area for waste pickers' activities; this presents challenges in mitigating litter and accommodating all waste pickers during material reclamation.

Waste reclamation significantly endangers waste pickers with hazards like broken glass and needles. Additionally, they often find deceased newborns or fetuses, requiring them to notify the City of Ekurhuleni and the police, who then remove the remains. Waste pickers must cease their work until law enforcement completes this process.

The sporadic occurrence of fires at the site presents an additional health risk due to the potential inhalation of smoke. Consequently, the site is often required to shut down for extended periods, which adversely affects the livelihoods of waste pickers.

The waste pickers at Weltevreden expressed a number of opportunities they saw that could improve their working conditions on site if the City of Ekurhuleni provided it for them.

Nevertheless, amidst the daily challenges they encountered, they perceived potential opportunities for improving their on-site working conditions, should the City of Ekurhuleni address them, such as:

The provision of permanent on-site storage facilities and supporting infrastructure for waste pickers and their on-site activities. Other waste pickers, specifically women, expressed the necessity for ablution facilities and changing rooms as the primary areas of concern to be addressed by the municipality.

Lastly, the waste picker committee advocated for a more integrated approach by the municipality in terms of incorporating them into the system. It was reported that a comprehensive functional plan for on-site operations was proposed by the waste pickers committee to the City of Ekurhuleni, which has not yet been implemented. The plan delineated site operations and reclaiming activities in designated areas on site. Furthermore, the plan provided for a recycling facility in closer proximity to the working face.

6.6 Platkop Landfill Site

The Platkop landfill site was located in the Germiston area (**Figure 35**). The site is fully operational. The researcher visited the site on 14 July 2023. A meeting took place as a formal introduction to the research objectives and goals between the researcher, facilitator/interpreter, Site Operator manager, and the city of Ekurhuleni site representative.

The platkop landfill site is a G:L:B waste disposal site that receives approximately 20 000 tonnes per month of general and asbestos waste per month; therefore, no waste reclamation or waste pickers are permitted on site, (**Figure 36 and Figure 37**).

The site permit number 16/2/7/C221/D494/Z3/P461 issued on 04 March 2002 in terms of section 20 (1) of the Environment Conservation Act, 1989 (Act 73 of 1989) then Department of Water Affairs and Forestry now DWS was reviewed. The permit has been amended since

the first issue. The original permit issue has not undergone any amendment under NEM:WA 2008 (Act No: 59 of 2008).

The permit under clause 5.1.6 prohibits any waste disposed of on the site from being reclaimed as the site is permitted to receive asbentos waste. Therefore, the interviews conducted on-site and data collection were related only to waste tonnage received on-site and were unrelated to waste reclamation activities. The site weighbridge was fully operational, and all incoming waste was captured and recorded by the weighbridge operators.

No waste pickers were observed on site during the inspection (**Figure *37***), although the site operator reported occasional incidents of waste pickers breaching the palisade fence at night to reclaim materials. Additional measures, including the deployment of additional night guards, were implemented to prevent recurrence and enforce security protocols.

Figure 35: Platkop Landfill Site: Entrance signage to site

Figure 36: Platkop Landfill Site: Waste disposal operations with no waste pickers.

Figure 37: Platkop Landfill Site: Waste disposal operations with no waste pickers in sight

6.7 Chapter Summary

The findings of the individual case study at landfill sites within the City of Ekurhuleni indicate that waste reclaimer activities are limited to four out of the five landfill sites. The fifth site, Platkop, does not allow for waste reclamation, as it is designated for the disposal of asbestos waste, and no waste pickers are permitted.

All landfill sites are operational and hold valid waste licences and permits. Three of the five sites, namely Rooikraal, Simmer & Jack, and Weltevreden, have undergone an amendment process from the Environment Conservation Act, 1989 (Act 73 of 1989), to the National Environmental Management: Waste Act (NEM:WA) 2008 (Act No: 59 of 2008), which includes provisions for waste reclamation on the sites. The remaining two sites, Rietfontein and Platkop, are still in the process of conversion, and therefore legally should not allow waste reclamation in the case of Rietfontein.

The city has established a comprehensive infrastructure for the effective management of waste tonnage entering and exiting sites. Recyclables are carefully separated from the landfill site via a weighbridge, and no additional fees are charged for their removal. However, it should be noted that in some instances, materials are removed from the landfill site in an unregulated manner and are therefore not quantified.

The number of waste reclaimers who collect recyclables from landfill sites varies from 200 to 500 depending on the site, and they all appear to be operating independently, selling the

recyclables to middlemen or Remade/Mpact. The City of Ekurhuleni officials, site operators, and waste pickers have established a harmonious working relationship at all landfill sites.

The requests made by the waste reclaimers for the provision of basic facilities such as ablution facilities, drinking water, working shelters for the rainy season, and personal protective equipment were common findings at all four landfill sites that engage in reclamation activities. It is noteworthy that exposure to health hazards during the reclamation process was a common concern among all four sites.

CHAPTER 7. COMPARATIVE ANALYSIS ACROSS CASE STUDY SITES

7.1 Introduction

This chapter presents a comparative analysis of the research across case study sites and discusses them in relation to the research questions and objectives. The study's comparative analysis is organised and presented in accordance with the research themes, beginning with an analysis of the demographics of informal waste pickers to understand who constitutes the informal waste sector in the city of Ekurhuleni as the first theme. The second theme was the quantification of recoverables by assessing, quantifying, and analysing the waste quantities disposed of at CoE-owned landfill sites over a six-year period (2015 – 2021) and subsequently recovered and/or recycled by informal waste pickers. The third theme was to identify key stakeholders in the CoE waste value chain linked to waste picker activities at operational landfill sites. The fourth theme explored the vulnerability, challenges, and opportunities of waste pickers. Finally, the last theme discussed opportunities and barriers within existing institutional frameworks, legislation, and guidelines for integrating the informal waste sector at CoE landfill sites.

7.2 Who makes up the informal waste sector in the CoE?

The research interview questions were designed to gain a deeper comprehension of the demographic makeup of the waste pickers being studied as well as any discernible variations in their working schedules, tenure, and awareness of their environment. Additionally, the questions explored their interactions with the city of Ekurhuleni officials and landfill site operators during their daily work routines.

7.2.1 Number of informal waste picker participants per landfill site

This study conducted interviews with 350 waste pickers out of a population of 1180 from four of the five operational landfill sites in the city of Ekurhuleni. The landfill sites at which the interviews were conducted were Rietfontein, Rooikraal, Weltevreden, and Simmer & Jack. Table 11 presents a comprehensive breakdown of the number of respondents interviewed at each site (**Table 11**).

Table 11: Total number of waste pickers as per site registers at CoE landfill sites versus total number interviewed

Landfill site and form of interviews conducted	Demographic profile of waste pickers	Total no. interviewed	Total no. of waste pickers present on the landfill site
Rietfontein (Individual Interviews)	Committee Members	5	220
	Male Waste Pickers	28	
	Female Waste Pickers	7	
Simmer & Jack (Focus Groups)	Male Waste Pickers	72	280
	Female Waste Pickers	0	
Rooikraal (Focus Groups)	Male Waste Pickers	24	180
	Female Waste Pickers	2	
Weltevreden (Focus Groups)	Committee Members	3	500
	Male Waste Pickers	108	
	Female Waste Pickers	80	
TOTAL		**329**	**1180**

7.2.2 Demographics and working ways of the informal waste pickers

The research findings revealed that a substantial proportion of the participants (67 %) were male. Conversely, 33% of the participants were female, suggesting a notable gender disparity in the informal waste-picking sector. The data depicting the gender distribution of the respondents is illustrated in **Figure 38**.

The results of the research conducted by Mudavanhu (2020), Mkhize et al. (2014), and Schenck et al. (2012) on the demographics of waste pickers in other South African municipalities indicate that there are more male than female workers at landfill sites, which is consistent with the findings of this study.

The CoE ensures equal representation of both genders of the informal waste sector, which can be attributed to the absence of any gender-specific social or cultural barriers that impede

individuals from engaging in waste picking at three of the sites within the CoE. Kariuki et al. (2019).

The lack of female waste pickers at the Simmer & Jack landfill site is a result of a policy formulated by the waste pickers themselves, which does not allow females to work at the site. This policy has not been enforced or regulated by the landfill owner (CoE), who has an open policy on who can work and reclaim waste regardless of gender.

The historical dominance of family clans on the site has influenced Simmer & Jack's reclamation working policies. One member of the site committee at Simmer & Jack stated that the policy of excluding females from working at the site has been in place for a considerable amount of time.

"Acceptance and permission to work at the landfill site by any new male waste picker must be endorsed by or come through one of the existing family clan members at the landfill site. No male newcomer can work here without the acknowledgement of being part of a registered clan"

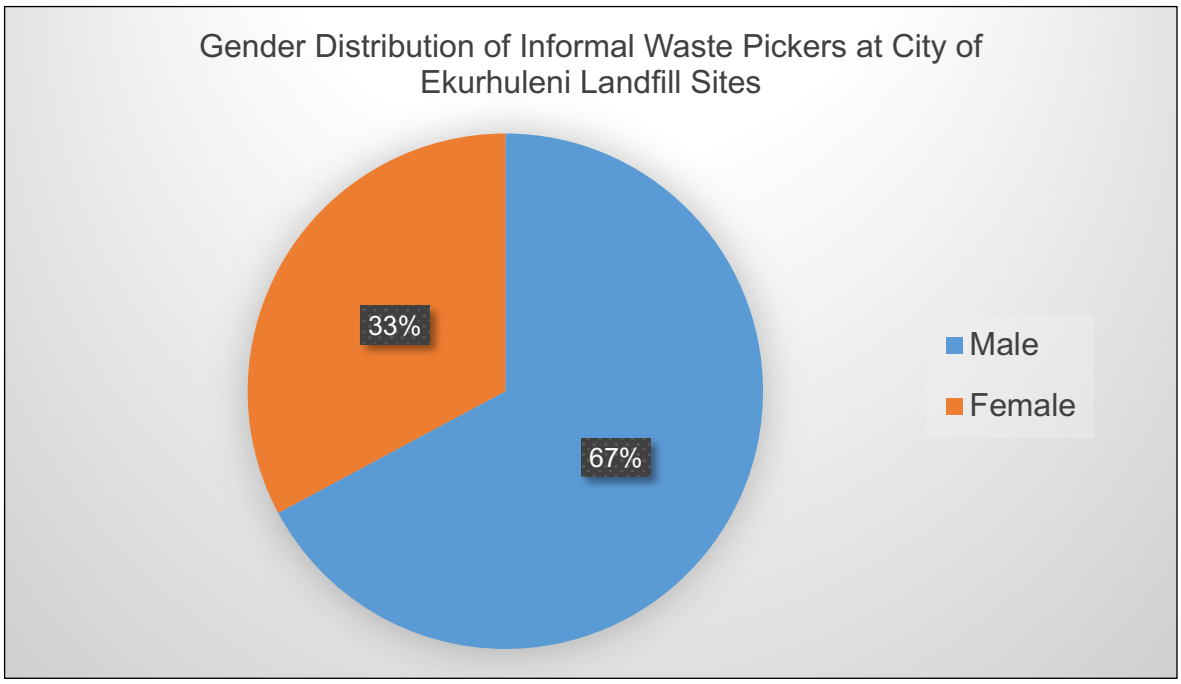

Figure 38: Gender Distribution of waste pickers at City of Ekurhuleni Landfill Sites

The researcher observed that across all landfill sites, there was no explicit policy or intervention for the integration of women or the protection of their rights. Gender disparity

issues, particularly regarding exclusion policies, were topics that most women were reluctant to address due to the fear of prejudice.

According to Samson et. al (2020), there is a notable scarcity of research examining gender and reclaiming in South Africa. Nevertheless, investigations conducted in various other nations have revealed that reclaiming work is significantly influenced by gender, as demonstrated by Dias and Ogonda (2015) and Dias et al. (2013).

The majority of female waste pickers, particularly at the Weltevreden site, frequently perceived their activities at the landfill sites as charitable work. Consequently, they were disinclined to appear demanding or vulnerable to eviction from the sites, as they were already allocated specific days and times of the week for reclamation, which was viewed as an acknowledgement of their presence. Most women expressed general appreciation for being permitted to salvage materials rather than focusing on their rights or making demands at the site.

As a result, no specific details regarding their direct areas of conflict with male counterparts were provided to the researcher.

In the case of Simmer & Jack were no women reclaimers were at all working. None of the working committee members the research interviewed were prepared to respond or address any questions related to women exclusion policies on the site.

The gender disparity evident at the CoE landfill sites, particularly at the Simmer & Jack site, is consistent with the findings of a study conducted in the Western Cape, South Africa by Mudavanhu (2020). According to Mudavanhu (2020), certain landfill sites only permitted male workers, whereas on sites where women had historically worked, the municipality made a decision restricted women's opportunities and excluded them from equal participation. However, this is not at the case at Simmer & Jack site.

According to Samson et. al (2020) and Samson (2013), during the 1990s and early 2000s in South Africa, men engaged in reclaiming activities employed physical aggression to exclude women from participating in work at various landfill sites throughout the Johannesburg city.

The research also sought to gain a deeper understanding of participants' attributes based on their age, as waste picking attracts individuals of all ages, as revealed by Kariuki et al. (2019).

Among the 329 participants included in the study, their ages ranged from 18 to > 45 years. Specifically, 12% belonged to the age group 18–25 years, 33% were between the ages of 26-35 years, 31% were aged 36–45 years, and 16% were aged > 45 years. Notably, 7% of the participants declined to disclose their age.

According to Kariuki et al. (2019), the age distribution among waste pickers in Nakuru and Kiambu, Kenya, reveals a significant representation of individuals between the ages of 18 and 50. However, the number of waste pickers over 50 years of age has declined sharply.

The outcomes, as discussed above and depicted in **Figure 39**, provide a comprehensive age-based distribution of the participants. It is essential to acknowledge that a significant proportion of waste pickers belong to an economically active age group and are dependent on support. The diverse age range in waste picking could be attributed to the high level of unemployment and the fact that waste picking does not require any prior experience. (Kariuki et al. 2019).

The researcher also verified that no individuals under the age of 18 years were identified as waste pickers at the sites. This is consistent with legislation in South Africa that prohibits children from collecting waste at landfill sites.

The findings of this study are consistent with those of Mothiba (2016) in the City of Tshwane and Medina (2000), where the same age group of 26 – 35 years constituted a larger proportion of waste pickers in landfills.

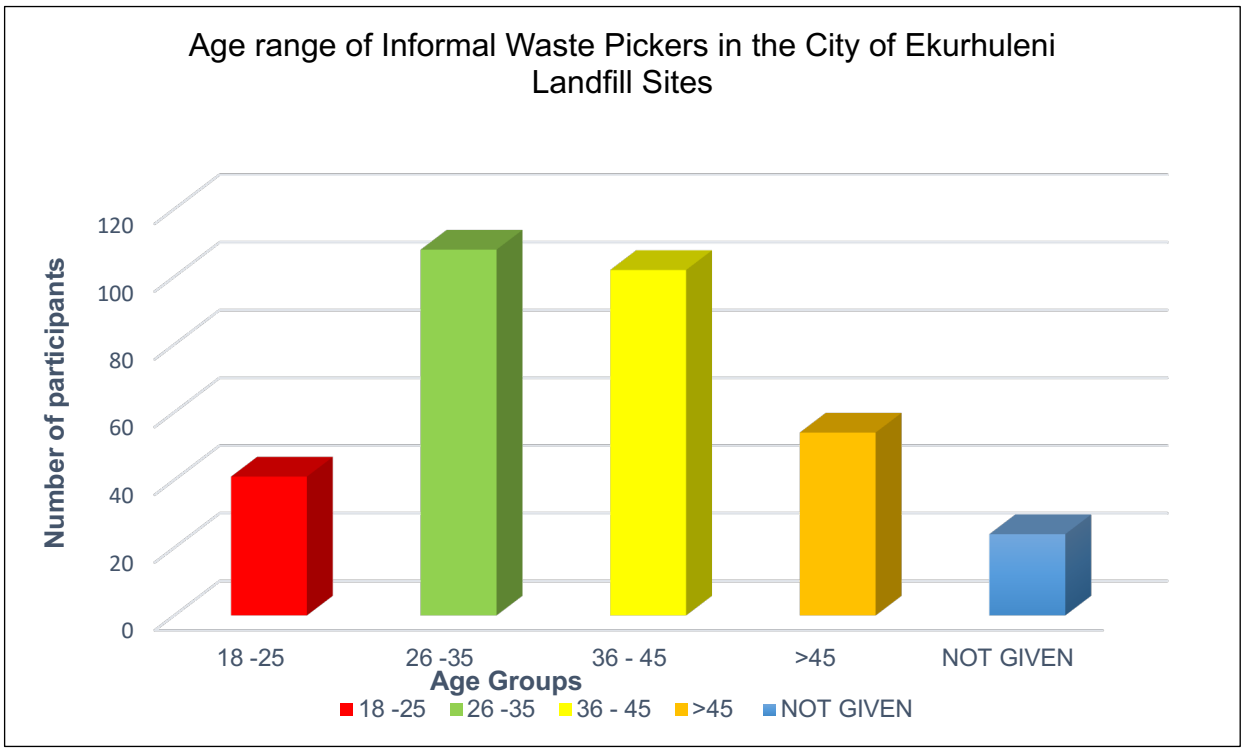

Figure 39: Age range of Informal Waste Pickers in the City of Ekurhuleni Landfill Sites

7.2.3 Who do the waste pickers work for?

Of the total sample of respondents from the research population, 99% indicated that they engaged in independent work at landfill sites for material recovery. This finding suggests a scarcity of formal employment opportunities in Ekurhuleni, where the unemployment rate is 41.9%. This rate is higher than the national and provincial averages, and surpasses those of all eight metropolitan municipalities, as reported in the City of Ekurhuleni's Budget Speech 2023. Conversely, only 1% of those surveyed indicated that they were employed by a dealer or a recycler.

Mkhize et. al. (2014) found comparable figures in their investigation of the informal economy in Durban, where a large majority of waste pickers (99%) operated as own-account workers and generated employment, while only 1% reported having at least one paid employee working for them. According to Viljoen (2014), the barriers to entering informal waste picking are considered to be low, and no start-up capital is required; thus, the majority of unemployed people find it easy to enter Schenck et al. (2016).

Notably, none of the respondents in the CoE belonged to or were employed by any formalised waste picker association which could suggest that the informal waste sector in the CoE lacks

strong organizational structures or that there is a lack of established or formal networks or support platforms to engage with the municipality.

7.2.4 Waste pickers working schedule on landfill sites

In addition to the pressing need for continuous income, the number of days and hours that waste pickers work plays a crucial role in determining their access to waste. Given that individuals working in the informal sector often have flexible working hours and days, this factor significantly influences their ability to collect waste (Mudavanhu, 2020).

The study revealed that the schedules of waste pickers were irregular, with some individuals working only a few days each week, whereas others were employed every day. It was observed that 60% of the waste pickers worked for less than five days each week, while 26% worked between five and six days. The remaining 14% worked for a full seven-day week. This is illustrated in **Figure 40**.

The variation in working days for waste pickers at different landfill sites was attributed to site-specific agreement. At the Rietfontein, Rooikraal, and Simmer & Jack sites, waste pickers were allowed on site any day that the reclaimer was working, as long as they adhered to the demarcated area and time slot (applicable for the Rooikraal site only) specified by the CoE and site operator. In contrast, at the Weltevreden landfill site, owing to the large number of waste pickers, the working days were split and arranged according to gender. Men work from Mondays to Thursdays, whereas women work from Fridays to Sundays. On each working day of the week, the working groups were further categorised into day shifts and specific allocated times. The split in working days between male and female waste pickers was said to be attributed to a number of factors. Firstly, there was a general acceptance and acknowledgement by the waste picker committee at Weltevreden landfill site that females were vulnerable workers and equally entitled to work on the landfill sites to earn a living. Secondly, the ratios of females to male waste pickers are generally at 1:5 ratio on all sites, thus prompting their further vulnerable to physical harassment and over powering.

One female waste picker stated an experience were they were previously over powered by three male waste pickers and all the recoverables were taken from them by force, and no one could assist or stop the incident. These incidents continued to occur which then prompted intervention by the waste picker committee for the dedication of specific days for female waste pickers to ensure their safety.

Another female waste pickers indicated reclaiming materials on weekdays was ideal for her due to the weekly responsible she has for ensuring her kids and family are looked after as they go to school or work. During the weekend, it allowed her to focus on material reclamation as the kids were at home. This founding is in support to Kariuki et al. (2019) who discovered that the working days of waste pickers in Kenya were influenced by gender roles, with women working fewer days because of their additional responsibilities of caring for their families at home.

Research by Mokobane (2016) additionally revealed that waste pickers have autonomy over their work hours. This flexibility is particularly advantageous for women, who often bear the primary responsibility for childcare. Many female reclaimers appreciate the ability to manage their own schedules, allowing them to align their work with their children's school hours. Moreover, this arrangement enables them to promptly address any health issues or emergencies involving their children, such as accompanying them to medical appointments when necessary, (Dias et. al, 2015).

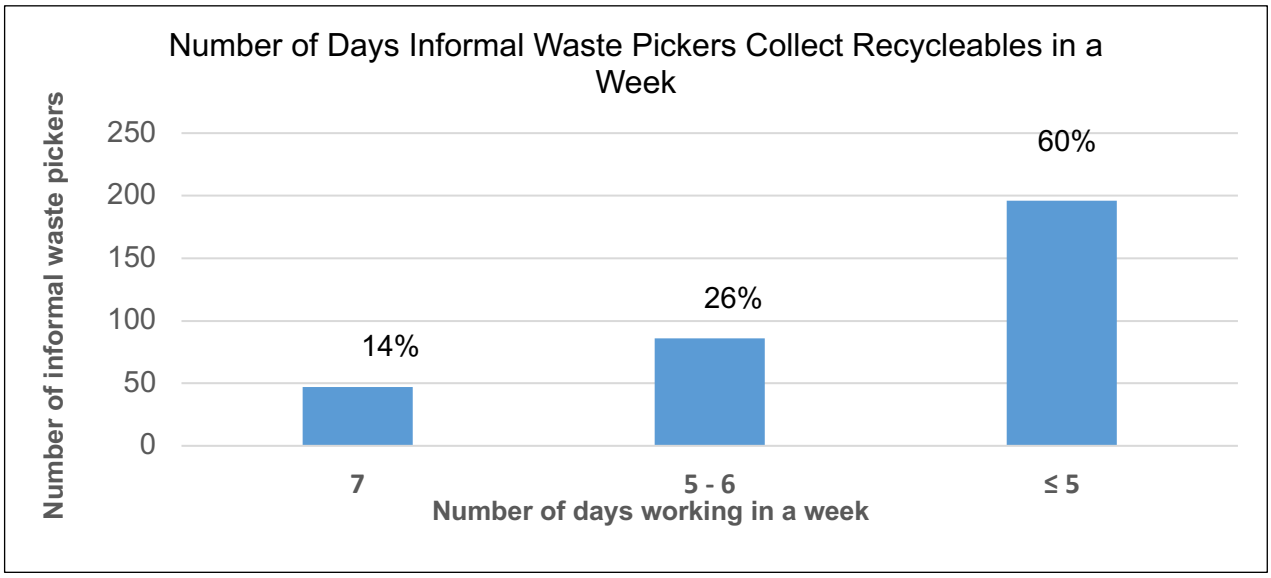

Figure 40: Number of days informal waste pickers collect recyclables in a week

7.2.5 Working years of waste pickers

People often relocate from rural regions to urban areas with the expectation of finding employment and improving their standard of living; however, reality may not always align with these expectations Mvuyane (2018). The majority of South Africa's informal sector consists of surviving workers, who entered the sector as a last resort to generate income, in the absence of formal employment Yu et al., (2020).

During the study, the researcher sought to ascertain the collective years of experience of waste pickers in recovering waste. The study revealed that approximately 60% of the respondents had been engaging in this activity at landfill sites for 0–10 years, while 27% had been doing so for 11-15 years. The remaining 13% of respondents had accumulated 16–20 years of experience in waste recovery,(**Table 12**).

Table 12: Number of years informal waste pickers have been reclaiming materials on city of Ekurhuleni landfill sites

Number of years working in material reclamation on landfill sites	Respondent
0 - 10 years	60%
11 - 15 years	27%
16 - 20 years	13%

It is common to find the same waste pickers at various landfill sites or buyback centres in a particular area, as per Schenck et al. (2011b). This is particularly relevant for comprehending the dynamics of integration and formalisation between waste pickers and the municipality, which is a crucial aspect to consider.

The study found that a significant proportion of respondents (99 %) worked at a single landfill site. Conversely, only 1% had transferred from other City of Ekurhuleni landfill site during their working years, and no respondents reported moving from areas outside the City of Ekurhuleni landfill sites during the same period, (**Figure 41**). These findings offer valuable insights into the working conditions of waste pickers and their intentions to remain in one place and establish long-term relationships with municipal officials.

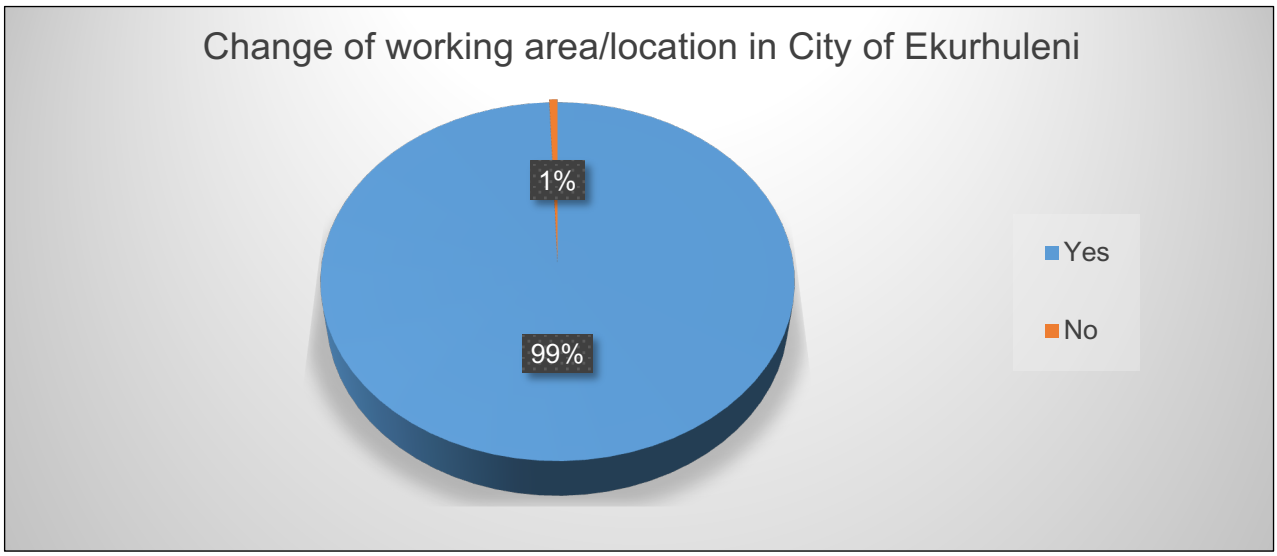

Figure 41: Informal Waste Pickers Change of working area/location in City of Ekurhuleni

7.3 Quantifying waste quantities disposed at landfill sites over a 6-year period and later recovered by the informal waste pickers

One of the primary goals of South Africa's National Waste Management Strategy (NWMS) 2020 is to reduce the quantity of waste sent to landfills. Achieving this goal involves fostering a secondary resource economy that concentrates on waste processing, with an emphasis on recycling materials such as paper, glass, plastics, and metals. South Africa's strategy for diverting waste from landfills is a key component of the overall waste management approach (NWMS 2020).

This section presents a comparative analysis of the research objective which aims to better quantify the contribution of the informal waste sector by assessing and quantifying waste types and tonnages disposed of at the city of Ekurhuleni-owned landfill sites over a 6-year period (2015 – 2021) and later recovered by informal waste pickers.

The respondents interviewed Ekurhuleni personnel and service providers who work and support operations at various landfill sites.

7.3.1 All five landfill sites waste disposed over the period of 2015 to 2021

The researcher first evaluated the complete waste streams received at all five operational landfill sites during the study period to gain insight into the distribution of waste received at each site. The results indicated that the total waste streams averaged approximately 100,000

tons per year, with the highest year being 2018, when a total of 215,000 tons were disposed of, followed by 2017, with 160,000 tons of waste disposed, and 2021, which had the third largest tons disposed at 145,000 tons per year, (**Figure 42**).

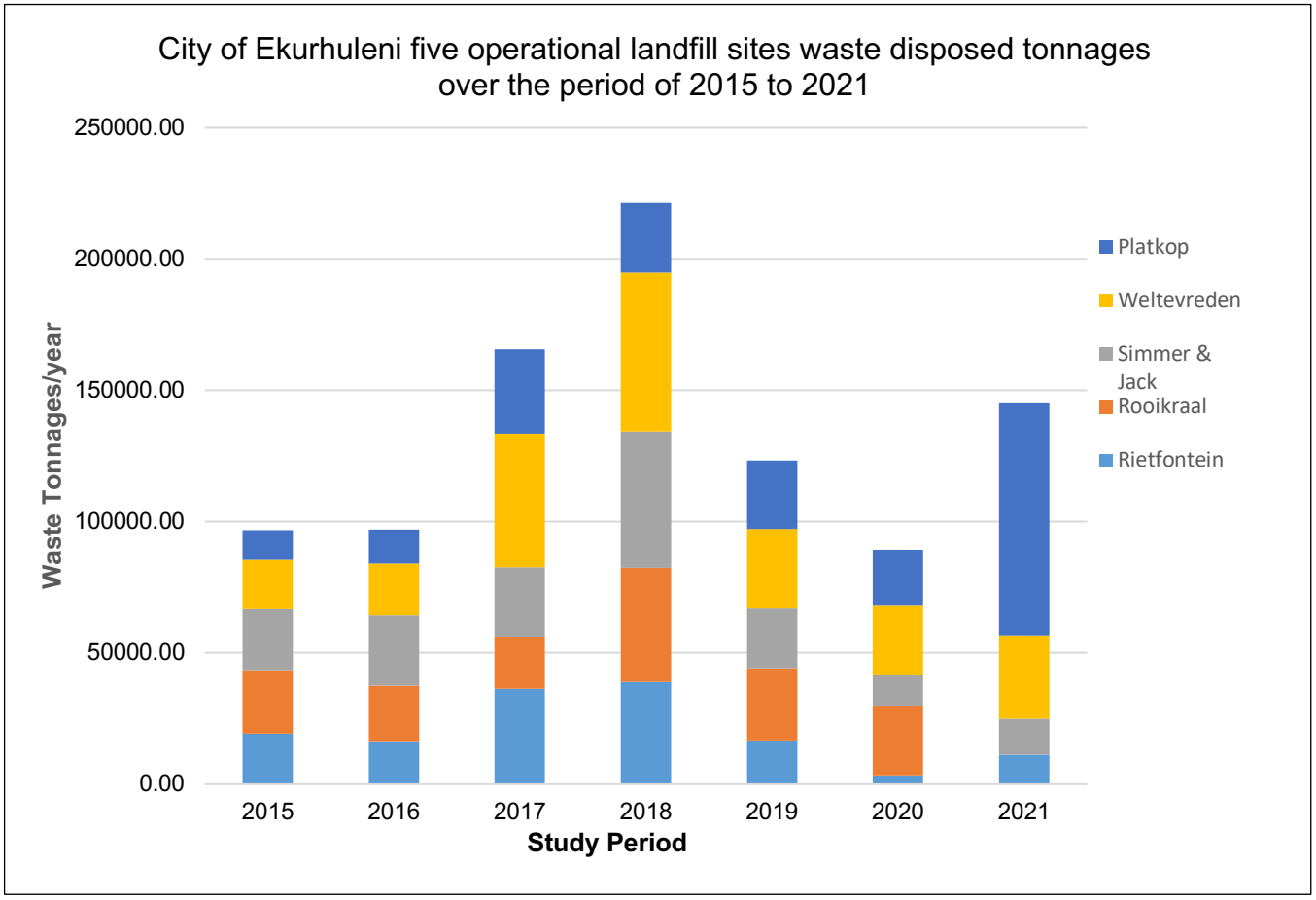

Figure 42: City of Ekurhuleni five operational landfill sites total waste disposed tonnages over the period of 2015 to 2021

The distribution of waste tonnage received at the five CoE landfill sites during the research period was as follows: 25% was disposed at Weltevreden, 23% at Platkop, 18% at Simmer & Jack, and 17% at Rooikraal and Rietfontein landfill sites, (**Figure 43**).

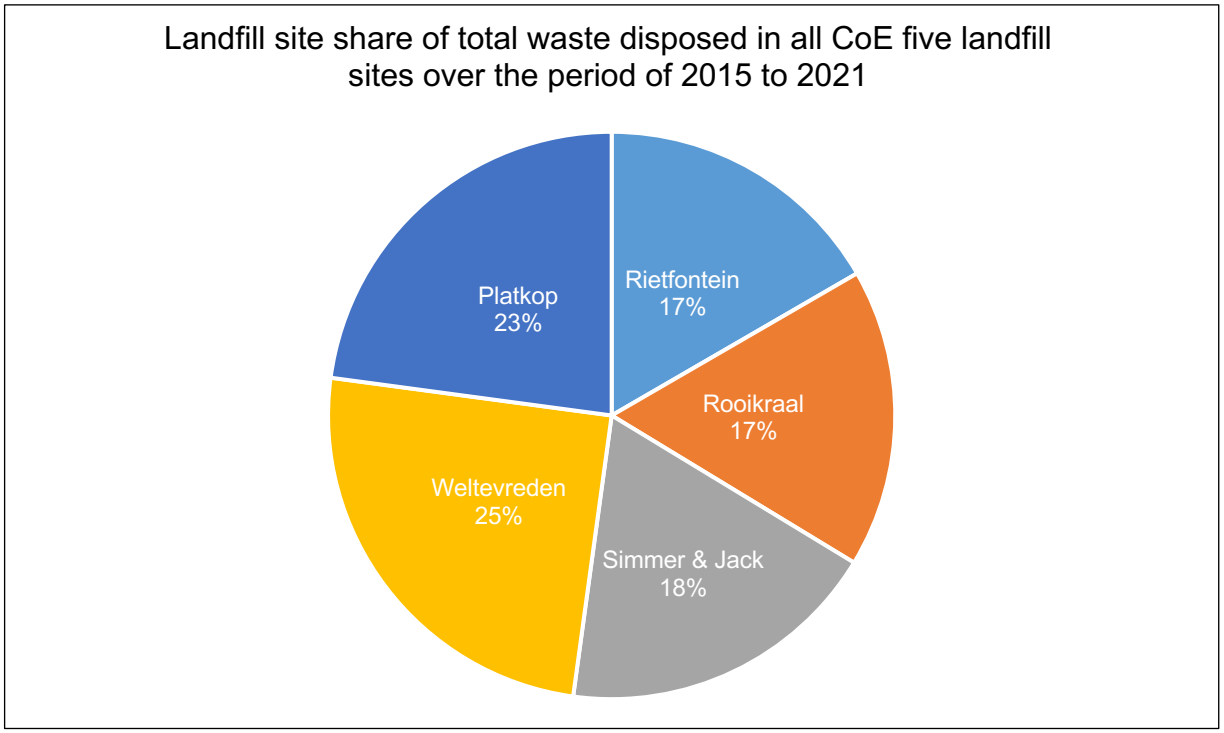

Figure 43: Landfill site share of total waste disposed in all City of Ekurhuleni five landfill sites between 2015 and 2021

7.3.2 CoE four landfill sites permitting waste pickers total waste disposed over the period of 2015 to 2021

7.3.2.1 Total waste tonnages disposed from the period 2015 to 2021

To achieve the research objective of quantifying the types and tonnages of waste disposed of at city-owned landfill sites in Ekurhuleni and later recovered by informal waste pickers, it was essential to focus on landfill sites that permit and have waste picker activities. The Platkop landfill site was excluded because it does not allow waste pickers owing to the acceptance of asbestos waste at that particular site.

The results indicated that the total waste streams averaged approximately 95,000 tons per year over the study period, with the highest year being 2018, when a total of approximately 195,000 tons were disposed, followed by 2017, with 133,000 tons of waste disposed, and 2021, which had the third largest tonnage disposed at 97,000 tons per year,(**Figure 44**). The waste tonnage in 2018 was found to be abnormally high. This corresponded with a record high recycling rate in 2017/2018, where there was a significant increase in the number of recyclables obtained from landfills and other post-consumer sources, with 74% being the largest quantity obtained, as reported by Godfrey (2021).

In line with the Green Cape (2020) report, there was a substantial rise in the number of recyclers established in South Africa throughout the year. According to the South African Plastics Recycling Organization (SAPRO), 212 recyclers operated in South Africa in 2017. This number increased to 300 in 2018, an increase of 42%. A significant portion of this increase was observed in Gauteng, where an additional 52 recyclers joined the existing 101 recyclers. (Green Cape Waste MIR, 2020)

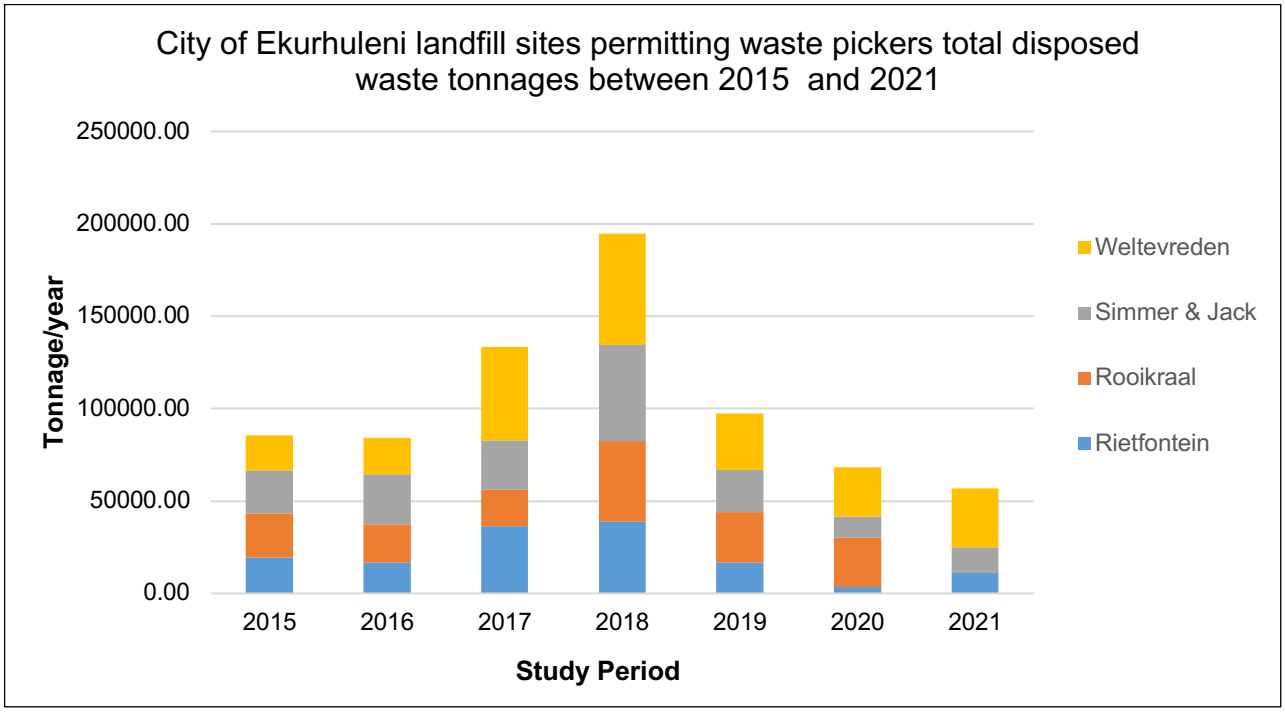

Figure 44: City of Ekurhuleni landfill sites permitting waste pickers total disposed waste tonnages between 2015 and 2021

The distribution of waste tonnage received at the four CoE landfill sites permitting waste pickers was as follows: 32% was disposed of at Weltevreden, 24% at Simmer & Jack, and 22% at Rooikraal and Rietfontein landfill sites, (**Figure 45**).

This demonstrates that the number of waste pickers at a CoE landfill site is directly linked to the volume of waste it receives. Weltevreden has the highest disposed waste tonnage, corresponding to the highest population of waste pickers. The other three sites have a fairly equal share of waste disposed, corresponding to relatively similar waste picker population numbers.

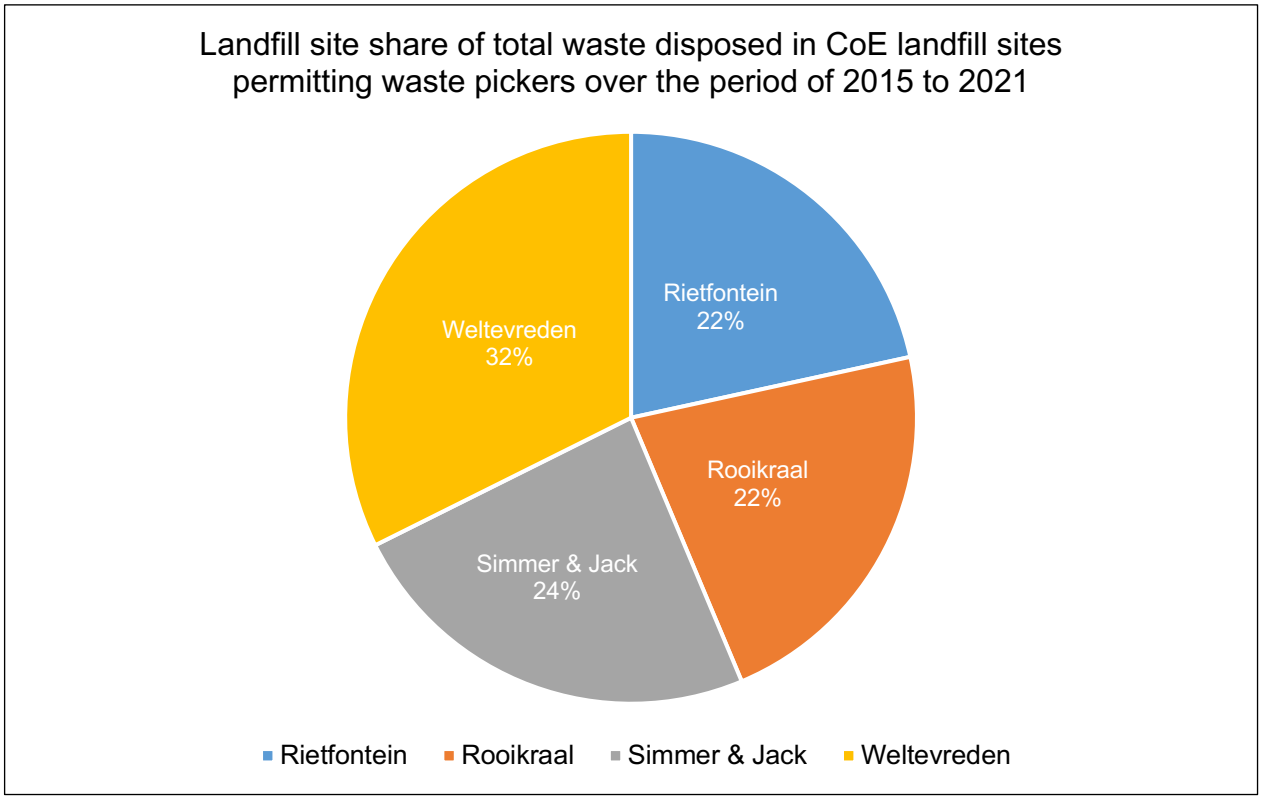

Figure 45: Landfill site share of total waste disposed in CoE landfill sites permitting waste pickers over the period of 2015 to 2021

7.3.2.2 Waste types and total material recovered by waste pickers over the period of 2015 to 2021

The top five categories of waste received at CoE landfill sites that permit waste reclamation activities are general domestic refuse (51.61 %), mixed waste (consisting of soil, paper, and rubble) at 22.51%, soil at 8.15%, industrial refuse at 7.47%, clean building rubble at 7.41%, and remaining waste consisting of delisted and safe disposal waste at 2.85%.

A total of 0.57% of the total waste disposed was recovered and recycled at landfill sites by waste pickers, (**Table 13**).

Table 13: CoE landfill site waste types, quantities and total material recovered by waste pickers for the period 2015 to 2021

Waste Category	Total tonnage (2015 - 2021)	Percentage of the total
Ash cover material	50,062	0.70%
Clean building rubble (less than 300mm)	522,705	7.29%
Clean building rubble (more than 300mm)	8,765	0.12%
Contractors clean compost/garden refuse	43,705	0.61%
Crushed aggregate removal	3,901	0.05%
Delisted liquids (trench & cover)	47	0.00%
Delisted sludge (trench & cover)	1,072	0.01%
Delisted solids (less than 300mm diameter)	35,713	0.50%
General public clean compost/garden refuse	21,371	0.30%
General domestic refuse	3,701,795	51.61%
Industrial refuse	536,008	7.47%
Mixed waste (Soil, paper, rubble etc)	1,615,048	22.51%
No longer in use	32	0.00%
Paper pulp exceeding 40% moisture	13	0.00%
Recycling/recoverable material	**41,173**	**0.57%**
Safe disposal products: crushed/buried	371	0.01%
Soil (usable as cover material)	584,996	8.15%
Treated liquid/sludge contaminated food outside	6,727	0.09%
Sub Total	7 173 502	
Uncategorised Waste	90	0.00
Total	**7 173 592**	

The percentage of waste disposed of was recovered and recycled on the landfill sites, as measured and captured by the landfill site weighbridge systems, and was 0.57% (**Table 13**). This figure has been attributed to inconsistencies in the capture and recording of the recoverable quantities of waste by the CoE at the landfill sites, as noted by the researcher and will be discussed in detail later. According to Seabi (2022), landfill waste reclaimers succeeded in lowering waste at disposal sites by 15%, which was more significant than the reduction observed at the CoE.

A weighbridge operator respondent at the Simmer & Jack site stated the following:

"When the weighbridge system is offline or down, we are forced to capture all tonnages in and out manually. In this instances we do not always prioritise the capturing of recyclables

off site, as priority when the system is back on line to get re-enter all incoming waste for month end billing purposes"

The researcher was particularly interested in the methods used to weigh recyclables on-site at the working face, as well as the mode of transport employed by waste pickers to transport the recyclables off-site to buyers..

The study found that 68% of respondents used mobile scales on-site to weigh recyclables with their buyers, while 23% used volumetric bags. Waste pickers use only volumetric bags at the Simmer & Jack site, where mobile scales are not allowed (**Figure 46**).. These bags measure the volume of recyclables and convert them into weights; however, they may not be as accurate as mobile scales. Only 9% of the respondents reported using the landfill weighbridge, suggesting that it is not a preferred option among recyclers, (**Figure 46**).

A weighbridge operator respondent at the Rietfontein site stated the following.

"Our focus is to capture the incoming trucks of waste as quickly as possible to avoid a backlog, as we get pressure from the depot managers to ensure the turnaround times for waste disposal trucks at thelandfill sites is as minimal as possible. In most cases, we will focus on capturing incoming trucks and mostly we allow recyclable vehicles to exit without recording their weight when we are busy"

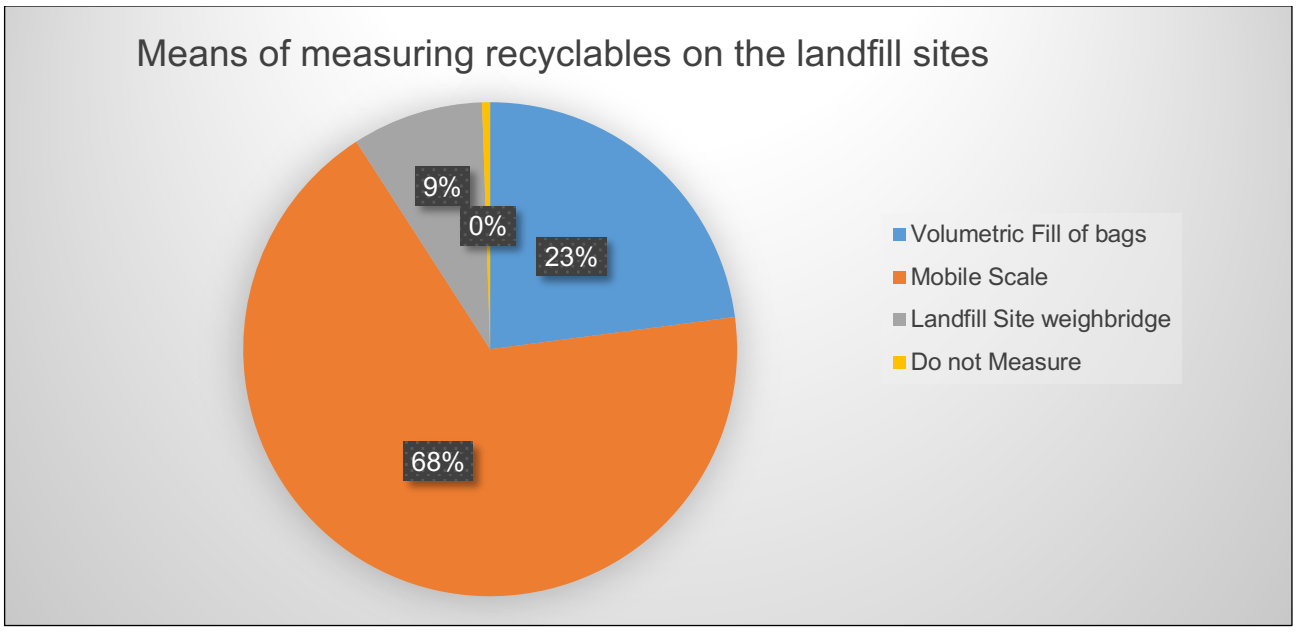

Figure 46: Means of measuring recyclables on the landfill sites prior to transporting it off site

The research demonstrated that all participants measured their recyclables, demonstrating a dedication to their accuracy. The use of mobile scales was preferred by large-scale recyclers, as they offer precise measurements and are more efficient than other techniques. However, informal waste pickers in Simmer & Jack were compelled to use volumetric bags because mobile scales were prohibited on the site.

Regarding the transportation of recyclables from the landfill site to end buyers, the study revealed that 88% of recyclables were transported directly to the buyer, while 12% were collected from informal waste pickers at the landfill sites by the respective buyers, (**Figure 47)**.

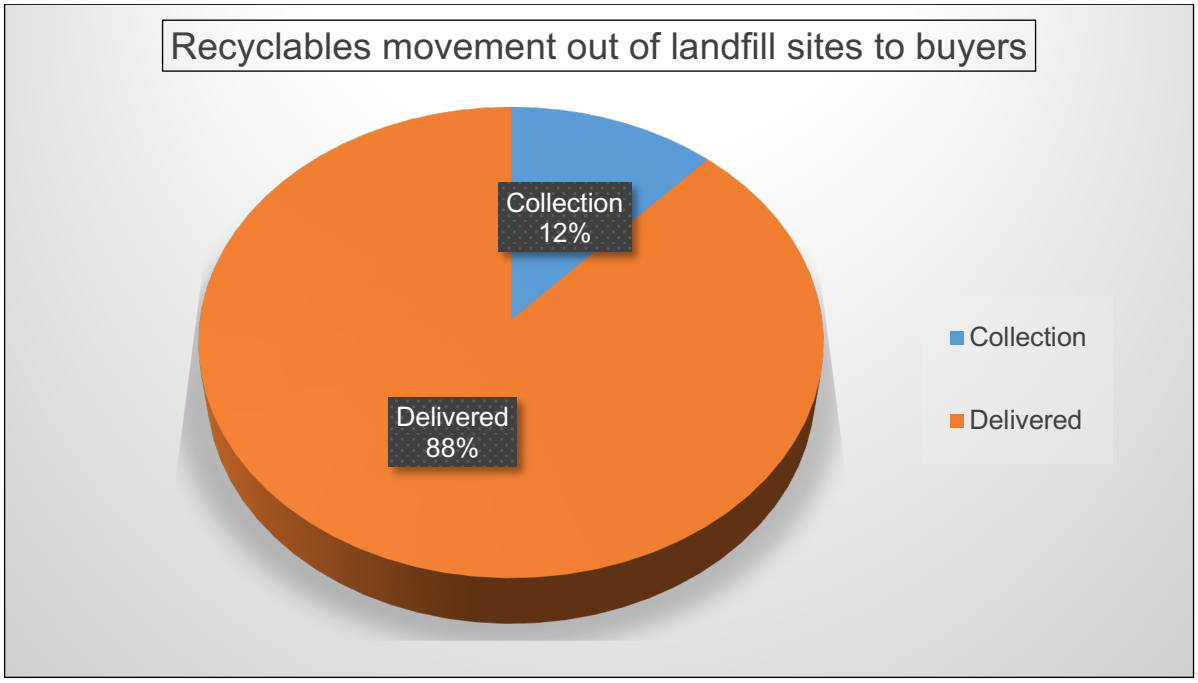

Figure 47: Recyclables movement out of landfill sites to end buyers

Carrying recyclables on foot was the preferred method of transporting them off-site, with 67% of the respondents indicating their use (**Figure 48**). This method is favoured because of its low cost and flexibility. Three of the respondents at the Rietfontein landfill site stated the following.

"We would appreciate if the City of Ekurhuleni catered access for us in the form of a dedicated pedestrian gate closer to the working face to take our recyclables off site, as the main entrance gate is far".

The landfill site operator at Weltevreden stated the following in relation to unathorised access on-site:

"Our biggest challenge on site is that the palisade fence is broken numerous times in a month even after we repair it, as the waste pickers use it as a form of access on site and also to take recyclables off site"

However, 25% of the respondents were found to use a car or truck as a mode of transport (**Figure 48**), suggesting that it is still a popular option for larger quantities of recyclables.

In one focus group, one respondent at the Rietfontein site stated the following.

"I cannot always afford to take my recyclables off site, as my health is not good. I therefore make use of the Remade/Mpact establishment on site, where a buyer comes several times in a week, and they have made provision of a permanent skip on site"

The remaining 8% of the respondents used a trolley cart, indicating that it is a less common but still viable transportation method, (**Figure 48**).

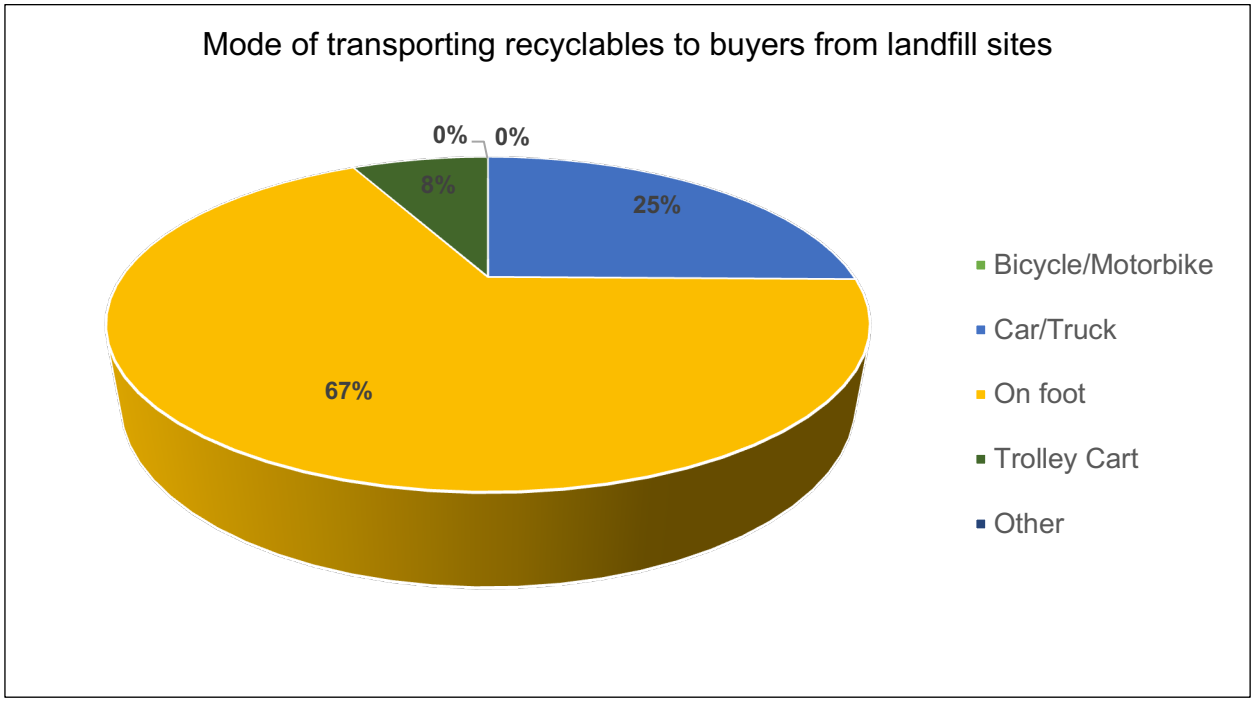

Figure 48: Mode of transporting recyclables to buyers from landfill sites

7.3.2.3 Conclusion of findings

This section provides valuable insights into the 0.57% (**Table 13**) quantity of waste recovered and recycled at landfill sites by waste pickers, as measured and captured by the CoE landfill site weighbridge system. This can be attributed to a number of reasons.

Firstly, the majority of waste pickers work independently, with up to 99% operating on their own. This is consistent with the findings presented in Section 7.2.3. It can be seen that these individuals make their own decisions regarding how to transport the recyclables they collect, with 88% of the recyclables materials being delivered and sold off-site. The most common mode of transport for these materials is by foot, with 67% of waste pickers using this method. This implies that these decisions are not made through collective bargaining or formalised structures, but rather by individuals. In most cases, materials are taken through broken palisade fences rather than through the main gates or landfill site weighbridge system (accounting for only 9%).

The data in Figure 47 further reveals that a significant proportion of waste pickers (88%) reported delivering recyclables to buyers rather than waiting for them to visit the landfill site. This suggests that the final sale point is not always located at a landfill site. As a result, weighing and measuring recyclables at landfill sites may not be a priority for waste pickers. Instead, waste pickers concentrate on collecting as many recyclables as possible, and weighing them at their final point of sale outside the landfill site.

Only 12% of the waste pickers who operate at CoE landfill facilities treat the disposal and work areas at landfill sites as the point of transaction for determining the quantity of recyclable materials and concluding the sale to their buyers. This procedure is typically performed using a mobile scale or volumetric bags, as demonstrated at the Simmer & Jack site. Only 25% of the waste pickers were found to use a car or truck as a mode of transport of recyclables from the site, usually by their buyers, and only 9% acknowledged using the landfill site weigh bridge to measure recycles. This demonstrates that as many as 91% of waste pickers do not measure their recyclables from landfill sites through the weighbridges and that CoE does not have other infrastructure provisions to quantify recyclables other than by car/truck through the weighbridge. Quantifying recyclables using trolleys or by foot is not possible in landfill site systems.

Of the 25% that utilised vehicles as a means to transport recyclables off site, the study found that it is not mandatory for waste recyclable vehicles at all CoE landfill sites to stop at the weighbridge, nor is it enforced upon exiting the site with recyclables. During the researcher's observations at Weltevreden and Rietfontein landfill sites, very few vehicles carrying recyclables stopped at the weighbridge for tonnage capture. In contrast, the Simmer & Jack

site demonstrated more stringent enforcement of measuring recyclables through the weighbridge, as no mobile scales were permitted on site.

Finally, the quantification of recyclable materials recovered by waste collectors utilising a weighbridge is not a primary objective for landfill weighbridge operators at the majority of CoE landfill sites. Rather, these operators' primary focus is on documenting the arrival of trucks and other vehicles that generate revenue for the municipality through disposal fees.

7.4 Key stakeholders in the City of Ekurhuleni waste value chain that are linked to waste picker actitivites

7.4.1 Number of waste pickers belonging to any formalised working group or association.

This study aimed to pinpoint the primary stakeholders that are connected with waste picker activities at CoE operational landfill sites. The study identified four key stakeholders directly linked to waste reclamation activities: landfill site-specific organised groups, buyers (middlemen), buyback or recycling centres, and the City of Ekurhuleni's site waste reclaimer committee (**Figure 49**).

The study indicated that the vast majority of waste pickers (approximately 91% of the respondents) belonged to an informal group that operates within a specific landfill site. These groups comprise a few members who act as representatives of the rest of the waste pickers on the site. The selection of these representatives is carried out solely by waste pickers, without adhering to any formal structure. This informality was observed across all landfill sites. The committees established at each site provide a platform for waste pickers to engage with the CoE and site operator, and a dedicated register of waste pickers is maintained and updated regularly at each site. Waste pickers utilise this structure to collaborate effectively, share resources and space, and offer mutual support.

This study highlighted the importance of these groups in fostering a sense of community and support for waste pickers, which is crucial for their well-being and productivity. This was particularly evident at the Rietfontein landfill site, where waste pickers had formed a financial support group that functioned like an insurance policy. Members contributed daily or weekly, and were guaranteed income on the days they did not work or when they experienced a family crisis. These funds were used to cover funeral costs, demonstrating the significance of these groups in providing financial stability and support for other waste pickers. This is similar to initiatives carried out by the network in Tshwane, as reported by Samson (2010).

While a significant proportion of the respondents were registered with site associations and groups, only 7% reported that they were not registered with any such organisation. This group of waste pickers may be more vulnerable and lack access to the resources and support provided by formal groups.

The research also revealed that 2% of the participants reported being enrolled in the city of Ekurhuleni's informal structure of waste pickers through various programs, and none of them were registered or affiliated with producer-responsibility organisations.

This study highlights the importance of allocating more resources to support informal waste pickers who are not registered with any association, cooperative, or integration program. This measure could prove to be highly beneficial, as the studies conducted by Velis et al. (2012), Wilson et al. (2006) and Samson et al. (2020) demonstrated that democratic recovery organisations play a vital role in facilitating the participation of reclaimers in the planning and execution of integration programs.

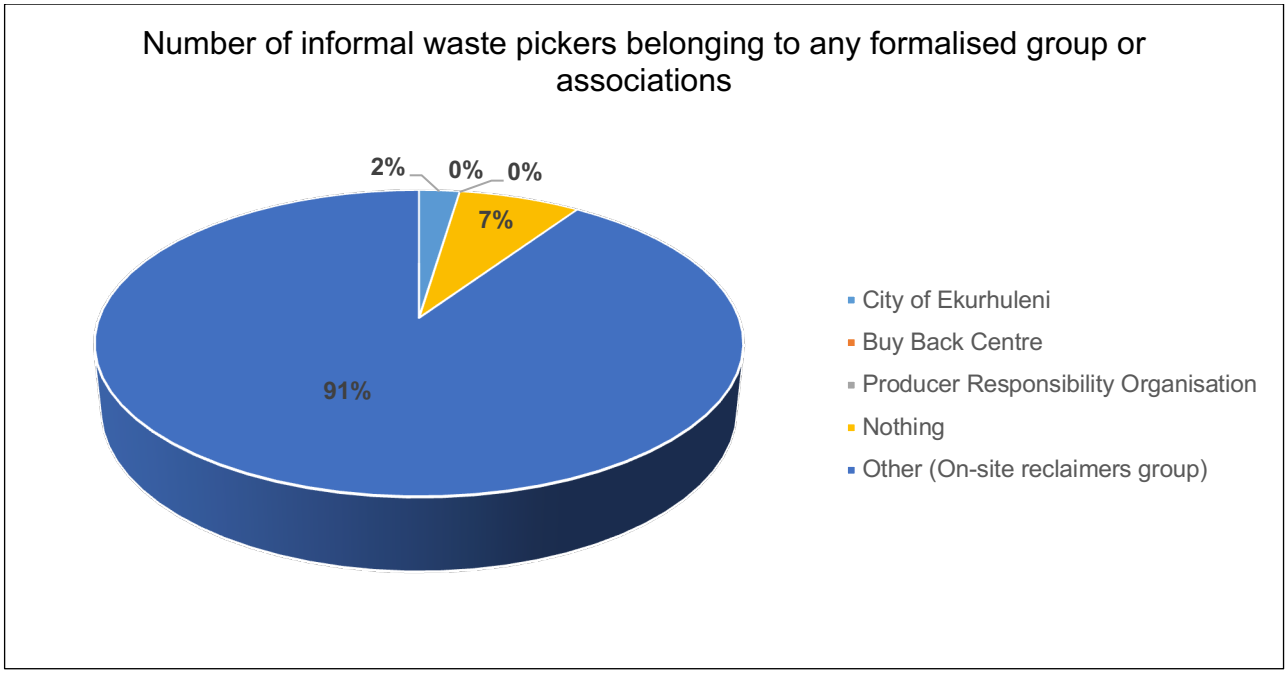

Figure 49: Number of informal wastes belonging to any formalised working group or association.

7.4.2 Who do the informal waste pickers sell the recyclables to?

The absence of a material recovery facility in any of the CoE landfill sites or within the CoE poses extreme challenges in terms of how the recyclables are consolidated by waste pickers prior to being sold. A study by Mkhize et al. (2014) revealed that the provision of a material recovery facility offers waste pickers a more practical means of selling recyclables and provides additional safeguards against police harassment, as they are no longer required to accumulate materials on roadways while transporting them to buyers.

This study examined the link between informal waste pickers and purchasers of materials recovered from landfill sites. The study revealed that while there were no formal collaborations between these waste pickers and buyers, intermediaries (middlemen) held a crucial role in acquiring the majority of recyclables from waste collectors at the landfill sites or point of sale outside of the landfill site.

The study found that a substantial proportion of participants (67 %) sold their recyclables to middlemen (**Figure 50**). In certain instances, these middlemen possessed the necessary transportation facilities to collect materials from waste pickers and transport them to the buyback centres (ultimate buyers). However, in most instances, waste pickers deliver materials directly to the middlemen. This finding underscores the significance of middlemen in the recycling industry and their role in establishing a link between informal waste pickers and buyback centres, facilitating the removal of recyclables from CoE landfill sites.

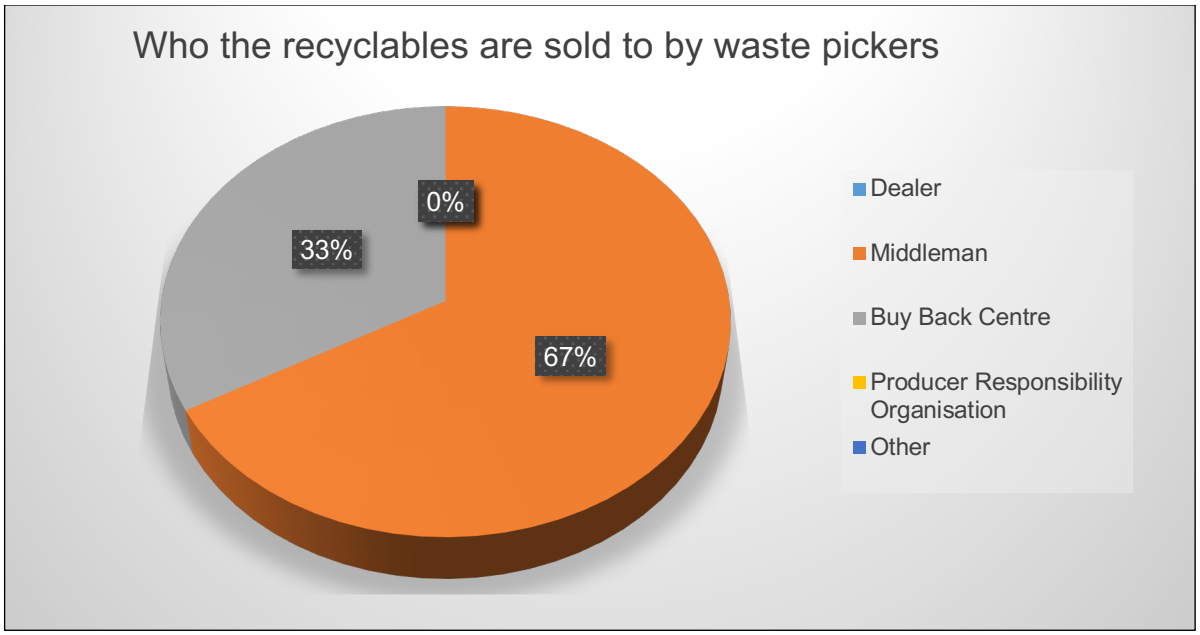

Figure 50: Who the recyclables are sold to by informal waste pickers

The study revealed that a significant proportion of respondents (33 %) sold their recyclables directly to buyback and recycling centres, mostly Remade/Mpact. None of the waste pickers (0%) had direct links to producer responsibility organisations.

In accordance with a study conducted by Schenck et al. (2019), the majority of waste pickers (92%) depended on buy-back centres to sell their recyclable waste, whereas 8% sold their waste products to individual buyers. These outcomes are consistent with those observed for the CoE.

Remade/Mpact was specifically mentioned in three of the four sites, namely Rietfontein, Rooikraal, and Simmer & Jack, as the preferred buyer of recyclables by waste pickers. Remade/Mpact has installed permanent skip bins for collecting recyclables at Rooikraal and Rietfontein, where buyers weigh and procure recyclables directly from waste pickers. Once the skip bins are full, they are transported off-site for processing at the reade/mpact facilities. This typically saves the waste pickers' time in transporting material off site and is able to concretrate on recovering as much as possible.

The Remade/Mpact assistant plant operator at the Springs recycling plant stated the following.

"We have generally a buyer/seller relationship with the waste pickers in City of Ekurhuleni. The informal waste sector contributes a significant portion of the volume of recyclables we process on our Springs and Germiston premises. On some of the landfill sites, we have provided permanent skip bins that we collect every week, and the measurement of the tonnage of recyclables is through the weighbridge. The existing cooperation with City of Ekurhuleni and us is that they have made provision of free land to us where we have set up collection points, and the general public and waste pickers can bring the material to us for purchasing, however these collections are outside of the landfill sites"

This suggests the presence of an extensive network of buyback centres within the city, which offers a convenient and accessible avenue for landfill waste pickers to sell recyclable materials. The results of this study offer important insights into the recycling industry in the city of Ekurhuleni, emphasising the pivotal role of middlemen and the significance of a well-established buyback centre network.

This finding highlights the need for increased awareness among stakeholders, particularly waste pickers, regarding the role of these organisations in reclamation activities or the possibility that these organisations have not yet fully integrated into the waste value chain of the city.

7.5 The challenges faced by waste pickers on landfill sites related to the amount of recyclables they can recover.

Waste pickers face numerous challenges that extend beyond their workplace. They frequently encounter prejudice and low social standing due to their occupation, which is perceived as undignified; as a result, they often work in difficult conditions (Ralfe, 2007; Mkhize et. al., (2014)). The researcher aimed to explore the difficulties and potential faced by waste pickers at landfill sites in Ekurhuleni. The primary objective was to identify the challenges and obstacles that waste pickers encounter when gathering recyclable materials from CoE landfill sites, which have an impact on the quantity of recyclables that can be recovered.

The challenges encountered by waste pickers were consistent across all landfill sites where the study was conducted and are presented in **Figure 51** and **Figure 52**.

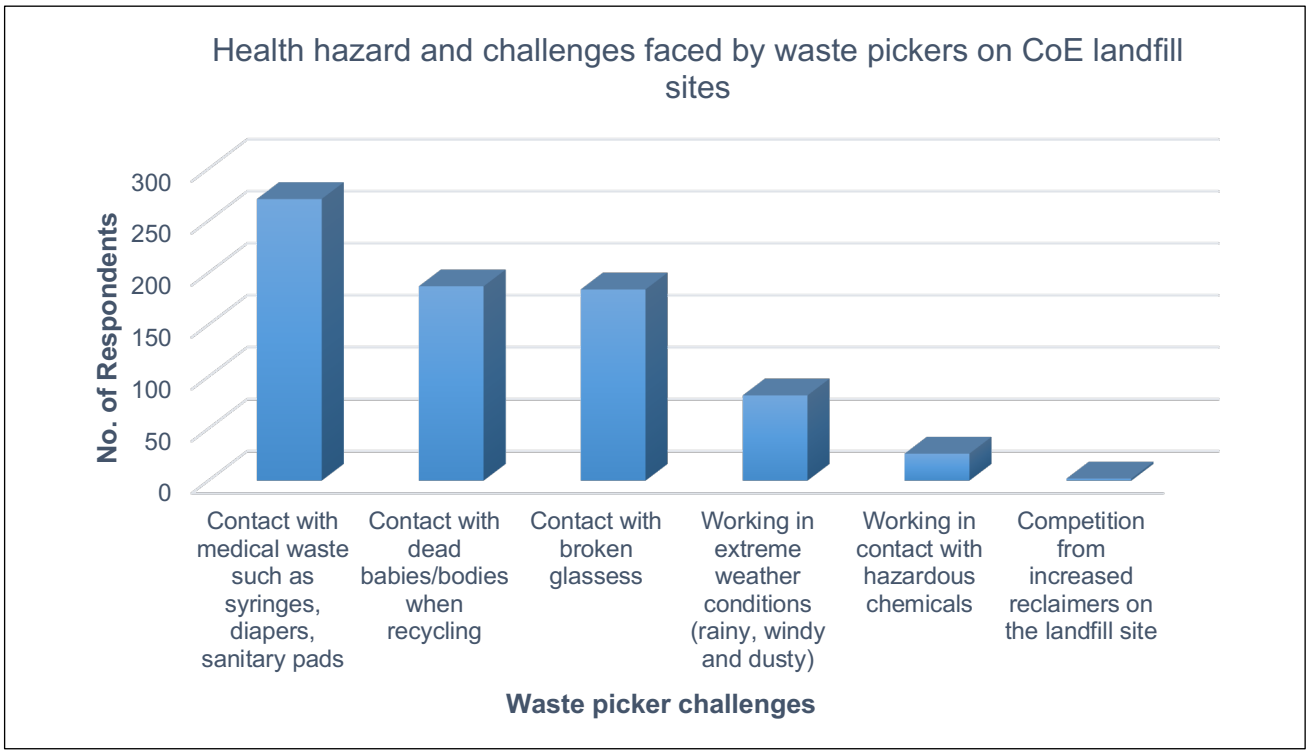

Figure 51: Health hazard and challenges faced by waste pickers on CoE landfill sites

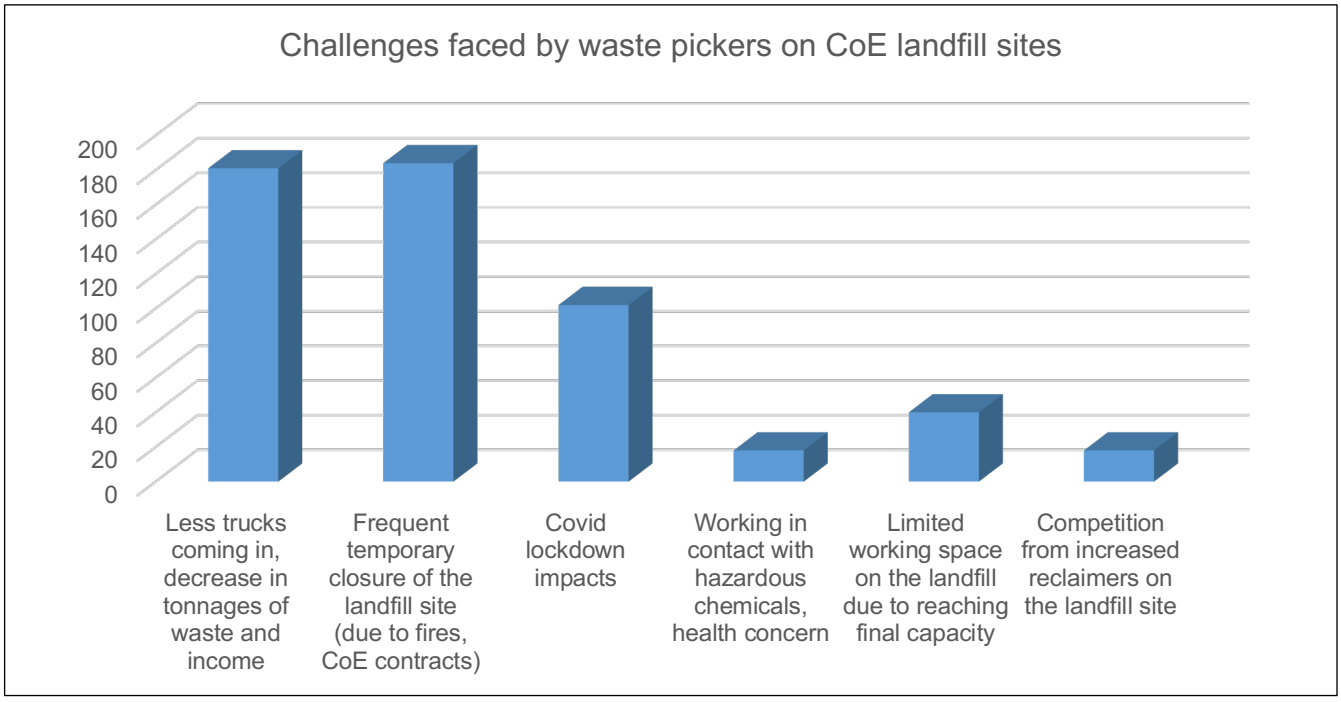

Figure 52: Challenges faced by waste pickers on CoE landfill sites

The challenges encountered by waste pickers at landfill sites were attributed to two primary causal categories.

Category one encompasses impacts attributed to external factors, such as regulatory changes or socio-economic circumstances, including high unemployment rates and COVID-19, which affect the volumes of waste entering the landfill sites or influence the quantity of recoverable material available per waste picker.

The study found that the reduction in waste and the number of trucks disposing waste at landfill sites were substantial between 2015 and 2021 (Figure 44). This decrease has had a detrimental impact on the amount of waste that can be recovered by waste pickers and, consequently, their earnings potential has suffered. It is worth noting that this reduction in waste was observed across all four sites between 2019 and 2021, coinciding with the implementation of EPR in South Africa. Godfrey (2016) posits that the EPR system could threaten the livelihoods of waste pickers and potentially limit their access to waste as less waste would reach the landfill site.

With a high level of unemployment and increasing recognition of waste as a valuable resource, it is now subject to claims and disputes among waste pickers Makina et al. (2022). The study found that the informal waste pickers at CoE landfill sites have been facing an

annual increase in competition from other waste pickers who move to landfill sites to reclaim materials.

This increased competition has resulted in a significant reduction in the amount of material that can be recovered by each waste picker, compelling them to work for more days than previously. Consequently, disputes among waste pickers typically arise, leading to conflicts and violence. In the case of CoE landfill sites, the lack of formalised groups amongst waste pickers makes it difficult to control the influx of new waste pickers. The CoE does not have any restrictive measures to prevent new waste pickers; however, the presence of regulated gangs in the case of the Simmer & Jack site enforces and prohits new waste pickers.

Category two encompasses impacts attributed to internal factors within the landfill site owner's control, such as the existing operational practices regarding site management, waste reception and processing, and the engagement of various parties and stakeholders within the landfill operations.

The study found that the waste disposed of at CoE landfill sites is frequently unsorted or segregated and often comprises hazardous and dangerous items such as syringes and broken glass. Numerous waste pickers have reported that they are frequently exposed to needles, glass, and tins, without wearing gloves or protective clothing. This was consistent with the findings of Schenck et al. (2019b).

This poses a risk to the health of informal waste pickers because they do not have the necessary personal protective equipment to handle such waste. This was ranked as the highest challenge experienced by waste pickers at all sites (**Figure *51***). In addition, waste pickers are not trained to deal with such items, which can result in accidents and injuries.

Although the waste licence conditions of Weltevreden and Rooikraal landfill sites state that the CoE should provide all waste pickers on site with PPE, this is currently not being done and demonstrates a lack of consistency in the implementation of the waste licence conditions, particularly on waste picker integration.

Secondly, the temporary closure of landfill sites within the City of Ekurhuleni due to fires, Covid-19, or contractual issues has had a detrimental impact on the livelihoods of informal waste pickers. Waste pickers rely on consistent recovery of materials and earning income

from landfill sites. When landfill sites are closed for extended periods, waste pickers are forced to seek alternative means of earning a living.

The extended closure period of the landfill sites promoted illegal dumping outside the landfill sites. This was evident in the case of the long closure of the Rooikraal landfill site, where it was observed that the waste pickers were reclaiming materials from illegally dumped waste loads outside the site, leading to environmental issues.

Marello and Helwege (2018) posit that the integration of waste pickers from a municipal perspective is imperative, as this diminishes the number of pickers present in landfills, decreases the occurrence of illegal dumping, and minimises the prevalence of backyard waste burning.

The operational capacity of one of the landfill sites in the city of Ekurhuleni (Simmer & Jack) has reached its operational limit, signifying its end of life and the need for closure. The site's restricted space for waste disposal is shared with incoming waste trucks, impeding the ability of informal waste pickers to carry out their recycling activities. This limited space poses a risk to the safety of waste pickers, thereby increasing the likelihood of accidents and injuries.

Across all landfill sites examined in this study, it was observed that the operational management lacked the necessary infrastructure to accommodate and regulate waste picker activities on the premises. This was identified as one of the major shortcomings reported by waste pickers. It pertained to the absence of facilities and shelters to protect them from inclement weather conditions, including extreme heat, cold, and rain.

The absence of adequate infrastructure, such as recycling shelters or storage facilities, at CoE landfill sites, where recyclable materials can be stored under adverse weather conditions, significantly impacts the quality of recyclables that waste pickers can sell to buyers. Although there is existing infrastructure at the Weltevreden landfill site, it is not accessible to waste pickers. Consequently, informal waste pickers are unable to sort materials properly, which prevents them from obtaining the best possible price for their materials. Furthermore, the absence of infrastructure compels waste pickers to work in open areas, which can lead to health problems.These results were consistent with the findings of Schenck et al. (2019b) and Mudavanhu (2020).

Lastly, the absence of sanitation and potable water facilities at any of the landfill sites exacerbates the vulnerability of informal waste pickers to diseases. They are compelled to labour for extended periods without access to fundamental sanitation or potable water, which exposes them to an elevated risk of health complications. Moreover, the absence of such essential facilities compels waste pickers to work in unsanitary environments, thereby increasing their susceptibility to health issues. These circumstances have deleterious effects on the well-being and health of waste pickers.

7.6 Opportunities and barriers that exist within the existing institutional frameworks, legislation, and guidelines for integrating the informal waste sector with waste picker integration at CoE landfill sites.

The inadequacy of waste management systems in developing countries is often linked to the prevalence of informal waste activities, which are characterised by insufficient planning, unclear responsibilities among stakeholders in the waste value chain, limited financial resources, and inadequate infrastructure. (Da Silva, 2019; Seabi, 2022).

To comprehend the potential opportunities and challenges within the existing institutional structure for integrating waste pickers into CoE landfill sites, the researcher posed two questions to waste pickers: first, to determine whether CoE provides assistance to informal waste collectors/pickers at landfill sites, and second, to explore how the city of Ekurhuleni could help waste pickers improve the collection of recyclable materials at landfill sites.

The researcher also posed a question to the city of Ekurhuleni officials involved in policymaking, compliance, and landfill site operations, asking what steps the city could take to formally recognise waste pickers in the waste management system.

7.6.1 Does the city of Ekurhuleni assist informal waste collecters/pickers at landfill sites?

The study found that 26% of the waste pickers acknowledged that the City of Ekurhuleni provided assistance and helped informal waste pickers in the form of access to sites, pre-defined working times, demarcated working spaces, and provision of PPE, whereas 66% of respondents indicated that they did not receive direct assistance from the City of Ekurhuleni in relation to their daily reclamation of activities, and 8% of respondents indicated that they had used other means to cooperate with the City of Ekurhuleni through working committee structures (**Figure 53**).

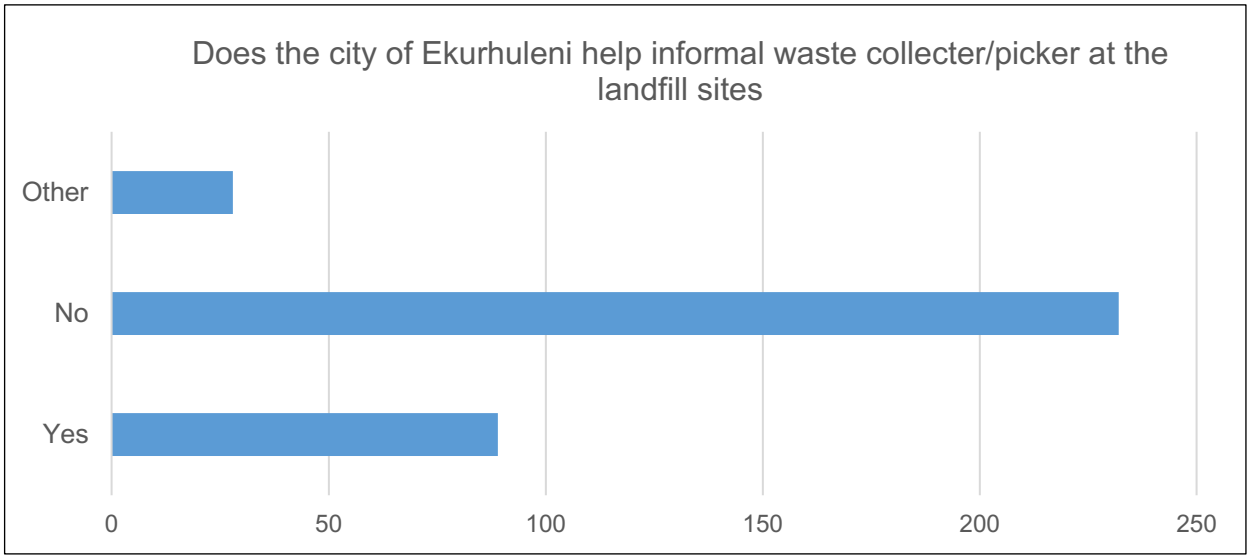

Figure 53: Does the city of Ekurhuleni help informal waste collecter/picker at the landfill sites

The city of Ekurhuleni lacks a written policy outlining the assistance that should be provided to waste pickers and how to provide such assistance. Despite this, a semi-formal process has been established on all landfill sites through monthly meetings held by the waste picker committee or a group of representatives. These meetings are conducted solely to ensure minimal disruptions to daily operations, and do not entail any formal written policy. A register of reclaimers is maintained at all sites; however, its upkeep is not consistent and is managed by the waste picker committee members on each respective site.

At Weltevrden and Rooikraal sites, waste licences stipulate that waste pickers must be integrated into operations by providing them with a designated workspace and equipping them with the necessary personal protective equipment (PPE) and conducting annual medical check-ups. However, it was reported by one city official that site operational budgets cannot accommodate the provision of PPE for waste pickers due to fluctuating numbers and associated costs. Additionally, at the Rietfontein site, for instance, it was noted that the provision of PPE was previously funded through a DFFE initiative, but when waste pickers were provided with the equipment, they did not wear it on-site.

One official in the waste minimisation department of the city responded to a query about why annual medicals for waste pickers had not been performed by the CoE at the Rooikraal site. The official stated that the city lacked the necessary capacity and resources to conduct such checks on an annual basis. This statement is consistent with the findings of the external auditors' report for Weltevreden and Rooikraal, who found that the CoE was non-compliant

with the licence conditions relating to the provision of personal protective equipment and annual medical check-ups for waste pickers. The regulatory authorities, GDARD, were reportedly understanding towards the challenges faced by the city on landfill sites in terms of resource scarcity and were providing assistance to waste pickers accordingly.

The Weltevreden waste picker committee was questioned regarding their familiarity with the CoE's obligation to supply personal protective equipment (PPE) for them. They stated that they were unfamiliar with this responsibility but highlighted the need for additional support from the municipality, including access to fundamental amenities such as toilets, drinking water, and shelter for inclement weather, which they deemed to be of higher priority. This aligns with the results of the study conducted by Mudavanhu (2020) on four landfill sites in Western Cape, where the absence of basic facilities, such as ablution facilities and shelter, was identified as one of the principal challenges faced by waste pickers.

The researcher discovered that most city officials and service providers were wary of the presence of waste pickers at the landfill site but did not feel compelled to offer or initiate assistance beyond what was required by their daily interactions and responsibilities. One city official stated that providing assistance to waste pickers was a difficult issue, as the city was cautious about setting expectations that it could not be maintained in light of the growing number of waste pickers, particularly in the face of high unemployment.

A waste picker from Simmer & Jack voiced their dissatisfaction by being represented by the committee. They believed that their voices were not adequately expressed, particularly regarding the urgent assistance they required in light of the depleting airspace. The waste picker was concerned with the limited waste resources they had rather than being provided with PPE. As a result, they opted to continue working alone rather than being represented in a forum. This sentiment has been well established in previous studies (Schenck et al., 2016; Makina et al., 2022) which found that the challenge of fostering membership, participation, and consensus on the fair distribution of collected waste arises from the preference for autonomy among many waste pickers.

7.6.2 How could the city of Ekurhuleni help waste pickers improve the collection of recyclable materials on landfill sites?

Historically, waste reclaimers who scavenged for waste on disposal sites frequently encountered severe mistreatment if they were caught doing so Samson et al. (2020). Due to the lack of national guidelines on including waste pickers, each city was required to devise

its own method for their inclusion Sekhwela & Samson (2020). Furthermore, the scarcity of standardised procedures for waste pickers across the country necessitated the development of unique strategies based on case by case basis Samson (2020).

Waste pickers understand the intricate aspects involved in sorting recyclable materials Godfrey et al. (2016). By cooperating collaboratively, numerous opportunities may be extracted from the waste value chain to benefit both waste pickers and CoE as a whole Sekhwela (2017).

To optimise the collection of recyclables at landfill sites, the city must explore alternative ways to improve the situation, as there is no material recovery facility in the CoE and no separation at source programs. In light of this, the researcher aimed to gain a deeper understanding of the perspectives of waste pickers, city officials, and service providers, with the ultimate goal of finding ways to enhance recyclable collection at landfill sites.

The research revealed that 90% of waste pickers (**Figure 54**) believed that formalisation/integration with the CoE in policies or working agreements would greatly benefit them in terms of having a voice regarding waste arriving at the landfill site. The high level of interest in formalising and integrating is largely attributed to three main factors.

Firstly, waste pickers reported that their income had significantly decreased over the past six years, with the primary cause being changes in PET policies. Coca Cola, as one of the major PET producers, had introduced recyclable and returnable bottles, resulting in very little PET being found at the landfill sites. The Rietfontein waste picker committee members felt that the CoE was not doing enough to protect their interests in terms of incoming waste.

It is evident that the implementation of EPR has been successful, as noted by Godfrey, Strydom, and Phukubye (2016), who stated that if implemented effectively, EPR can alleviate the burden on municipalities of collecting recyclables in areas where waste pickers are most active.

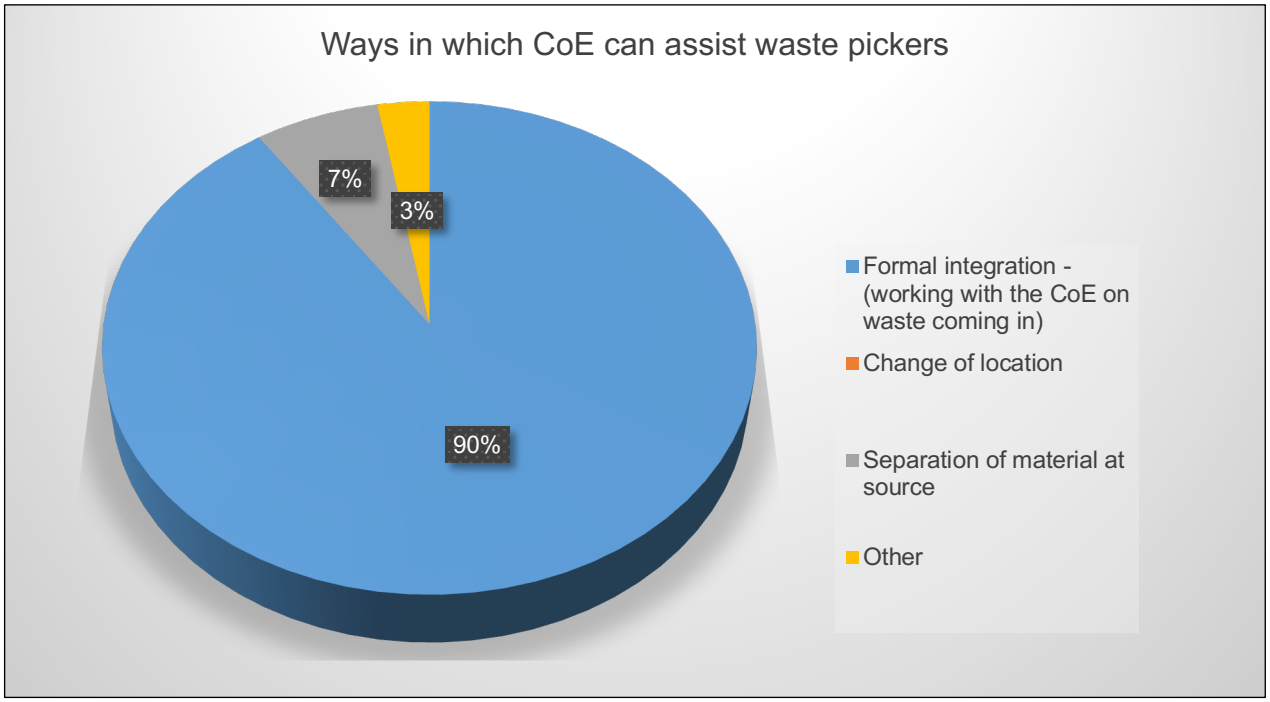

Figure 54: Ways that the city of Ekurhuleni can help waste pickers improve the collection of recyclable materials

Secondly, waste pickers observed a general decline in waste that could be recycled from the site during the research period. This was attributed to several factors, including the impact of the Covid pandemic over the two years preceding the study, and the increase in competition and waste pickers at the site compared to previous years. This suggests that, with declining volumes of recyclable waste, more waste pickers must share a lower tonnage of waste for recyclables. Consequently, some waste pickers have had to explore alternative means of earning a living, such as waste reclamation, due to this situation. They are optimistic that formalisation will provide more stability to their incomes in the form of grants from CoE when there is a decline in waste tonnage or closure of landfill sites.

Lastly, the majority of focus groups at the Weltevreden site indicated that the integration of their activities with the CoE would greatly assist them in ensuring that their voices were heard and their requests were met. During their monthly meetings with the city site representatives, they had previously requested that they be provided with a covered working shelter and a compressing machine for their recyclables in order to transport them easily to their buyers. However, they feel that their requests fall on the deaf ears, as they are not being taken to the decision-makers in the municipality head offices. Therefore, some formalised integration would be beneficial in addressing this issue.

The supervisor at the Rietfontein site believed that there was an opportunity to formally integrate waste pickers into landfill sites. However, he believed that the initiative should be led by the CoE by providing waste pickers with basic amenities such as toilet facilities and access gates.

The CoE waste minimisation officer stated the following:

"At present, we have established initiatives and cooperatives for waste pickers that are operational beyond landfill sites, specifically in strategic locations where waste collection is unavailable, as well as at Heidelberg transfer station, where waste pickers are granted permission to retrieve materials. However none currently running on any of the landfill sites"

The results from the study conducted by Godfrey, Strydom, and Phukubye (2016) align with the notion that the informal sector should be proactively integrated into the waste and recycling economy. However, their findings did not provide a clear answer as to whether this integration should occur through formalisation or integration. While this approach was presented as the preferred method, it is important to note that without proper processes and planning, the formalisation of pickers into co-operatives may result in a high failure rate of waste and recycling cooperatives, as suggested by Godfrey et al. (2015). The study estimated that the failure rate could be as high as 91.8%.

Seven percent (7%) of waste pickers believed that CoE could aid in the collection of recyclables by initiating separation at source programs for waste pickers, which would be more advantageous to them than recovering at the landfill site (**Figure 54**). This plan involves separating waste materials at their point of origin, such as households and businesses, prior to transport to the landfill site. However, the waste pickers did not provide further information on how this would benefit them, as this would suggest that the separated materials would not be taken to landfill sites. Nonetheless, this approach could be effective in decreasing the amount of waste that ends up in landfills and in encouraging sustainable waste management practices. However, as mentioned by Samson et al. (2020) in the Johannesburg and Mestimaholo case studies, the implementation of separation at source programs in CoEs has the potential to result in the exclusion of waste pickers and not address their highest priorities or formalise their integration, as most are hesitant to join formalised cooperatives with municipalities for these initiatives to succeed.

A small proportion of waste pickers (approximately 3%) indicated that the CoE could extend further support in addressing their specific on-site work obstacles. They expressed a preference for working individually rather than as part of a group (**Figure 54**).

7.6.3 How can the city of Ekuhuleni support the integration of waste pickers into the formal waste management system?

According to Simatele et al. (2017), one of the major reasons hindering municipalities from establishing and implementing successful strategies and methods for integrating waste pickers is the absence of comprehensive policies and technical expertise.

The City of Johannesburg (CoJ) in the Gauteng area launched an initiative to incorporate waste reclaimers into formal waste management systems, as per Sekhwela's (2017) study. Additionally, the research conducted by Samson et al. in 2020 underscores the complexity of this integration process, highlighting that there is no single solution that can be applied universally for the inclusion of waste pickers.

7.6.3.1 Waste pickers perspective

The researcher initially sought to gain insight from waste pickers regarding the actions that the CoE could take to formally recognise them within the waste management system. The findings from this enquiry focused on fulfilling the daily working requirements of waste pickers (**Figure 55**).

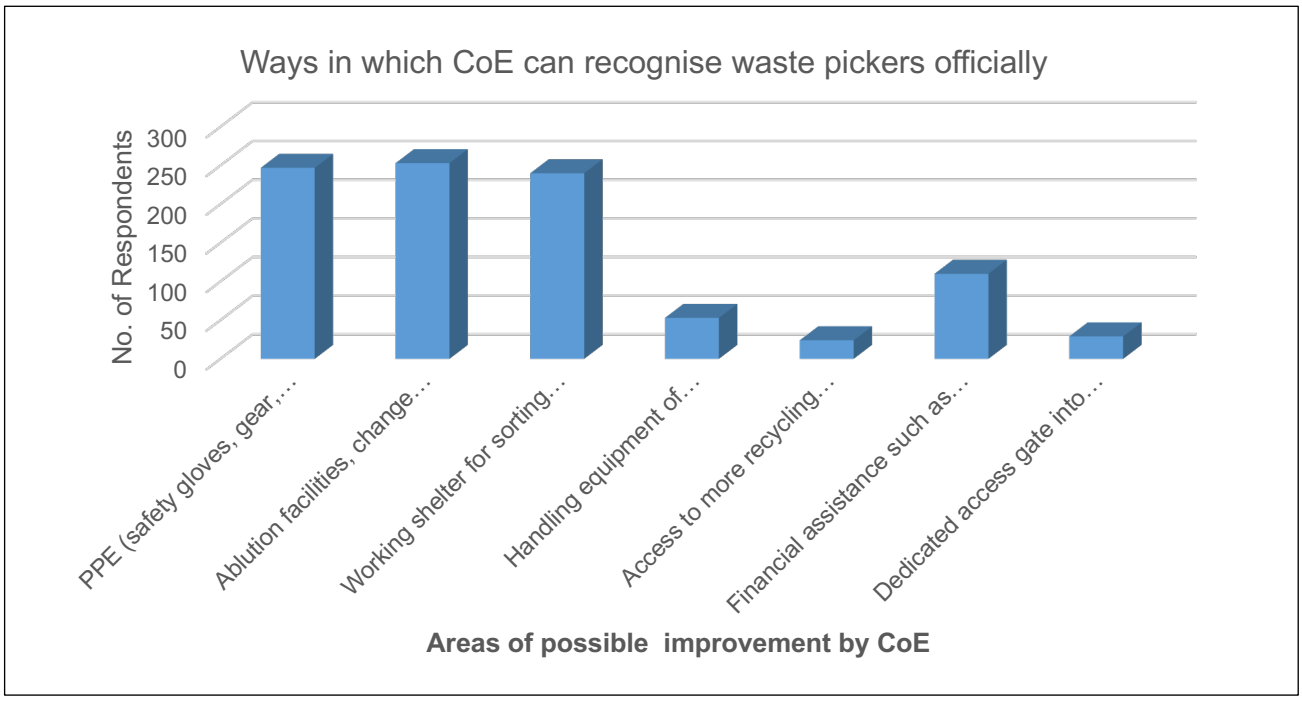

Figure 55: Ways in which CoE can recognise waste pickers officially

According to the study, 26% of the respondents expressed concern for their safety while performing their duties and requested the provision of personal protective equipment by the CoE. This equipment would facilitate daily work by diminishing the risk of accidents, injuries, and exposure to hazardous materials.

An additional 26% of the respondents expressed the need for recognition from the municipality, proposing the provision of basic amenities, such as ablution facilities, change rooms, and drinking water on-site. These amenities are essential for waste pickers, who frequently work for extended periods under challenging conditions and would enhance their quality of life.

Furthermore, 25% of respondents requested a covered working shelter to sort and store materials during adverse weather conditions. This would enable them to continue their work even under unfavourable weather conditions, ensuring that the waste is collected and sorted efficiently. Furthermore, some informal waste pickers have indicated their willingness to manage the recycling sheds within landfill sites (Weltevreden landfill site) through an organised committee or structure. This would help to ensure that waste pickers are able to work together and have greater control over their activities.

In addition, 6% of the respondents requested the provision of handling equipment for recyclables, such as compression or baling machines. This equipment facilitates their work by improving the efficiency of sorting, storing, and transporting waste.

At the Weltevreden landfill site, the waste pickers have expressed their eagerness to assume control of the unutilized recycling facility situated therein, in order to support their daily operations. Despite repeated appeals to the CoE, this proposal has yet to be endorsed.

Finally, the last 3% of respondents hoped for recognition from the CoE, which would allow them to access more recycled materials by increasing the number of trucks coming to the site. Additionally, they requested a demarcated access gate at the landfill sites, which would help them in their daily work by providing easy and safe access to the site.

This study provides valuable insights into the needs and expectations of waste pickers in CoEs, highlighting the significance of safety, recognition, and basic facilities for the efficient and sustainable management of waste.

7.6.3.2 City of Ekurhuleni officials pespective

According to Samson et al. (2020), integration is a new aspect of work for municipalities outside the areas of expertise of waste officials. The study found that approaches to waste picker integration differ based on objectives, as indicated by Sekhwela (2017), and are always context-specific, as stated by DEFF and DSI (2020).

The researcher sought to understand how a formal waste system can better recognise or integrate waste pickers. The questions targeted officals within the city of Ekurhuleni, which are involved in policy making, compliance enforcement, landfill operations, and decision making.

The Ekurhuleni IWM By-Laws (2021) does not address waste picking extensively, and provides a general definition of informal.

The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) was the first regulatory requirement to enforce that all municipalities should have an integrated waste management plan. Thirteen years down the line CoE is yet to still have a draft version of any IWMP. The landfill manager at Simmer & Jack was asked if she was aware of what an IWMP was and responded that she was not sure of what that document entails; her job was confined to understanding the permit conditions only.

The researcher conducted an interview with a city official involved in compliance monitoring and waste minimisation programs in the city. The purpose of the interviews was to gather information on what the city was doing in relation to the policy of reclaimers in the absence of any official program in place for landfill waste pickers. The official provided the following statements.

"Our efforts to implement policies fall short compared to those of the City of Joburg (CoJ). However, we are working to rectify this situation by aiming to have a live Integrated Waste Management Plan (IWMP) by early 2025. Although we have initiated a few waste minimisation initiatives, these have not yet been extended to any of our landfill sites. To formulate an integration program for waste pickers at these sites, we must identify and address the specific scenarios present at each location. While a general understanding of collective needs is valuable, our experience has shown that the needs of waste pickers at Rietfontein differ from those at Weltevreden"

One landfill manager from CoE when asked if the municipality was aware at all at the number of waste pickers that were in the landfills and long term plans for their integration, and they stated;

"Our reliance on site operators and CoE personnel is crucial for engaging waste pickers through monthly meetings, where minutes must be recorded and submitted to GDARD. While formal integration is essential, it is currently beyond our means of funding the necessary training for staff and reclaimers. We are aware of CoJ initiatives aimed at integrating waste pickers and are eager to learn the best practices for doing so, as we recognize their value in saving airspace"

The CoE mandates that landfill operators engage in regular meetings with waste pickers or their designated representatives and formulates a practical plan to incorporate waste pickers into their operations. This stipulation is included in the service-level agreement contracts for operating sites and must be strictly adhered to. Research conducted by Koen and Fourie (2022) demonstrates that the landfill operator at the Weltevreden site must devise a strategy to formalise waste picking on-site and implement appropriate health and safety measures to minimise the risks faced by waste pickers. According to Godfrey, Strydom, and Phukubye (2016), contracts for landfill operations ought to include a strategy for the integration or accommodation of the informal waste sector. This approach aims to guarantee that the informal waste sector, which holds immense importance in waste management, is taken into account and actively participates in the broader waste management framework.

Interview with the landfill operator supervisor at Rietfontein site, on whether he was familiar with the waster picker integration plan he is supposed to enforce on site, he stated the following;

"I was aware that my company when appointed on this is supposed to submit a waste picker plan on how we will incorporate them in operations. This issue was raised at monthly site meetings. However, I do not fully understand what these plan entities are, so I refer the matter to my supervisor. There is a plan that was populated by our company and on file but this was done with no input or review from the municipality and is currently not being enforced or checked by anyome from CoE"

According to the researcher, there is a well-established communication system between waste pickers, site operators, and city officials at all landfill sites. However, many key

stakeholders fail to comprehend the depth and significance of integrating waste pickers into waste systems. Despite concerted efforts to document and promote the integration of waste pickers, there remains a lack of understanding among the stakeholders. Effective communication and collaboration are essential for achieving a successful and sustainable waste management system that includes waste pickers.

It was also noted that the CoE officials had implemented practical guidelines and informal tactics in the absence of formal policies and directives for managing waste pickers, which was similar to the findings of Samson et al. (2020) regarding the City of Johannesburg and Metsimaholo municipalities.

The researcher meticulously scrutinised all licences and permits of the four operational landfill sites where waste pickers were present, as well as external audit reports conducted by others, including the regulatory authorities and GDARD. Regarding the two CoE landfill sites whose permits have not yet been converted from ECA, namely Rietfontein and Simmer & Jack, it is important to note that their existing waste permits do not explicitly allow waste pickers on the sites. However, there is a general understanding and concise acknowledgement from GDARD, as evidenced by the reviewed quarterly monitoring minutes of the waste pickers' presence on landfill sites, as well as ongoing efforts from the CoE to include them as part of the operations.

7.6.3.3 Researcher's perspective on findings in relation to integration

Whilst not central to the primary research objectives, the researcher sought to contextualise the main findings presented in Chapter 7 within the broader framework of informal waste sector integration and the City of Ekurhuleni's initiatives.

A significant observation is the divergent perspectives on integration held by waste pickers and the municipality. Waste pickers perceive and interpret integration as acknowledgement of their presence at landfill sites. This recognition, in their view, should manifest through the provision of personal protective equipment, sanitation facilities, access to water, and suitable working conditions, such as shelters to safeguard their recovered materials.

Officials from the municipality and various entities involved in solid waste management are struggling to grasp the overarching principles and interconnections within the solid waste management system. They also face challenges in adhering to the established regulatory framework. The landfill site operators treat compliance with waste licence requirements as a

mere box-ticking exercise. At two of the four sites where waste licences have been updated under NEM:WA 2008 (Act No: 59 of 2008), which now includes provisions for waste reclamation and waste pickers, the majority of staff members claimed that implementing these requirements and any integration aspects was the responsibility of their superiors. They often felt unable to question non-compliance issues. This lack of engagement was evident in the fact that none of the municipal staff directly involved in managing and interacting with waste pickers were aware of the DFFE & DSI (2020) waste picker integration guidelines.

The case of City of Ekurhuleni waste picker integration and the disparity and lack of integration policies or framework is no different to the number of case studies as noted by Simatele (2017) in the case of City of Johannesburg. The notable factor being the lack of a strong instituional framework system and process to support and guide the integration of waste pickers.

Despite the existence of a comprehensive guideline for waste picker integration DFFE & DSI (2020), the City of Ekurhuleni continues to struggle with grasping the fundamental principles of integration as outlined by Velis et al. (2012). For the successful integration of the informal sector into a city's SWM system, it is crucial to implement a combination of interventions from all four categories, tailored to specific local requirements and conditions Velis et al. (2012).

Further research conducted by Velis et al. (2012) uncovered considerable variation in the focus of integration initiatives across the studied cases. It was noted that these efforts often lack equilibrium across the four interfaces, which was particularly evident in the City of Ekurhuleni case. Velis et al. (2012) stressed the necessity of giving equal weight to all four interfaces and their interrelationships, particularly by ensuring the informal waste sector's access to source-separated waste, in order to achieve effective integration, inclusion, or formalisation initiatives Velis (2017).

To enhance their prospects for integration, waste pickers at the City of Ekurhuleni landfill might consider uniting with those from other landfill sites to collectively approach the City. The research revealed a notable consistency in the concerns and issues raised by waste pickers regarding integration. The Sasolburg waste picker integration case study Samson (2009) stands out amongst South African municipalities, as the local government was not the primary force behind integration. Instead, informal waste pickers initiated the process by seeking municipal acknowledgement of their role in waste reclamation Samson (2009).

7.7 Chapter summary

This chapter provides an extensive examination of data pertaining to the research objectives. It comprises a comprehensive discourse on the findings and interpretations. The data were scrutinised and deliberated using thematic frameworks, and the statistical results of the participants were visually depicted through graphical representations. Moreover, the discussion highlights salient themes that surfaced during data analysis.

The informal waste in CoE was found to comprise 2/3 males and 1/3 females, with the majority working independently. The study also found that the majority of waste pickers used mobile scales and not site weigh bridges to measure their recyclables, with 88% of them transporting the material off-site to their buyers.

The study revealed that 90% of waste pickers believed that integration with CoE in policies or working agreements would greatly benefit them in terms of having a voice regarding waste arriving at landfill sites. The high level of interest in formalising and integrating was largely attributed to several factors related to daily working challenges.

The chapter highlighted the importance of gaining insights from waste pickers regarding the actions that the CoE could take to formally recognise their role within the waste management system. There is a well-established communication system between waste pickers, site operators, and city officials at all landfill sites. However, some key stakeholders failed to understand the significance of integrating waste pickers into waste systems. Despite efforts to document and promote the integration of waste pickers, there remains a lack of understanding among the stakeholders. Effective communication and collaboration are critical to achieve a sustainable waste management system that includes waste pickers. The chapter further sought to contextualise the main findings within the broader framework of informal waste sector integration and the City of Ekurhuleni's initiatives.

CHAPTER 8.CONCLUSION & RECOMMENDATIONS

8.1 Introduction

This study aimed to investigate the informal waste sector in Ekurhuleni, with a specific focus on landfill waste pickers. The objective of this research was to explore the constituents of the informal waste sector within the City of Ekurhuleni's landfill operations. The investigation centred on the demographic characteristics, attributes, work settings, vulnerabilities, challenges, and prospects of waste pickers. Furthermore, the study aimed to ascertain a potential link between the quantity of waste deposited at landfill sites and its subsequent retrieval or reclamation by waste pickers, with the possibility of generating additional landfill airspace.

To accomplish this, the study analysed the quantification of recoverables over a six-year period (2015-2021) at CoE-owned landfill sites, assessing the quantities of waste disposed and subsequently recovered and/or recycled by informal waste pickers. Second, the study examined the demographics of the informal waste sector, including work experience, conditions, and whether the waste pickers were part of a cooperative or worked independently. This study also explored the methods used by waste pickers to measure and remove recyclables from landfill sites, as well as the challenges they face in relation to the amount of recyclables they can recover.

Furthermore, the study identified key stakeholders directly linked to waste picker activities and examined the challenges faced by waste pickers at landfill sites. Despite the generally good working relationship between waste pickers and CoE personnel and service providers at all sites, the research revealed opportunities and barriers within the implementation of existing institutional frameworks, legislation, and guidelines for integrating the informal waste sector within the CoE. Therefore, there is need for considerable enforcement and improvement in this area.

Finally, the research aimed to ascertain the views of waste pickers and CoE staff regarding their incorporation into the formal waste management framework. The study offers valuable insights, revealing that waste pickers' understanding of integration is closely tied to their immediate requirements and expectations in their daily work.

The study reveals a fragmented and inconsistent institutional framework for waste picker integration from the city's standpoint. The municipality's lack of an IWMP is apparent, given the difficulties in complying with the regulatory framework and guidelines for waste picker integration. The landfill site operators appear to treat adherence to waste licence requirements as a perfunctory box-ticking exercise.

8.2 Summary of Key Findings

The following provides an overview of the main conclusions of the research conducted on the informal waste sector at operational landfill sites in the city of Ekurhuleni.

8.2.1 CoE waste value chain

The CoE boasts an extensive network of waste collection services supported by a sub-network of transfer and mini stations. However, the primary focus remains on landfill disposal fee revenue generation in the absence of a material recovery facility. The CoE has yet to reach the implementation stage of separation at source program. The lack of municipal incentives to encourage recycling at the source is compounded by the lack of interest or the slow pace of recycling at the community level. Nevertheless, the inclusion of such programs was reported in the draft Integrated Waste Management Plan (IWMP) to still be finalised. Therefore, the existence of separation at source programs in CoEs is largely driven by the private sector, mostly Remade/Mpact, through sporadic source separation initiatives with flats, complexes, and gated communities within the city of Ekurhuleni. As a result, separation outside of the source by informal waste pickers at landfill sites still constitutes the majority of activities involving the collection and separation of recyclables in the CoE.

The CoE has an organised and well-managed weigh bridge system for monitoring incoming waste and outgoing recyclables across all landfill sites. However, this system is primarily designed for formalised recycling or waste disposal companies that require registration and the provision of vehicle registration numbers for access to landfill sites. The system currently does not adequately accommodate waste pickers unless they have a registered vehicle.

8.2.2 Informal waste sector and quantity of recyclables recovered

The study revealed a thriving informal waste sector comprising almost 1200 waste pickers on CoE landfill sites, with a notable gender disparity. This number has grown over the period 2015 to 2021, and the majority of the waste pickers work independently, without being part of any formalised group or cooperatives.

The study highlighted a considerable discrepancy and inefficiency in the quantification of recyclables collected by waste pickers at CoE landfill sites. Only 0.57% of the total waste disposed of is recovered and recycled through the informal waste sector. Although the weighbridge system effectively reports waste disposal tonnages according to the National Waste Management Strategy (NWMS) (2011, 2020), it is not suitable for accurately quantifying recyclables collected by waste pickers on the landfill workface. Therefore, the study concludes that the CoE does not optimise the recovery rates from the informal waste sector to extend the lifespan of its landfill sites.

The informal waste sector in the CoE is achieving significant and uncaptured recycling rates, recovering and reclaiming a substantial amount of recyclables that are not accounted for by the existing CoE waste tonnage capturing system. The weighing of recyclables by waste pickers occurs in the disposal area of the landfill site or outside the landfill site, at the final point of selling. Most of these recyclables are removed from landfill sites by waste pickers by foot, without going through the weighbridge. It is noteworthy that the informal waste sector is attaining impressive recycling rates with minimal support from the formal sector or CoE. Unless the City of Ekurhuleni (CoE) provides additional weighing systems or formalises the integration of waste pickers, the actual quantity of recyclables from landfill sites by waste pickers is not accurately captured. CoE does not mandate waste pickers to submit the quantities of recyclables to landfill sites, which is why it is crucial for the CoE to consider formalising the integration of waste pickers to account for and quantify the recyclable materials being taken off-site.

8.2.3 Key Stakeholders

Additionally, the study showed that although there is an amicable working relationship between waste pickers and CoE, there is currently no infrastructure in place to accommodate the informal waste sector on any of the CoE landfill sites. Although two of the landfill sites (Weltevrden and Rooikraal) have had their waste licences converted to the National Environmental Management Waste Act (59 of 2008) and provided provisions for their inclusion in site operations and the provision of personal protective equipment to waste pickers, the CoE faces financial and institutional capacity constraints in enforcing these requirements.

The presence of private buyback and recycling centres in Ekurhuleni, which are actively operating and transacting with waste pickers on CoE landfill sites, has been established. A

strong relationship exists between a selected few companies and landfill waste pickers, but this relationship operates outside CoE policies or formalisation.

8.2.4 Institutional framework gaps

The absence of an approved Integrated Waste Management Plan (IWMP) within the CoE has led to a disconnection between the waste minimisation department's responsibilities and the mandate of the CoE landfill personnel and service providers. The latter focuses on high revenue gained from disposal fees, while the former focuses on waste minimisation initiatives through cooperatives in areas where waste collection is not carried out by the city, such as townships or low-density populated areas. The focus on these waste minimisation initiatives includes providing support to community-based recycling cooperatives, with a particular emphasis on infrastructure and skills provision, none of which is happening on any of the CoE landfill sites.

The ongoing operational challenges at two of the four CoE landfill sites impede the process of converting waste permits from the Environmental Conservation Act (Act 73 of 1989) to the National Environmental Management Waste Act (59 of 2008). It is the researcher's opinion that the CoE should prioritise this task before considering an overall waste picker integration model for all landfill sites.

8.2.5 Integration of informal waste sector

The research findings indicate that most waste pickers perceive formalisation and incorporation into the City of Ekurhuleni's policies and work agreements as highly advantageous, as it would grant them a say in matters concerning waste delivered to the landfill site. Additionally, the study demonstrates that waste pickers' perception of integration is intrinsically linked to their immediate needs and expectations in their day-to-day work. This underscores the significance of implementing safety protocols, recognising their contributions, supplying basic facilities, and supporting infrastructure to facilitate their daily material recovery efforts efficiently.

However, the absence of a policy on the integration and inclusion of waste pickers results in a lack of provisions for them, which is evident from the challenges they face, such as limited access to ablution facilities and shelters, as well as training and other essential resources. Additionally, the city of Ekurhuleni personnel and service providers often lacks the necessary institutional capacity to effectively manage waste pickers. Furthermore, there is a lack of

awareness and knowledge about inclusion and integration as well as a lack of effort to strengthen the capacity of the informal sector to improve recycling rates and livelihoods.

The study emphasises the significance of enhancing the informal sector's capabilities to improve the quality of life, working conditions, and efficiency of informal waste workers. Moreover, it posits that for a project initiative to successfully integrate the informal sector into a city's solid waste management (SWM) system, it should incorporate tailored interventions from four key areas. These areas comprise the relationship between the informal waste sector and the SWM system, the materials and value chain, the broader societal context, and organisational aspects and empowerment. These interventions should be customised to address local requirements and circumstances Velis et al. (2012).

The incorporation of informal waste pickers into waste management systems is a crucial step for South African municipalities, including the city of Ekurhuleni. Nevertheless, this measure alone is insufficient to secure community acceptance. It is equally important to focus on enhancing recycling efficiency and ameliorating the working conditions of these individuals. Such comprehensive efforts will not only yield environmental benefits but also safeguard the safety and dignity of the waste pickers Godfrey et al. (2016).

Contrary to the findings of Velis et al. (2012), which highlighted considerable variation in the focus of integration initiatives amongst the examined cases, none of which were from sub-Saharan African nations, and noted that these efforts often lacked equilibrium across the four interfaces, the city of Ekurhuleni presents a different scenario. There is a marked consistency across its four landfill sites and their connection to these four categories. The city could benefit from adopting a unified approach towards integration, giving equal weight to all four interfaces and their interrelations. This is particularly crucial in ensuring that the informal waste sector can access waste that has been separated at source, which is vital for the success of integration, inclusion, or formalisation initiatives Velis (2017).

The findings of this study further suggest that waste pickers in a CoE can gain from the formation of cooperatives. As stated by Wilson et al. (2006), formulating cooperatives for waste pickers can facilitate capacity development and training initiatives, while simultaneously ensuring the implementation of stringent health and safety standards. The establishment of cooperatives can guarantee that waste pickers are not subjected to exploitation and price manipulation by buyback centres Mvuyane (2018).

The research findings indicate a need for further exploration in determining the appropriate models of integration for formalising waste pickers within a CoE, given the distinct dynamics present at each landfill site. CoE would need to incorporate the various meanings of integration, as seen by waste pickers, CoE personnel, and service providers.

The recommended CoE trajectory point is the adoption of the DEFF and DSI (2020) Waste Picker Integration Guideline for South Africa, according to the researcher's recommendations. DEFF and DSI (2020) advocate the initiation of the integration process by essential stakeholders and role players at various points and devising an approach suitable for a specific context. These guidelines outline seven (7) steps of waste picker integration, namely, prepare-partner-plan-enable-institutionalise-implement-revision, which the CoE can follow to formulate waste picker integration principles. These principles are governed by Waste Picker Integration Plans (WPIP) for all interfaces with waste pickers. Furthermore, Samson et al. (2020) highlighted various lessons learned from the City of Johannesburg and Metsimaholo municipalities between 2016 and 2019, which can serve as key lessons for CoEs to choose and apply the applicable integration initiative.

The research findings have been instrumental in incorporating waste pickers into the SoS system, as Samson et al. (2020) highlighted in their case studies of the City of Johannesburg and Metsimaholo municipalities, as follows:

The study confirmed that the CoE landfill waste pickers are already integrated into their own SoS system and, while not officially regulated by policy, operate within the CoE MSW system and recycling value chain. The CoE landfill waste pickers view integration within the SoS system as a CoE addressing their daily challenges, emphasising the importance of safety, recognition, and basic facilities such as water, ablution facilities, and shelter. The researcher recommends that before CoE formulates any integration initiative in the context of SoS, it must structure the initiative in such a way that the benefits and effects can be easily measured or quantified, as stated by Samson et al. (2020).

Second, integration through cooperatives in a CoE is still in its early stages. Although there is a semi-formalised setup of cooperatives on each CoE landfill site in the form of working committees that engage the majority of CoE waste pickers, many of them work independently, and their interests are not channelled or voiced through the working committees. This approach is inefficient, and the committees lack adequate support and power to engage CoE. They are often treated as charity cases and not in control of obtaining

what they request. This reinforces the findings of Samson et al. (2020) in the case studies of the City of Johannesburg and Metsimaholo municipalities, where it is crucial for the CoE and waste picker committees on landfill sites to establish alternative pathways for integration beyond cooperatives that are driven by requirements.

8.3 Gaps in knowledge for future research

It is worth noting that the following gaps in knowledge still exist, as observed and noted by the researcher in relation to the informal waste sector in the city of Ekurhuleni.

- There is a noticeable lack of reliable and accurate data regarding the quantity of waste gathered and recycled by waste collectors at operational landfill sites in the city of Ekurhuleni that does not use the landfill site weighbridge system. It is crucial to quantify the volume of recyclable materials at other points other than the landfill site weighbridge system.

- There is insufficient understanding of the current potential of waste pickers with regard to the establishment of cooperatives. Further investigation is required to determine and facilitate the arrangement and formalisation of waste pickers, as well as to identify the most appropriate integration model that can be applied based on specific landfill site scenarios.

- The contribution of itinerant and street waste pickers in the city of Ekurhuleni waste value chain toward the minimisation and quantification of waste that is not taken to landfill sites for disposal.

- Other significant stakeholders or key players, such as PROs and buyback centres, as well as the actual quantities of recyclables contributed by waste pickers, were inaccessible or underexplored due to intellectual property rights. Therefore, it is essential to investigate and study these aspects further.

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APPENDIX A

PARTICIPANT INFORMATION SHEETS

- ENGLISH (WASTE PICKERS, CITY OF EKURHULENI, PRIVATE SECTOR & PROs)
- ZULU (WASTE PICKERS)

University of the Witwatersrand,
School of Civil and Environmental Engineering

Participation Information Sheet (INTERVIEWS/QUESTIONNAIRE) – Informal Waste Sector in the City of Ekurhuleni for the Metropolitans staff and Service Providers

Dear Sir / Madam,

My name is Irene Inan (nee Nyirenda) (Student No: 0208508J). I am studying for a Master's in Engineering in the School of Civil and Environmental Engineering at the University of the Witwatersrand. As part of my studies, I have to undertake a research project, and I am investigating Informal Waste Sector in the City of Ekurhuleni under the supervision of Dr. Anne Fitchett. The aim of this research project is to assess the informal waste sector contributions that the City of Ekurhuleni can implement in order to promote recovery and reuse of waste away from landfill sites.

As part of this project, I would like to invite you to take part in an interview/questionnaire based on your role in your organization and your interaction or knowledge with the research topic. This activity will involve answering some questions and will take around 30 minutes.

Your organisation will be interviewed or requested to give data and input into the following via an online questionnaire or face-face interview.

- Waste recycling and collection movements that your organization partakes in.
- Number of all registered informal waste pickers you are directly working with.
- Quantities of recyclables waste material within the City of Ekurhuleni landfill sites, mini dump sites, and elsewhere etc.
- Means by which data on waste reclaimers recyclables and materials is collected and captured.
- Current initiatives and opportunities to engage more informal reclaimers within your organisation towards material recovery.

With your permission, I would also like to audio record the interview using a digital device. This recording will be stored on research cloud files and only the researcher will have access to this recording. It will be deleted after 5 years.
All COVID protocols will be followed during interview sessions. The following will be implemented.

1. Zoom or teams meeting in the place for face-to-face interviews where possible and practical.
2. Face-to-face interviews will be conducted with masks and social distancing.
3. Electronic online surveys in the place for physical handwritten questionnaires.

There will be no personal costs to you if you participate in this project. There will be no direct benefits that you will receive from participation and there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The interview answers will be completely confidential and anonymous as I will not be asking for your name or any identifying information, and the information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent your participation in my final research report. If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me or my supervisor on the details listed below. This study will be written up as a research thesis which will be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you (optional). The data collected from this research project will be stored in research cloud files and will be kept for 5 years. With your permission the data collected from this research project may be used by other researchers in an anonymized format. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

All Covid-19 protocols will be followed during face to face interviews.

Yours sincerely,
Irene Inan (nee Nyirenda)

Researcher:
Irene Inan (nee Nyirenda)
irene@kazuo.co.za

Supervisor:
Anne Fitchett
Anne.Fitchett@wits.ac.za

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

University of the Witwatersrand,
School of Civil and Environmental Engineering

Ishidi Lolwazi Lokubambiqhaza (IZINHLOKO/QUESTIONNAIRE) – Umkhakha Kadoti Ongahlelekile eDolobheni lase-Ekurhuleni

Mnumzane / Nkosikazi othandekayo,

Igama lami ngingu-Irene Inan (nee Nyirenda) (Nombolo yoMfundi: 0208508J). Ngifundela iMasters in Engineering eSikoleni Sobunjiniyela Bomphakathi Nezemvelo eNyuvesi yaseWitwatersrand. Njengengxenye yezifundo zami, kufanele ngenze iphrojekthi yocwaningo, futhi ngiphenya iNdawo Kadoti Engahlelekile eDolobheni lase-Ekurhuleni ngaphansi kokuqondisa kukaDkt. Anne Fitchett. Inhloso yalolu hlelo locwaningo ukuhlola igalelo lemboni yemfucuza engakahleleki iDolobha lase-Ekurhuleni elingalisebenzisa ukuze kuthuthukiswe ukubuyiswa kanye nokusetshenziswa kabusha kwemfucuza ezindaweni zokulahla imfucuza.

Njengengxenye yale phrojekthi, ngithanda ukukumema ukuthi ubambe iqhaza kwinhlolokhono/uhlu lwemibuzo esekelwe endimeni yakho enhlanganweni yakho kanye nokusebenzisana kwakho noma ulwazi ngesihloko socwaningo. Lo msebenzi uzobandakanya ukuphendula imibuzo ethile futhi uzothatha cishe imizuzu engama-25- 30.

Inhlangano yakho izoxoxwa noma icelwe ukuthi ikunikeze idatha kanye nokufaka kokulandelayo ngohlu lwemibuzo oluku-inthanethi noma inhlolokhono yobuso.

- Umnyakazo wokugaywa kabusha nokuqoqwa kwemfucuza inhlangano yakho ehlanganyela kukho.
- Inombolo yabo bonke abaqoki bakadoti abangekho emthethweni osebenza nabo ngqo.
- Inani lemfucumfucu engase igaywe kabusha ngaphakathi kweDolobha lase-Ekurhuleni izindawo zokulahla imfucumfucu, izindawo ezincane zokulahla udoti, nakwezinye izindawo njll.
- Izindlela okuqoqwa ngazo futhi kuthathwe idatha mayelana nezinto ezisetshenziselwa udoti eziphinda zigaywe kabusha nezinto zokwakha.
- Izinyathelo zamanje kanye namathuba okubandakanya ababuyiseli abangahlelekile ngaphakathi kwenhlangano yakho ekubuyiseleni izinto ezibonakalayo.

Ngemvume yakho, ngingathanda futhi ukuqopha umsindo inhlolokhono ngisebenzisa idivayisi yedijithali. Lokhu kurekhoda kuzogcinwa kumafayela efu ocwaningo futhi ngumcwaningi kuphela ozokwazi ukufinyelela lokhu okurekhodiwe. Izosuswa ngemva kweminyaka emi-5.

Wonke amaphrothokholi e-COVID azolandelwa ngesikhathi senhlolokhono. Okulandelayo kuzokwenziwa.

1. Sondeza noma amaqembu ahlangana endaweni ukuze kuxoxiswane ubuso nobuso lapho kungenzeka futhi kwenzeka.

2. Izingxoxo zobuso nobuso zizokwenziwa kusetshenziswa imaski kanye nokuncishiswa komphakathi.

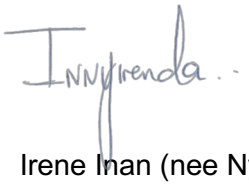
3. Izinhlolovo eziku-inthanethi ze-elekthronikhi endaweni yemibuzo ebhalwe ngesandla ephathekayo.

Ngeke kube nezindleko zomuntu siqu kuwe uma ubamba iqhaza kule phrojekthi. Angeke kube khona izinzuzo eziqondile ozozithola ngokubamba iqhaza futhi azikho izinto ezimbi noma izinhlawulo uma ungakhethi ukubamba iqhaza noma uma uhoxa ocwaningweni. Ungahoxa noma ngasiphi isikhathi noma ungaphenduli noma yimuphi umbuzo uma ungafuni. Izimpendulo zenhlolokhono zizoba yimfihlo ngokuphelele futhi zingaziwa ngoba ngeke ngibuze igama lakho nanoma yiluphi ulwazi olukuhlonzayo, futhi ulwazi onginikeza lona luzogcinwa ngokuvikelekile futhi lungadalulwa kunoma ubani omunye. Ngizobe ngisebenzisa i-pseudonym (igama elingamanga) ukumela ukuhlanganyela kwakho embikweni wami wokugcina wocwaningo. Uma uhlangabezana nanoma yikuphi ukucindezeleka noma ukungakhululeki nganoma isiphi isikhathi kule nqubo, sizoyimisa inhlolokhono noma siqale futhi ngesinye isikhathi.

Uma unanoma yimiphi imibuzo ngesikhathi noma ngemva kwalokho mayelana nalolu cwaningo, zizwe ukhululekile ukuxhumana nami noma umqondisi wami kule minininingwane ebhalwe ngezansi. Lolu cwaningo luzobhalwa njengethisisi yocwaningo ezotholakala ku-inthanethi ngewebhusayithi yomtapo wolwazi wenyuvesi. Uma ufisa ukuthola isifinyezo salo mbiko, ngizojabula ukukuthumelela wona (uma uthanda). Idatha eqoqwe kusuka kule phrojekthi yocwaningo izogcinwa kumafayela amafu ocwaningo futhi izogcinwa iminyaka emi-5. Ngemvume yakho idatha eqoqwe kule phrojekthi yocwaningo ingase isetshenziswe abanye abacwaningi ngendlela engaziwa. Uma unokuthile okukukhathazayo noma izikhalazo mayelana nezinqubo zokuziphatha zalolu cwaningo, wamukelekile ukuthintana ne-University Human Research Ethics Committee (Non-Medical), ucingo +27(0) 11 717 1408, i-imeyili hrecnon-medical@wits.ac.za

Wonke amaphrothokholi e-Covid-19 azolandelwa ngesikhathi sokuxoxisana ubuso nobuso.

Ozithobayo,



Irene Inan (nee Nyirenda)

Umcwaningi:
Irene Inan (nee Nyirenda)
irene@kazuo.co.za

Umphathi:
Anne Fitchett
Anne.Fitchett@wits.ac.za

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

University of the Witwatersrand,
School of Civil and Environmental Engineering

Participation Information Sheet (INTERVIEWS/QUESTIONNAIRE) – Informal Waste Sector in the City of Ekurhuleni for Informal Reclaimers

Dear Sir / Madam,

My name is Irene Inan (nee Nyirenda) (Student No: 0208508J). I am studying for a Master's in Engineering in the School of Civil and Environmental Engineering at the University of the Witwatersrand. As part of my studies, I have to undertake a research project, and I am investigating Informal Waste Sector in the City of Ekurhuleni under the supervision of Dr. Anne Fitchett. The aim of this research project is to assess the informal waste sector contributions that the City of Ekurhuleni can implement in order to promote recovery and reuse of waste away from landfill sites.

As part of this project, I would like to invite you to take part in an interview/questionnaire based on your role in your organization and your interaction or knowledge with the research topic. This activity will involve answering some questions and will take around 25- 30 minutes.

Your organisation will be interviewed or requested to give data and input into the following via an online questionnaire or face-face interview.

- Waste recycling and collection movements that your organization partakes in.
- Number of all registered informal waste pickers you are directly working with.
- Quantities of recyclables waste material within the City of Ekurhuleni landfill sites, mini dump sites, and elsewhere etc.
- Means by which data on waste reclaimers recyclables and materials is collected and captured.
- Current initiatives and opportunities to engage more informal reclaimers within your organisation towards material recovery.

With your permission, I would also like to audio record the interview using a digital device. This recording will be stored on research cloud files and only the researcher will have access to this recording. It will be deleted after 5 years.
All COVID protocols will be followed during interview sessions. The following will be implemented.

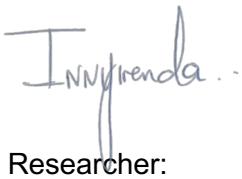
1. Zoom or teams meeting in the place for face-to-face interviews where possible and practical.
2. Face-to-face interviews will be conducted with masks and social distancing.
3. Electronic online surveys in the place for physical handwritten questionnaires.

There will be no personal costs to you if you participate in this project. There will be no direct benefits that you will receive from participation and there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The interview answers will be completely confidential and anonymous as I will not be asking for your name or any identifying information, and the information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent your participation in my final research report. If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me or my supervisor on the details listed below. This study will be written up as a research thesis which will be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you (optional). The data collected from this research project will be stored in research cloud files and will be kept for 5 years. With your permission the data collected from this research project may be used by other researchers in an anonymized format. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

All Covid-19 protocols will be followed during face to face interviews.

Yours sincerely,
Irene Inan (nee Nyirenda)



Researcher:
Irene Inan (nee Nyirenda)
irene@kazuo.co.za

Supervisor:
Anne Fitchett
Anne.Fitchett@wits.ac.za

University of the Witwatersrand,
School of Civil and Environmental Engineering

Participation Information Sheet (INTERVIEWS/QUESTIONNAIRE) – Informal Waste Sector in the City of Ekurhuleni for Private Sector Entities

Dear Sir / Madam,

My name is Irene Inan (nee Nyirenda) (Student No: 0208508J). I am studying for a Master's in Engineering in the School of Civil and Environmental Engineering at the University of the Witwatersrand. As part of my studies, I have to undertake a research project, and I am investigating Informal Waste Sector in the City of Ekurhuleni under the supervision of Dr. Anne Fitchett. The aim of this research project is to assess the informal waste sector contributions that the City of Ekurhuleni can implement in order to promote recovery and reuse of waste away from landfill sites.

As part of this project, I would like to invite you to take part in an interview/questionnaire based on your role in your organization and your interaction or knowledge with the research topic. This activity will involve answering some questions and will take around 25 - 30 minutes.

Your organisation will be interviewed or requested to give data and input into the following via an online questionnaire or face-face interview.

- Waste recycling and collection movements that your organization partakes in.
- Number of all registered informal waste pickers you are directly working with.
- Quantities of recyclables waste material within the City of Ekurhuleni landfill sites, mini dump sites, and elsewhere etc.
- Means by which data on waste reclaimers recyclables and materials is collected and captured.
- Current initiatives and opportunities to engage more informal reclaimers within your organisation towards material recovery.

With your permission, I would also like to audio record the interview using a digital device. This recording will be stored on research cloud files and only the researcher will have access to this recording. It will be deleted after 5 years.
All COVID protocols will be followed during interview sessions. The following will be implemented.

1. Zoom or teams meeting in the place for face-to-face interviews where possible and practical.
2. Face-to-face interviews will be conducted with masks and social distancing.
3. Electronic online surveys in the place for physical handwritten questionnaires.

There will be no personal costs to you if you participate in this project. There will be no direct benefits that you will receive from participation and there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The interview answers will be completely confidential and anonymous as I will not be asking for your name or any identifying information, and the information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent your participation in my final research report. If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me or my supervisor on the details listed below. This study will be written up as a research thesis which will be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you (optional). The data collected from this research project will be stored in research cloud files and will be kept for 5 years. With your permission the data collected from this research project may be used by other researchers in an anonymized format. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

All Covid-19 protocols will be followed during face to face interviews.

Yours sincerely,
Irene Inan (nee Nyirenda)

Researcher:
Irene Inan (nee Nyirenda)
irene@kazuo.co.za

Supervisor:
Anne Fitchett
Anne.Fitchett@wits.ac.za

University of the Witwatersrand,
School of Civil and Environmental Engineering

Participation Information Sheet (INTERVIEWS/QUESTIONNAIRE) – Informal Waste Sector in the City of Ekurhuleni for Producer Responsible Organisations

Dear Sir / Madam,

My name is Irene Inan (nee Nyirenda) (Student No: 0208508J). I am studying for a Master's in Engineering in the School of Civil and Environmental Engineering at the University of the Witwatersrand. As part of my studies, I have to undertake a research project, and I am investigating Informal Waste Sector in the City of Ekurhuleni under the supervision of Dr. Anne Fitchett. The aim of this research project is to assess the informal waste sector contributions that the City of Ekurhuleni can implement in order to promote recovery and reuse of waste away from landfill sites.

As part of this project, I would like to invite you to take part in an interview/questionnaire based on your role in your organization and your interaction or knowledge with the research topic. This activity will involve answering some questions and will take around 30 minutes.

Your organisation will be interviewed or requested to give data and input into the following via an online questionnaire or face-face interview.

- Waste recycling and collection movements that your organization partakes in.
- Number of all registered informal waste pickers you are directly working with.
- Quantities of recyclables waste material within the City of Ekurhuleni landfill sites, mini dump sites, and elsewhere etc.
- Means by which data on waste reclaimers recyclables and materials is collected and captured.
- Current initiatives and opportunities to engage more informal reclaimers within your organisation towards material recovery.

With your permission, I would also like to audio record the interview using a digital device. This recording will be stored on research cloud files and only the researcher will have access to this recording. It will be deleted after 5 years.
All COVID protocols will be followed during interview sessions. The following will be implemented.

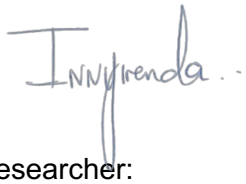
1. Zoom or teams meeting in the place for face-to-face interviews where possible and practical.
2. Face-to-face interviews will be conducted with masks and social distancing.
3. Electronic online surveys in the place for physical handwritten questionnaires.

There will be no personal costs to you if you participate in this project. There will be no direct benefits that you will receive from participation and there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The interview answers will be completely confidential and anonymous as I will not be asking for your name or any identifying information, and the information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent your participation in my final research report. If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me or my supervisor on the details listed below. This study will be written up as a research thesis which will be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you (optional). The data collected from this research project will be stored in research cloud files and will be kept for 5 years. With your permission the data collected from this research project may be used by other researchers in an anonymized format. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

All Covid-19 protocols will be followed during face to face interviews.

Yours sincerely,
Irene Inan (nee Nyirenda)



Researcher:
Irene Inan (nee Nyirenda)
irene@kazuo.co.za

Supervisor:
Anne Fitchett
Anne.Fitchett@wits.ac.za

APPENDIX B

CONSENT FORMS

- ENGLISH (WASTE PICKERS, CITY OF EKURHULENI, PRIVATE SECTOR & PROs)

- ZULU (WASTE PICKERS)

Research Consent Form

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, …….., agree to participate in this research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:
(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

YES NO

…… (signature)
…… (name of participant)
…… (date)

…… (signature)
…… …..……..…… (name of person seeking consent)
……..…… (date)

Ifomu Lemvume Yokucwaninga (Research Consent Form)

Isihloko sephrojekthi: Umkhakha Kadoti Ongahlelekile eDolobheni lase-Ekurhuleni

Igama lomcwaningi: U-Irene Inan (nee Nyirenda) - Inombolo yomfundi: 0208508J

Mina, …….., ngiyavuma ukubamba iqhaza kulo msebenzi wocwaningo lwenhlolokhono. Nginikezwe ulwazi mayelana nocwaningo lomkhakha wemfucuza engekho emthethweni ngase ngixoxisana ngohlelo locwaningo no-Irene Inan (nee Nyirenda) owenza lolu cwaningo njengengxenye yeziqu ze-masters eziqondiswa uDkt. Anne Fitchett eNyuvesi yaseWitwatersrand (School of Civil). Nobunjiniyela Bezemvelo). Ucwaningo seluchazelwe mina futhi ngiyaqonda ukuthi ukuhlanganyela kwami kuzobandakanyani. Ngivumelana nalokhu okulandelayo:

(Sicela ubiyele izinketho ezifanele ngezansi).

Ngiyavuma ukuthi ukuhlanganyela kwami kuzohlala kungaziwa	YEBO	CHA
Ngiyavuma ukuthi ukuhlanganyela kungokuzithandela, futhi ngingahoxa ocwaningweni nganoma yisiphi isikhathi.	YEBO	CHA
Ngiyavuma ukuthi umcwaningi angasebenzisa izingcaphuno ezingaziwa embikweni wakhe wocwaningo	YEBO	CHA
Ngiyavuma ukuthi inhlolokhono ingase irekhodwe	YEBO	CHA
Ngiyavuma ukuthi izithombe zingathathwa	YEBO	CHA

Noma yiziphi izithombe ezithathwayo zizoba ngezokukhombisa kuphela imisebenzi eyenziwayo, futhi izithombe ngeke zisetshenziswe kwenye indawo ngaphandle kwenhloso yocwaningo kuphela. Ngiyavuma ukuthi Umcwaningi angathatha izithombe.

Wonke amaphrothokholi e-Covid-19 azolandelwa ngesikhathi sokuxoxisana ubuso nobuso.

…… (signature)
…… (name of participant)
…… (date)

…… (signature)
…… (name of person seeking consent)
…… (date)

APPENDIX C

PARTICIPANT SURVEY SHEETS

- ENGLISH (WASTE PICKERS, CITY OF EKURHULENI, PRIVATE SECTOR & PROs)

- ZULU (WASTE PICKERS)

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	
	Female	
1.3	**Employment Status**	
	Working for myself	
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		
	Paper (Other)		
	Plastic (PET)		
	Plastic (Other)		
	Food waste		
	Glass (Bottles)		
	Glass (Broken)		
	Metal (Steel)		
	Metal (Other)		
	Rubber		
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes		
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other		
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No		
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in		
	Change of location		

	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Interview		
City of Ekurhuleni Employees and CoE Service Providers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
1.2	**How long have you been in that position?**	
1.3	**Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	
	No	
	I don't know	
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni? And how?**	
2	**Informal Sector Contribution**	
2.1	**Is your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	
2.3	**Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?**	
2.4	**Are you aware of any success inititiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	
	No	
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activitities in the City of Ekurhuleni ?**	
	Yes	
	No	
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni?**	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	
3	**Informal Sector Volumes/Tonnages**	
	Who is responsible for data collection and capturing for informal reclaimers material	

3.1	City of Ekurhulleni	
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Other	
	I don't know	
3.2	**Within your area of responsibiliity, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
3.3	**How is this data collected or captured from informal reclaimer material recycables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables; and if so where and how many?**	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	
	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	
	Not my area of responsibility	

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Interview		
Private Sector and Industry Experts		
This questionnaire will take approximately 20 - 30 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
1.2	**How long have you been in that position?**	
1.3	**Are there any existing company policies or future initiatives by your company to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	
	No	
	I don't know	
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni (Landfill sites, buy back ceentres or oother**	
2	**Informal Sector Contribution**	
2.1	**Is your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	
2.3	**Are there any existing structures or opportunities where the informal sector can be formally integrated into waste material recovery systems by your organistion in the City of**	
2.4	**Are you aware of any success inititiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	
	No	
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activitities in the City of Ekurhuleni that your organisation has direct control on ?**	
	Yes	
	No	
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni as faced by your organisation?**	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	

3	Informal Sector Volumes/Tonnages	
3.1	**Who is responsible for data collection and capturing for informal reclaimers material recyclables and recoverables in yourr organisation?**	
	Our Company	
	City of Ekurhulleni	
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Others	
	I don't know	
3.2	**Within your area of responsibiliity, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni by your organisation?**	
3.3	**How is this data collected or captured from informal reclaimer material recycables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables by your organisation; and if so where and how many?**	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	
	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	
	Not my area of responsibility	

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Interview		
Producer Responsible Organisations and Buyback centres		
This questionnaire will take approximately 20 - 30 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
1.2	**How long have you been in that position?**	
1.3	**Are there any existing company policies or future initiatives by your company to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	
	No	
	I don't know	
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni (Landfill sites, buy back ceentres or oother**	
2	**Informal Sector Contribution**	
2.1	**Is your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	
2.3	**Are there any existing structures or opportunities where the informal sector can be formally integrated into waste material recovery systems by your organistion in the City of**	
2.4	**Are you aware of any success inititiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	
	No	
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activitities in the City of Ekurhuleni that your organisation has direct control on ?**	
	Yes	
	No	
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni as faced by your organisation?**	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	

3	Informal Sector Volumes/Tonnages	
3.1	**Who is responsible for data collection and capturing for informal reclaimers material recyclables and recoverables in yourr organisation?**	
	Our Company	
	City of Ekurhulleni	
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Others	
	I don't know	
3.2	**Within your area of responsibiliity, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni by your organisation?**	
3.3	**How is this data collected or captured from informal reclaimer material recycables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables by your organisation; and if so where and how many?**	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	
	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	
	Not my area of responsibility	

Research Survey Sheet (Ishidi Locwaningo Locwaningo)		
City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers (Ababuyise okungakahleleki)		
Lolu hlu lwemibuzo luzothatha cishe imizuzu eyi-15 - 20 ukuphothula. Zonke izivumelwano ze-Covid-19 zizolandelwa.		
	Imibuzo:	Izimpendulo:
1	**Ulwazi oluvamile**	
1.1	**Ubudala**	
	18 - 25	
	26 - 35	
	36 - 35	
	>45 iminyaka	
1.2	**Ubulili**	
	Owesilisa	
	Owesifazane	
1.3	**Isimo Sokuqashwa**	
	Ngizisebenzela	
	Ukusebenzela umdayisi	
	Ukusebenzela usoseshini	
	Okunye	
1.4	**Inombolo yomndeni oncikile**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	Alukho ulwazi olunikeziwe	
2	**Izimo zokusebenza**	
2.1	**Zingaki izinsuku osebenza ngazo ngeviki?**	
	7	
	5 - 6	
	≤ 5	
2.2	**Usebenza amahora amangaki ngosuku? (amahora)**	
	0 - 3	
	4 - 6	
	7 - 10	
2.3	**Unesikhathi esingakanani usebenza njengesiqophi sikadoti?**	
	0 - 10 (iminyaka)	
	1 - 10 (iminyaka)	
	2 - 10 (iminyaka)	
	No information provided	
2.4	**Ithini indlela yokuhambisa izinto ezigaywa kabusha uziyise kumthengisi?**	
	Ibhayisikili/Isithuthuthu	
	Imoto/Iloli	
	Ngezinyawo	
	Inqola Yenqola	
	Okunye	
3	**Izinto Ezingabuyiselwa Izinto (Okusebenziseka Kabusha)**	
3.1	**Ukuqoqa kuphi okugaywa kabusha? (Isitsha, umgwaqo, indlu, indawo yokulahla imfucumfucu njll.)**	
	Izindawo Zedepho Ezindaweni Zokuhlala	
	Imigqomo Yasekhaya emgwaqeni	
	Imigwaqo (Izindawo Zokuhweba Nezimboni)	
	Indawo yokulahla udoti (igama?)	
	Uzithengisa kuphi izinto ezigaywa kabusha?	
	Ngaphakathi kweDolobha laseKurhuleni	

3.2	Ngaphandle Kwedolobha Ekurhuleni		
	Iyahluka		
	Angazi		
	Okunye		
3.3	**Uthengisela bani izinto ezigaywa kabusha?**		
	Umthengisi		
	Umuntu ophakathi		
	Thenga Emuva Isikhungo		
	Inhlangano Yesibopho Somkhiqizi		
	Okunye		
3.4	**Ukala kanjani izinto zakho ezigaywa kabusha**		
	Ukugcwaliswa kwe-volumetric kwezikhwama (isilinganiso)		
	Isikali seselula		
	Ibhuloho lendawo yokulahla udoti		
	Angiwulinganisi - umthwalo womunye umuntu		
3.5	**Inani Lokubuyisela kanye Nethebula Lentengo Yokuthengisa (Maviki onke)**		
	Okugaywa kabusha	Avg. R/day (2015)	Avg. R/day (2021)
	Ikhadibhodi		
	Iphepha (Okunye)		
	Ipulasitiki (PET)		
	Ipulasitiki (Okunye)		
	Imfucuza yokudla		
	Ingilazi (Amabhodlela)		
	Ingilazi (Ephukile)		
	Insimbi (Insimbi)		
	Insimbi (Okunye)		
	Irabha		
	Uma Okunye, cacisa		
3.6	**Khombisa ukuthi abathengi bakuqoqa yini udoti ophuma kuwe noma kufanele ubahambisele wona?**		
	Baqoqa		
	Kufanele ngibahambisele		
4	**Izinto Ezibuyiselwayo (Ubuningi)**		
4.1	**Ingabe uthola noma yiziphi izinguquko ohlotsheni lukadoti olungagaywa kabusha eminyakeni engu-5 edlule (2015 - 2021)?**		
	Yebo		
	Cha		
	Angazi		
4.2	**Ingabe uthola noma yiziphi izinguquko emananini angagaywa kabusha eminyakeni engu-5 edlule?**		
	Yebo		
	Cha		
	Angazi		
4.3	**Ingabe uzoqhubeka nokusebenza kule ndawo?**		
	Yebo		
	Cha		
5	**Ukudidiyelwa kweDolobha lase-Ekurhuleni noma izinhlangano ezibophezelekile kumkhiqizi**		
5.1	**Ingabe ubhalisiwe njengomkhiqizi kadoti nanoma iyiphi inhlangano noma inhlangano**		
	City of Ekurhuleni		
	Thenga Emuva Isikhungo		
	Inhlangano Yesibopho Somkhiqizi		
	Lutho		
	Okunye		
5.2	**Ingabe iDolobha lase-Ekurhuleni liyakusiza njengomqoqi/umqophi ongekho emthethweni**		
	Yebo		

	Cha	
	Okunye	
5.3	**Yiziphi izindlela iDolobha lase-Ekurhuleni elingenza ngazo ukukusiza ukuthi uthuthukise ukuqoqwa kwezinto ezigaywa kabusha?**	
	Ukuhlanganiswa okusemthethweni - (ukusebenza ne-CoE mayelana nemfucuza engena	
	Ukushintsha indawo	
	Ukuhlukaniswa kwezinto emthonjeni	
	Okunye	
	Angazi	
5.4	**Yini okumele iDolobha lase-Ekurhuleni likwenzele yona ukuze uhlonishwe ohlelweni olusemthethweni lokulawulwa kwemfucuza?**	
5.5	**Iziphi izinselele ohlangabezana nazo ekubuyiseleni izinto ezibonakalayo (okugaywa kabusha)**	
5.6	**Ingabe kukhona izinsongo ocabanga ukuthi zizoba nomthelela empilweni yakho noma inani lezinto ezigaywa kabusha oziqoqayo?**	

APPENDIX D

RESEARCH INFORMATION SHEET

- ENGLISH (WASTE PICKERS, CITY OF EKURHULENI, PRIVATE SECTOR & PROs)

- ZULU (WASTE PICKERS)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

University of the Witwatersrand,
School of Civil and Environmental Engineering

Research Information Sheet – Informal Waste Sector in the City of Ekurhuleni

Dear Sir / Madam,

My name is Irene Inan (nee Nyirenda) (Student No: 0208508J). I am studying for a Master's in Engineering in the School of Civil and Environmental Engineering at the University of the Witwatersrand. As part of my studies, I have to undertake a research project, and I am investigating Informal Waste Sector in the City of Ekurhuleni under the supervision of Dr. Anne Fitchett. The aim of this research project is to assess the informal waste sector contributions that the City of Ekurhuleni can implement in order to promote recovery and reuse of waste away from landfill sites.

As part of this project, I would like to invite you to take part in an interview / answering a questionnaire based on your role in your organization and your interaction or knowledge with the research topic. This activity will involve answering some questions and will take around 30 minutes. With your permission, I would also like to audio record the interview using a digital device. This recording will be stored on research cloud files and only the researcher will have access to this recording. It will be deleted after 5 years.

There will be no personal costs to you if you participate in this project. There will be no direct benefits that you will receive from participation and there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The interview /questionnaire answers will be completely confidential and anonymous as I will not be asking for your name or any identifying information, and the information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent your participation in my final research report. If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me or my supervisor on the details listed below. This study will be written up as a research thesis which will be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you (optional). The data collected from this research project will be stored in research cloud files and will be kept for 5 years. With your permission the data collected from this research project may be used by other researchers in an anonymized format. If you have any concerns or complaints regarding the ethical

procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

Yours sincerely,
Irene Inan (nee Nyirenda)

Researcher:
Irene Inan (nee Nyirenda)
irene@kazuo.co.za

Supervisor:
Anne Fitchett
Anne.Fitchett@wits.ac.za

APPENDIX E

APPROVAL LETTER TO CONDUCT RESEARCH (CITY OF EKURHULENI)

ENVIRONMENTAL RESOURCE AND WASTE MANAGEMENT

City of Ekurhuleni

ENVIRONMENTAL RESOURCE AND
WASTE MANAGEMENT
LANDFILL SECTION

Boksburg Civic Centre
C/o Commissioner and
Trichardts Roads
BOKSBURG

P O Box 215
Boksburg 1460
Tel: (011) 999-5658
Fax: 086 630 3025
www.ekurhuleni.com

University of Witwatersrand
School of Civil and Environmental Engineering

Attention: Irene Inan (Student No: 0208508J)

Cc: Dr Anne Fitchett

03 November 2021

Approval of Research Topic on City of Ekurhuleni Landfill Sites

We refer to your letter dated 02 November 2021 seeking permission to have access to our landfill sites in relation to your research proposal titled "The Informal Waste Sector in the City of Ekurhuleni".

We have taken note of your request and respond as follows. We grant you approval subject to the following;

1. You shall liaise and coordinate all your visits with the relevant City of Ekurhuleni Landfill Manager's in advance.
2. You shall adhere to all site access rules as communicated to you by the relevant service providers and wear correct PPE.
3. You shall at no given time or under any circumstance hold City of Ekurhuleni liable for any loss as a result of the permission given to you on our landfill sites to conduct the above started research.
4. You shall not publish or share or distribute them with any individuals outside the contents of your research as outlined. The use of pictures shall be pre-approved.
5. You shall treat all information shared confidential and strictly for the use in your research.
6. City of Ekurhuleni will be given the right to review the contents of your research before it is published.

Kind regards

HMMboweni

Mr. Hudson Mboweni
Acting Divisional Head: Waste Management
Environmental Resource and Waste Management

APPENDIX F

ETHICAL CLEARANCE APPROVAL

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Inan

CLEARANCE CERTIFICATE **PROTOCOL NUMBER: H21/11/50**

PROJECT TITLE Informal waste sector in the city of Ekurhuleni

INVESTIGATOR(S) Mrs I Inan

SCHOOL/DEPARTMENT Civil and Environmental Engineering/

DATE CONSIDERED 26 November 2021

DECISION OF THE COMMITTEE Approved
Risk Level: Minimal

EXPIRY DATE 22 May 2025

DATE 23 May 2022 **CHAIRPERSON** _____
(Professor J Watermeyer)

cc: Supervisor : Professor A Fitchett

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to submit an amendment of the protocol to the Committee. **I agree to completion of a regular progress report. For Minimal and Low studies, this is due annually on 31 December. For Medium and High Risk studies, this is due twice annually on 30 June and 31 December.**

Inyoada
_____ 23 / 05 / 2022
Signature **Date**

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

APPENDIX G

RIETFONTEIN LANDFILL SITE INTERVIEW/QUESTIONNAIRE RECORD SHEETS

Research Consent Form

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Ziphozami Nxumalo, agree to participate in this research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

YES NO

Ziphozami Nxumalo ..... (signature)
..Ziphozami Nxumalo..... (name of participant)
.....20/10/2023..... (date)

Inyirenda ..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....25 January 2024..... (date)

Research Consent Form

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, RENDANI KHOROMBI, agree to participate in this research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

YES NO

..... (signature)
RENDANI KHOROMBI (name of participant)
..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....25 January 2024..... (date)

Research Consent Form

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Ndou Vhuthuhawe, agree to participate in this research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work.

..... (signature)
Ndou Vhuthuhawe (name of participant)
10/10/2022 (date)

..... (signature)
..... (name of person seeking consent)
..... (date)

Research Consent Form

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ..Prashanth Gokaran....., agree to participate in this research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

YES NO

Prashanth V Gokaran ..... (signature)
Prashanth Gokaran ..... (name of participant)
25th January 2024 ..... (date)

I Nyirenda
..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....25 January 2024..... (date)

Research Consent Form

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, STEFAN DE MEILLON....., agree to participate in this research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

YES NO

..... (signature)
Stde Meillon..... (name of participant)
26/1/24..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....25 January 2024..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, THABANE BUTHELEZI agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
THABANE ..... (name of participant)
31/05/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
31/05/2022 ..... (date)

Research Survey Sheet
City of Ekurhuleni - Informal Waste Sector Interview
City of Ekurhuleni Employees and CoE Service Providers

This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.

	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	ASSISTANT SUPERVISOR
1.2	**How long have you been in that position?**	3 MONTHS
1.3	**Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	
	No	
	I don't know	
	Not my area of responsibility	✓
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni? And how?**	YES, THROUGH RECLAIMERS COMMITTE MEETING
2	**Informal Sector Contribution**	
2.1	**In your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	RECYCLE
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	WE NEED PROPER ACCESS FOR THE RECLAIMERS
2.3	**Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?**	
2.4	**Are you aware of any success initiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	
	No	✓
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activities in the City of Ekurhuleni ?**	
	Yes	
	No	✓
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni?**	PPE, INFRASTRUCTURE, TRANSPORT
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	YES, SOCIAL DEVELOPMENT, DEA
3	**Informal Sector Volumes/Tonnages**	

3.1	**Who is responsible for data collection and capturing for informal reclaimers material**	
	City of Ekurhuleni	
	Service Provider appointed by City of Ekurhuleni	✓
	Third Party Entity	
	Other	
	I don't know	
3.2	**Within your area of responsibility, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
	YES	
3.3	**How is this data collected or captured from informal reclaimer material recyclables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	✓
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables; and if so where and how many?**	
	NOT TO MY KNOWLEDGE	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	90% R
	Paper (Other)	90% R
	Plastic (PET)	
	Plastic (Other)	90% R
	Food waste	
	Glass (Bottles)	90% R
	Glass (Broken)	
	Metal (Steel)	90% R
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	✓
	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	✓
	Not my area of responsibility	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Nhanhla Khumalo....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Nhanhla..... (name of participant)
31 May 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
31/05/2022 (date)

Research Survey Sheet

City of Ekurhuleni - Informal Waste Sector Interview

City of Ekurhuleni Employees and CoE Service Providers

This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.

	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	- Site supervisor -> Service providers management -> site operations management
1.2	**How long have you been in that position?**	Five years
1.3	**Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	
	No	
	I don't know	✓
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni? And how?**	- Yes -> Coordinating the reclaimers through their committee
2	**Informal Sector Contribution**	
2.1	**In your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	- Preserving the airspace
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	1. An influx of undocumented foreigners. 2. Budget constraints
2.3	**Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?**	- Yes, through waste minimisation divisions
2.4	**Are you aware of any success initiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	✓ (city of Johannesburg)
	No	
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activities in the City of Ekurhuleni ?**	
	Yes	✓
	No	
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni?**	- No infrastructure supporting their activities
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	1. Buy back centers 2. GIPARD
3	**Informal Sector Volumes/Tonnages**	

3.1	**Who is responsible for data collection and capturing for informal reclaimers material**	
	City of Ekurhuleni	✓
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Other	
	I don't know	
3.2	**Within your area of responsibility, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
	yes	
3.3	**How is this data collected or captured from informal reclaimer material recyclables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	✓
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables; and if so where and how many?**	
	1. Vitiges 2. Landfill site	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	✓ (at least 200)
	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	
	Not my area of responsibility	✓

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, HENDRICK SHILABE, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

H.M. Shilabe ..... (signature)
HENDRICK ..... (name of participant)
31/05/2022 ..... (date)

Inan ..... (signature)
Irene Inan ..... (name of person seeking consent)
31/05/2022 ..... (date)

	Research Survey Sheet	
	City of Ekurhuleni - Informal Waste Sector Interview	
	City of Ekurhuleni Employees and CoE Service Providers	
	This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.	
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
	Bill ~~Systeming~~ - Team Leader financial Administrator	
1.2	**How long have you been in that position?**	
	8 years (since 2014)	
1.3	**Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	
	No	✓
	I don't know	
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni? And how?**	
	- Yes	
2	**Informal Sector Contribution**	
2.1	**In your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
	- Landfill Airspan is increasing	
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	
	- Site permit does not allow them to be in place	
2.3	**Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?**	
	- Being part of a registered organisation.	
2.4	**Are you aware of any success initiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	✓ (City of CT, COJ, Buffalo City)
	No	
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activities in the City of Ekurhuleni ?**	
	Yes	✓
	No	
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni?**	
	-> Storage Space	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	
	- Remade	
	-	
3	**Informal Sector Volumes/Tonnages**	

3.1	**Who is responsible for data collection and capturing for informal reclaimers material**	
	City of Ekurhuleni	✓ (Weighbridge Operators)
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Other	
	I don't know	
3.2	**Within your area of responsibility, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
	Yes	
3.3	**How is this data collected or captured from informal reclaimer material recyclables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	✓
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables; and if so where and how many?**	
	1- Nigel transfer station, and ~~Kegl~~ recycling	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	
	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	
	Not my area of responsibility	✓

Meeting Attendance Register

Meeting Agenda:

Site/Location: Rietfontein Boardroom Committee

Date: 26 May 2022

Meeting Time: 12h00

	Name and Surname	Company/Department	Contact No.	Signature
1.	Rocky Mudau	Karwa Resources	0619907558	
2.	Sthulile Mgubane	Commit	064 050 4582	Mgubane
3.	Daniel Belwaji	WP Committee		
4.	Nhlanhla Khumalo	COE/Supervisor	0839668576	
5.	Banele Tetyana	KWM	0785420986	
6.	PETER MTSWENI	KWM	0711547620	
7.	Irene Tran	Wits Student	0788043077	
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				

Ratfontein Landfill Site

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	R1.30 P/kg	R1,50c P/kg
	Paper (Other)	R2.00 P/kg	R1,50 P/kg
	Plastic (PET)	R4.00 P/kg	R4.50c P/kg
	Plastic (Other)	R1.00 P/kg	R1.00 P/kg
	Food waste		
	Glass (Bottles)	R0,50c P/kg	R1.00 P/kg
	Glass (Broken)		
	Metal (Steel)	R2.50 P/kg	R3.00 P/kg
	Metal (Other)		
	Rubber	R1.00 P/kg	R2.00 P/kg
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes		
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other		
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No		
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

on-site recreational group.

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Obvious Mcube....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Obvious ..... (name of participant)
30/05/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
30/05/2022 ..... (date)

Research Survey Sheet

City of Ekurhuleni - Informal Waste Sector Questionnaire

Informal Reclaimers

This questionnaire will take approximately 30 minutes to complete.

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (27)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	
	Working for a dealer	✓
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (3)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	✓
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (6)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remade)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓ (on-site)	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- PPE - water - Toilet	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Dangerous chemicals (car battery)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Yes, we have nowhere to be at whenever it rains.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...James Sithole....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

JSithole
..... (signature)
.....James..... (name of participant)
.....30 May 2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....30/5/2022..... (date)

City of Ekurhuleni - Informal Waste Sector Interview

Informal Reclaimers

This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (4)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (8)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (10)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	
	Trolley Cart	✓
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman		
	Buy Back Centre	✓	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility	✓ (Sometimes)	
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	✓	
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes		
	No	✓	
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni	✓ (Reclaimers Committee)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	Awareness and a proper gate specifically for them as the one.	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	1. Decrease in tonnages 2. No PPE	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Yes, a number of trucks have went down.	

5.4. Continuation:-

→ Awareness in sense of them being recognised as people whose livelihood depend on the daily operation. ~~James~~

5.7. Other:-

x In this interview, James indicated this comes after they were mistreated during the start of the COVID pandemic. This was made worse after the site closed in early 2021 and did so from February 2021 to September 2021.

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Ngobitz Weube, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Ngobitz Weube ..... (signature)
Ngobitz ..... (name of participant)
30/05/22 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
30.05.2022 ..... (date)

Research Survey Sheet

City of Ekurhuleni - Informal Waste Sector Questionnaire

Informal Reclaimers

This questionnaire will take approximately 30 minutes to complete.

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (3)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Mpact)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	—
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify PVC	✓	
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	(Anwell)
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (Tonnage decreased)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni	✓ (Reclaimers Committee)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Barn coat (PPE) 2 Water 3 Toilet, change room	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Brown glass broken glass	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- yes, the site is receiving little PET bottles. Coca-cola returnables policy.	

5.7. How did COVID-19 impact your livelihood?

=> No source of income for more than eight months in 2021

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Daniel Baloyi....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
.....Daniel..... (name of participant)
....30.....May.....2022... (date)

..... (signature)
....Irene.....Inan..... (name of person seeking consent)
.....30/5/2022.... (date)

City of Ekurhuleni - Informal Waste Sector Interview

Informal Reclaimers

This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓ (42)
	>45 years	~~✓ mid (42)~~
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	✓
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (8)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	
	Trolley Cart	✓
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Richfontien
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman		
	Buy Back Centre	✓	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	—	—
	Food waste	—	—
	Glass (Bottles)	✓	
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Gate 2. PPE	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	~~1. PPE (gloves & boots must~~ - Broken glass	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	1. Medical waste, for example, used needles are dangerous (dangerous)	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Steve Moyane....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
.....Steve..... (name of participant)
.....30.....May.....2022... (date)

..... (signature)
.....Irene Inan... (name of person seeking consent)
.....30/5/2022.. (date)

City of Ekurhuleni - Informal Waste Sector Interview

Informal Reclaimers

This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - 35	
	>45 years	✓
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	✓
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (8)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	✓
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman		
	Buy Back Centre	✓	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)		
	Plastic (Other)	✓	
	Food waste		
	Glass (Bottles)	✓	
	Glass (Broken)		
	Metal (Steel)	✓	
	Metal (Other)		
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni	~~Yes~~ As part of Reclaimers Committee)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Infrastructure supporting waste picking 4. 2. Water 3. Toilet	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	1. Decreasese 2. Gate 3. Health & safety (PPE)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	A great decrease in PET	

Research Consent Form - ~~Questionnaire~~ Interview

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Solomon Mokoena....., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that Photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

SOLOMAO ..... (signature)
Solomon ..... (name of participant)
...31 May 2022..... (date)

..... (signature)
.....Irene N. Inan.. (name of person seeking consent)
.....31/05/2022.. (date)

Research Survey Sheet

City of Ekurhuleni - Informal Waste Sector Questionnaire

Informal Reclaimers

This questionnaire will take approximately 30 minutes to complete.

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (26)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (2)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (8)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (Since 2018)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		—
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		✓
	Food waste		—
	Glass (Bottles)		—
	Glass (Broken)		—
	Metal (Steel)		✓
	Metal (Other)		✓
	Rubber (PVC)		✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Toilet 2. PPE 3 Water	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Broken glass - Diapers	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> The waste coming into the site is going down	

Research Consent Form - ~~Questionnaire~~ Interview

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Steve Mkhumbeni..., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that Photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

Mkhumbeni..... (signature)
Steve..... (name of participant)
31 May 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
31/05/2022..... (date)

Research Survey Sheet

City of Ekurhuleni - Informal Waste Sector Questionnaire

Informal Reclaimers

This questionnaire will take approximately 30 minutes to complete.

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓ (45)
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (2)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (8)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (Since 2017)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Riet fontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		✓
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		
	Food waste		
	Glass (Bottles)		
	Glass (Broken)		
	Metal (Steel)		✓
	Metal (Other)		✓
	Rubber		
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ Con-site Recyclers Group.	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- grant - Toilet	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Medical waste - Broken bottles	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Waste tonnages decreased.	

5.7. How has the covid pandemic impacted.

→ No work for more than 7 months
→ No income for many months

Research Consent Form - ~~Questionnaire~~ Interview

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Silence Hlziyo....., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	(NO)
I agree that Photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

SILENCE
..... (signature)
..HHLIZIYO..... (name of participant)
.....31/05/22..... (date)

..... (signature)
.....Irene Inan (name of person seeking consent)
.....31/05/2022..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓ (1986)
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (2)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (8)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (Since 2017)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Richfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale		
	Landfill site weighbridge	✓	
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		✓
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		✓
	Food waste		✓
	Glass (Bottles)		—
	Glass (Broken)		—
	Metal (Steel)		—
	Metal (Other)		✓
	Rubber (PVC)		✓
	If Other, specify		✓
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Toilet - Water - Gate	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- injecting - Bottles Bottles	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Tonnages decreased, this has affected the money - connected	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Hillary Sithole, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Hillary ..... (name of participant)
31/05/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
31/5/2022 ..... (date)

Research Survey Sheet

City of Ekurhuleni - Informal Waste Sector Questionnaire

Informal Reclaimers

This questionnaire will take approximately 30 minutes to complete.

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓ (36)
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (5)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	✓
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (Since 2013)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Rema b.e)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	—	
	Food waste	—	—
	Glass (Bottles)	✓	
	Glass (Broken)	✓	
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber (PVC)	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (Consite Reclaimers Group).	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Safety shoes + Raincoats Safety Shoes + raincoats	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- needles - glass	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Yes, the money collected keeps going down.	

5.7 Other
- little money involved in glass & bottles ~~out~~.

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mutuwanambo Avafare, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Avafare ..... (name of participant)
31/05/22 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
31/05/2022 ..... (date)

Research Survey Sheet

City of Ekurhuleni - Informal Waste Sector Questionnaire

Informal Reclaimers

This questionnaire will take approximately 30 minutes to complete.

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓ (37)
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (5)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (5)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	✓ (Since 2009)
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Riet fontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Enviro Recycling)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	—	—
	Paper (Other)	—	—
	Plastic (PET)	—	—
	Plastic (Other)	—	—
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	—	—
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group).	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- More vehicles/trucks - Take next renovatement to working face	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- needles - Diapers	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> Waste is decreasing, less money collected	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Lucky Khumalo..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Lucky Khumalo..... (signature)
.....Lucky..... (name of participant)
.....31/05/2022..... (date)

.....(signature)
.....Irene Inan... (name of person seeking consent)
.....31/05/2022.. (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (31)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (4)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (since 2013)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber (PET)	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (Gon-Sik Recoumers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Gate - Toilet - Water	- PPE - Shelter
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- injections (medical waste) - Broken bottles	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- The money collected keeps going down.	

Research Consent Form - ~~Questionnaire~~ Interview

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Michael Fabiani....., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that Photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

..... (signature)
Michael..... (name of participant)
31 May 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
31/05/2022..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓ (1977) (45)
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	✓ (4)
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (8)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (since 2018)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		✓
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		✓
	Food waste		—
	Glass (Bottles)		✓
	Glass (Broken)		—
	Metal (Steel)		✓
	Metal (Other)		✓
	Rubber (PVC)		✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimer's Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Toilet - PPE	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Diapers - used tampons (pads)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- The money I make now is low and all the things out there are expensive.	

5.7. How did the COVID impact your livelihoods as a waste picker?

- 5. It has been hard, less money and its getting worse.

Research Consent Form - ~~Questionnaire~~ Interview

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Titos Tsubube, agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that Photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

..... (signature)
Titos ..... (name of participant)
31 May 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
31/05/2022 ..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓ (1984) (38)
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (5)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (5)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (8)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (since 2019)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		✓
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		✓
	Food waste		—
	Glass (Bottles)		—
	Glass (Broken)		—
	Metal (Steel)		✓
	Metal (Other)		✓
	Rubber		✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Recyclers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Water 2. PPE	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Diapers - Deceased babies - medical waste (injections)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Waste received is declining	

5.7. How did the COVID Pandemic effect your livelihood?

-> Site was closed, and there was no money made nor any source of income.

Research Consent Form - ~~Questionnaire~~ Interview

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Christopher Kabiro....., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that Photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

C Kabiro
..... (signature)
...Christopher..... (name of participant)
...31/05/2022..... (date)

INyirenda
..... (signature)
.....Irene Inan.... (name of person seeking consent)
.....31/05/2022.. (date)

Research Survey Sheet

City of Ekurhuleni - Informal Waste Sector Questionnaire

Informal Reclaimers

This questionnaire will take approximately 30 minutes to complete.

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - 35	✓ (38)
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (4)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (8)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (since 2018)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		✓
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		✓
	Food waste		—
	Glass (Bottles)		✓
	Glass (Broken)		✓
	Metal (Steel)		✓
	Metal (Other)		✓
	Rubber		✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. PPE	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	1. medical waste (used injections)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	~ 4S	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Rephias Mayo....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Rephias Mayo ..... (signature)
Rephias ..... (name of participant)
31 May 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
31/05/2022 ..... (date)

Research Survey Sheet

City of Ekurhuleni - Informal Waste Sector Questionnaire

Informal Reclaimers

This questionnaire will take approximately 30 minutes to complete.

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - 35	✓ (40)
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (4)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (8)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (since 2016)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Richfontien
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		✓
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		✓
	Food waste		—
	Glass (Bottles)		✓
	Glass (Broken)		✓
	Metal (Steel)		✓
	Metal (Other)		✓
	Rubber		✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Boots (PPE 2. Toilet	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Baby Pampers (Diapers)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Yes, Less trucks are coming to the site compared to the previous years	

5.7. How did the COVID-19 impact your livelihood?

-> Little damages, this hasn't changed

5.8. General

-> I plead with the municipality to send more trucks

Send more trucks

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Daniel Matongo, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Dmatongo..... (signature)
Daniel..... (name of participant)
30 May 2022..... (date)

INyirenda..... (signature)
Irene Inan..... (name of person seeking consent)
31/05/2022..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	✓
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (2)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Recoverers group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. gate 2. PPE	3- Water tap 4. Toilet.
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	1. Needles (medical waste 2- Diapers	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Yes, the rain and dusty dust	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Tetwas MThetwa, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Tetwas
..... (name of participant)
30 May 2022
..... (date)

..... (signature)
Irene Inan
..... (name of person seeking consent)
30/5/2022
..... (date)

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (32)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	✓ (8)
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Riedfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	—	—
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	Sometimes
	I have to deliver to them	✓	mostly
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. PPE 2. Gate (strictly for Waste picker). 3. Water 4.	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Diapers - Rotten rags	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	1. medical waste. 2. The amount of recyclables is going down, We plead with the municipality.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lucy Chauke....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

L Chauke..... (signature)
.....Lucy..... (name of participant)
.....30 May 2022..... (date)

.....Nyirenda..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....30/5/2022 (date)

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - 35	
	>45 years	✓
1.2	**Sex**	
	Male	
	Female	✓
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (4)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	✓
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	✓ (since 2009)
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	sometimes
	I have to deliver to them	✓	mostly
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (less trucks coming to site)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Toilet / Change Rooms 3. Gate 2. PPE	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	Decrease in incoming waste. - Decreased Stillbirths	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	→ Decrease in incoming trucks.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Daniel Mastamby....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Daniel ..... (name of participant)
30 May 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
30/5/2022 ..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (35)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	✓
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Riethfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste		
	Glass (Bottles)		
	Glass (Broken)		
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ Tonnages decreased	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. PPE (boots and raincoat).	
	2 Shelter, and toilet.	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- needles (medical waste)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	→ Yes, broken bottles + glass are a safety concern	

5.7. What impact did COVID-19 have?

→ Tonnages decreased.

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, TEMATEMA MJONY..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Tematema ..... (signature)
TEMATEMA ..... (name of participant)
30 May 2022 ..... (date)

INyirenda ..... (signature)
Irene Inan ..... (name of person seeking consent)
30/5/2022 ..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (since 2017)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	sometimes
	I have to deliver to them	✓	mostly
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Gate 2. Toilet. 3. Shelter	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	->Bottles/glass Broken bottles & glasses	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-Lockdowns like the one that ~~was~~ happened during the COVID Pandemic. Its bad.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mngube Ncube....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....NCube..... (signature)
.....Mngube..... (name of participant)
.....30 May 2022 (date)

.....INyirenda..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....30/5/2022..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Riedfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)		
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	Sometimes
	I have to deliver to them	✓	mostly
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Gate. 2. Water tap 3. Shelter	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	→ Glass. → Bottles and pampers (diapers)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	→ yes, the number of trucks to site keeps going down	

5.7. How did the COVID-19 impact you?

→ It was very bumpy during the beginning of 2021, and the site was closed more than seven months in 2021

5.8. General

→ A shelter is needed, especially when the weather is not favouring our reclaiming activity, added Mngube.

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Samson Mogeeje, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Samson M ..... (signature)
Samson ..... (name of participant)
30 May 2022 ..... (date)

INNyirenda ..... (signature)
Irene Inan ..... (name of person seeking consent)
30/5/2022 ..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Ruetfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	✓	
	Glass (Broken)	✓	
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (Reclaimers group on-site)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Toilet 2. Jojo tank 3. Shelter.	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	PET has decreased on site	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Yes. The money I make is going down.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Albston Myati....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Albston..... (name of participant)
30 May 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
30/5/2022..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓ (45)
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (4)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	✓ (since 2009)
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Richfontein.
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard ✓		
	Paper (Other) ✓		
	Plastic (PET) ✓		
	Plastic (Other) ✓		
	Food waste	—	—
	Glass (Bottles) ✓		
	Glass (Broken) ✓		
	Metal (Steel) ✓		
	Metal (Other)		
	Rubber ✓		
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	Sometimes
	I have to deliver to them	✓	mostly
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Jojo tank for drinking water 2. Building toilets	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- used needles - Pampers (diapers)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Less waste, more waste pickers	

5.7. General.

=> The municipality exsist our livelihood by allowing us to reclaim on-site. furthermore, they provide a designated reclaimers cell where they store before they sell.

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mbozha Khumbule....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Mbozha..... (signature)
Mbozha..... (name of participant)
30 May 2022.... (date)

Inan..... (signature)
Irene Inan..... (name of person seeking consent)
30/5/2022..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (29)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (4)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	✓	
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	No shelter, when raining there nowhere to be at	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-> Competition amongst the waste pickers due to decline in waste coming into the site	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> Yes, there's too much competition at the moment. One being the decline of waste received the other being, the increase of waste pickers.	

5.7. How was the COVID pandemic affected your livelihood, especially as waste picker?

-> We were blocked from entering the site at the beginning of the pandemic. This was worse when the site closed in early 2021 and only opened in early October 2021.

-> Since then, it appears more people are becoming more

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Binan Mabuya....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

B Mabuya ..... (signature)
Binan ..... (name of participant)
30 May 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
30/5/2022 ..... (date)

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 44 45	✓
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber		
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Toilet 2. PPE 3. Gate	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	~~Decrease in tonnages.~~ - used injections (medical waste	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> Decrease in tonnages.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mbemba Mandtela....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

M Mandtela..... (signature)
Mbemba..... (name of participant)
30/05/2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
30/5/2022... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (29)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (3)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	✓ (since 2011)
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Toilet 3. Gate 2. Water	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Decease & foetus	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Yes, the amount of waste received has decreased.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Isaac Sitwole, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
I Sitwole ..... (name of participant)
20/05/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
30/5/2022 ..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (33)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (4)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (since 2014
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (Tonnages decreasing over two years)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Toilet 3. Shelter 2. Water	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Medical waste	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Yes, the waste the site is receiving is going down	

5.7. How did COVID-19 impact your livelihood?

-> There was no income for many months.

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Willow Khumbula, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Willow..... (name of participant)
30 May 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
30-05-2022.... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (3)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (MPact)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (Tonnages decreased)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (Un-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Boots (PPE) 2. Water 3. Clinic (Close to Kwathema)	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Used Diapers	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	I am concerned about my health because of the exposure, especially when I come across needles, says Willow.	

5.7. How did the Pandemic impact your livelihood?

→ Lost source of income for at least 7 month.

→ Waste received on-site decreased.

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Jarvieth Ndhlovu....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Jarvieth Ndhlovu (name of participant)
30 May 2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
30/5/2022 (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	✓
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	
	Working for a dealer	✓
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (4)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remade)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (Un-Site Reclaimers group).	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Water tap 3. PPE 2 Gate	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	medical waste	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	no yes	

5.7. How did COVID-19 impact your livelihood?
-> No source of income for more than 7 months
-> Tonnages decreased from the previous year.

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, King Shellos....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
King..... (name of participant)
30-05-22..... (date)

..... (signature)
Irene Inan... (name of person seeking consent)
30.05.2022.... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	
	Working for a dealer	✓
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (4)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remade)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Toilet 3. Crate 2. Shelter	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- used tampons - Porukan bottles / glass	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- yes	

5.7. How did COVID-19 impact your livelihood?

-> Less waste received on site, meaning less amount of money made.

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Morgan Mahlangu....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Morgan..... (name of participant)
30/05/22..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
30/5/2022..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - 35	
	>45 years	✓ (62)
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (since 2019)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remade)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-Site Reclaimers group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Shelter 2. Toilet 3. gate.	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	1. Medical waste 2. Diapers	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Yes, the continuation of decrease in waste recaver.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...John Mdovy....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
..... (name of participant)
.....30/05/22..... (date)

..... (signature)
.....Irene Inan... (name of person seeking consent)
.....30/5/2022.... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (5)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (5)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontien
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remade)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (site users decreased)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (Receiving more waste)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Shelter, especially when it rains - change rooms - Water "	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Strong chemicals, Diapers, used tempons, medical waste.	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Decreased tonnages received on site.	

5.7. How did COVID19 impact your livelihood
-> Badly, the site was closed for many months

5.8. General
-> The grants, importantly when the site closes

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...John Khosa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

JKhosa
..... (signature)
...John Khosa..... (name of participant)
...30/05/22..... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
...30/5/2022..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (35)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Richfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (MPact)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)		
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)		
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (more trucks needed on site)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	– A gate next to the Kwedwema Township Wom.	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	– Dead babies –	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	→ Yes, less and less trucks are coming to the site Its affecting the money I make, added John.	

5.7 Other :-

→ Gloves, as well as other working gear

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Rose Sithole....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

R.S.S..... (signature)
Rose..... (name of participant)
30-05-2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
30/05/2022..... (date)

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (34)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (3)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	✓
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (8)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	Sometimes
	I have to deliver to them	✓	mostly
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1 Toilet / Change Room 3. Gate	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-used needles (medical waste)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-Yes, what I make from waste picking is going down	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sithabile Zebe....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Zebe..... (signature)
Sithabile..... (name of participant)
30 May 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
.....30/5/2022..... (date)

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (35)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (5)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	✓
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (9 years, since 2013)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)		
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)		
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	Sometimes
	I have to deliver to them	✓	mostly
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (work is going down)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	Grant, especially when the site closes
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Water tap 2. Gate	3. Toilet 4. PPE
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Rain - Medical waste (injections)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Yes, more people are becoming part of the recolvers group on site	becoming part of

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Rethabile Radebe....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Rethabile Radebe ..... (signature)
Rethabile ..... (name of participant)
30 May 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
30/5/2022 ..... (date)

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓ (38)
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	✓ (8)
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	✓
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 - 17:00) (10 hours)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (Since 2013)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	—
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (Waste decreased)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ (Money collected is going down).	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site recyclers group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	✓ (It will be better to try in a new way)
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Additional tonneges 3. gate. 2. Shelter	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	Shelter inavailabe - Diapers - Injections (medical waste	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Yes, the money I make continues to go down and everything is going up	

5.7. Do you ever reclaim outside the Rietfontein Landfill site.

-> NO, I collect only on this site everyday.

~~5.8. Do you~~

Research Consent Form - ~~Questionnaire~~ Interview

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Thariro Zulu....., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that Photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

..... (signature)
....Thariro..... (name of participant)
....31 May 2022..... (date)

..... (signature)
....Irene Inan..... (name of person seeking consent)
.....31/5/2022.... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	✓ (19)
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (4)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (8)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (since 2001
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		✓
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		✓
	Food waste		—
	Glass (Bottles)		—
	Glass (Broken)		—
	Metal (Steel)		✓
	Metal (Other)		✓
	Rubber (PVC)		✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (Onsite Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. gate 4. Shelter 2. Toilet 5. Change rooms 3. Water	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- medical waste - Deceased babies - Broken ~~glass~~ glasses - knives	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- The decrease of waste we collect mean less money collected	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lindiwe MTWA....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Lindiwe..... (name of participant)
30 May 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
30/5/2022..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - 35	
	>45 years	✓ (53)
1.2	**Sex**	
	Male	
	Female	✓
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	✓
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	✓ (since 2009)
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Richtonstein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	✓	
	Glass (Broken)	✓	
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	sometime)
	I have to deliver to them	✓	mostly
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ Tonnages decreased	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Toilet 3. Working suit 2. Water tap 4. Change rooms	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-> Pampers (diapers	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Cute, because it takes more time ~~take~~ more time with the current one, its far and not safe	

5.7. How did the pandemic impact waste collection:

-> Tonnages heavily decreased

-> The site was closed for more than 7 months during 2021.

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Olga Cwaza....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Olga Cwaza ..... (signature)
Olga ..... (name of participant)
30 May 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
30/5/2022 ..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	✓ (since 2009) (13)
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Toilet 3. Gate 2. Water tap	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Dead babies - bottles and glass	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> The money I make is going down	

5.7. What has changed during the Pandemic.

-> The waste tonnages decreased

-> The site was closed, and no source of income was available the period the site was closed.

5.8. General

-> Gloves and safety are needed

-> Used injections are commonly found.

-> The gate is important because its hard to get into the site

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Charlotte Xube....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Xube..... (signature)
Charlotte..... (name of participant)
30 May 2022..... (date)

..... (signature)
Irene Inan (name of person seeking consent)
30/5/2022 (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	✓ (23)
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (1)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (5)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (Since 2019)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rietfontein
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	
	Paper (Other)	✓	
	Plastic (PET)	✓	
	Plastic (Other)	✓	
	Food waste	—	—
	Glass (Bottles)	—	—
	Glass (Broken)	—	—
	Metal (Steel)	✓	
	Metal (Other)		
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Water tap 2. Toilet	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- medical waste - used pads and pampers (Diapers)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- yes, its bad when it rains.	

5.7. How did COVID-19 impact your livelihood?
-> The site was closed and we were not allowed into the site for some time.

5.8. Challenges you encountering in general?
-> No shelter nor changing rooms

APPENDIX H

ROOIKRAAL LANDFILL SITE INTERVIEW/QUESTIONNAIRE RECORD SHEETS

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Maureen Chauke..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
M Chauke..... (name of participant)
05/6/2022 (date)

..... (signature)
Irene Inan... (name of person seeking consent)
06/06/2022... (date)

06/06/2022

Maureen Chauke

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
City of Ekurhuleni Employees and CoE Service Providers		
This questionnaire will take approximately 15 - 20 minutes to complete.		
	Questions:	Responses:
1	Stakeholder - General Information	
1.1	What is your role/position in your organisation and what are you responsible for?	
	Rooikraal Site Supervisor	
1.2	How long have you been in that position?	
	Since 2014	
1.3	Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?	
	Yes, elaborate	✓ Site Reclaimers Committee Permit allows them on site
	No	
	I don't know	
	Not my area of responsibility	
1.4	Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni? And how?	
	Permit allows → responsibility of Site Operator	
2	Informal Sector Contribution	
2.1	Is your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?	
	Reduce Volume of waste → increase life span	
2.2	What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?	
	Uncontrolled numbers of a daily and weekly. Therefore cannot know how many are on site	
2.3	Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?	
	CoE can take full responsibility and formalize them through offical registration	
2.4	Are you aware of any success initiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?	
	Yes	
	No	✓
2.5	In your view do you have sufficient data or information on recyclables volume of the informal sector activities in the City of Ekurhuleni ?	
	Yes	✓ OptoAfrica weighbridge
	No	
	Not my area of responsibility	
2.6	What challenges exist in material recovery (recyclables) in City of Ekurhuleni?	
	Waste is mixed and contaminated	
2.7	Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?	
	Not aware	
3	Informal Sector Volumes/Tonnages	
	Who is responsible for data collection and capturing for informal reclaimers material	

3.1	City of Ekurhulleni	✓ Weighbridge
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Other	
	I don't know	
3.2	**Within your area of responsibility, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
	OptoAfrica monthly weighbridge tonnages	
3.3	**How is this data collected or captured from informal reclaimer material recycables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	✓
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables; and if so where and how many?**	
	Germiston (Mpact/Remade) Buy-back Centre.	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	✓
	Paper (Other)	✓
	Plastic (PET)	✓
	Plastic (Other)	✓
	Food waste	✗
	Glass (Bottles)	✓
	Glass (Broken)	✓
	Metal (Steel)	✓
	Metal (Other)	✓
	Rubber	✗
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	✓
	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	✓
	Not my area of responsibility	

06/06/2022

Rooikraal Landfille Site

Focus Group Discussion - Reclaimers

F (1) KHANARE ✓ (1)
(2) SAMMIE ✓ (2)
(3) SBUZISO ✓ (3)
(4) Matubane ✓ X
(5) Maikhona ✓ (4)
(6) Mothafalhi ✓ (1)
(7) Mokhethi ✓ (2)
(8) Hlalele ✓ X
(9) Victor ✓ (3)
(10) Carlos ✓
(11) Tankiso ✓ (4)
F (12) Nhlanhla ✓ (1)
F (13) Gestina ✓ (2)
(14) Hlompho X
(15) Mosotho ✓ (3)
(16) Thabiso ✓ (4)
(17) Thabiso 2 ✓
(18) Khopane ✓ (1)
F (19) Shai ✓ (2)
(20) Mafifi ✓ (3)
(21) Mkosi ✓ (4)
(22) Motsamai ✓
(23) Thabang ✓
(24) Ian ✓

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Chanaie....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Chanaie..... (signature)
..... (name of participant)
.....06/06/2022.. (date)

..... (signature)
.....Irene Inan. (name of person seeking consent)
.....06/06/2022.... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sammie....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
..... (name of participant)
06/06/2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
06/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sbuziso....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Sibusiso (signature)
..... (name of participant)
06/06/2022 (date)

INNyirende (signature)
Irene Inan (name of person seeking consent)
06/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Makubane, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Makubane ..... (signature)
..... (name of participant)
06/06/2022 ..... (date)

INNyirenda ..... (signature)
Irene Inan ..... (name of person seeking consent)
06/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Maikhona....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....YES..... (signature)
..... (name of participant)
.....06/06/2022..... (date)

.....INNyirenda..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....06/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ..Mothakhi....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

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All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
...Mothakhi..... (name of participant)
.....06/06/2022... (date)

..... (signature)
.....Irene Inan... (name of person seeking consent)
.....06/06/2022.... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Mokhethi....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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..... (signature)
..... (name of participant)
.....06/6/2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....06/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Hlalele....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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..... (name of participant)
.....06/06/2022..... (date)

.....INyirenda..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....06/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Victor....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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..... (signature)
..... (name of participant)
.....06/06/2022.... (date)

..... (signature)
.....Irene Inan.....(name of person seeking consent)
.....06/06/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Carlos, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
..... (name of participant)
06/06/2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
06/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Tankiso....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

....Tankiso..... (signature)
..... (name of participant)
....06/06/2022.. (date)

..... (signature)
....Irene Inan..... (name of person seeking consent)
....06/06/2022.. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Nhlanhla....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
.....Nhlanhla..... (name of participant)
.....06/06/2022... (date)

..... (signature)
.....Irene Inan.. (name of person seeking consent)
.....06/06/2022.. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Cresting....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
..... (name of participant)
.....06/06/2022 (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....06/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Hlompho....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
..... (name of participant)
.....06/06/2022 (date)

..... (signature)
.....Irene Inan (name of person seeking consent)
.....06/06/2022.. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Mosotho....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

Mosotho..... (signature)
..... (name of participant)
.....06/06/2022..... (date)

INyirenda
..... (signature)
....Irene Inan..... (name of person seeking consent)
.....06/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Thabiso....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
..... (name of participant)
.....06/06/2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....06/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

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All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
..... (name of participant)
.....06/06/2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....06/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Khopane....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

Thabeng Khopane (signature)
..... (name of participant)
06/06/2022 (date)

INNyirenda (signature)
Irene Inan (name of person seeking consent)
06/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Shai....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

....Shai..... (signature)
..... (name of participant)
.....06/06/2022... (date)

.....INNyirenda (signature)
.....Irene Inan.. (name of person seeking consent)
.....06/06/2022.. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Mafifi..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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...Mafifi... (signature)
... (name of participant)
...06/06/2022... (date)

...INyire... (signature)
...Irene Inan... (name of person seeking consent)
...06/06/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ..Motsamai....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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.....Motsamai..... (signature)
..... (name of participant)
.....06/06/2022..... (date)

.....INyirenda..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....06/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Thabang....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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Thabang..... (signature)
..... (name of participant)
.....06/06/2022..... (date)

INyirenda..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....06/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Tau....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

Tau..... (signature)
..... (name of participant)
.....06/06/2022..... (date)

Inan Nyirenda
..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....06/06/2022..... (date)

06/06/2022

Site has been closed for 1.5 years

Rooikraal Landfille Focus Group Discussion

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	16
	Female	2
1.3	**Employment Status**	
	Working for myself	All for themselves
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	✓
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ 06h00 – 06h00 (12 hours)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	25-28 years
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	
	Trolley Cart	✓
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Rooikraal
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ Remade
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman		
	Buy Back Centre	✓ Remade (always available)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓ by Remade	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	—
	Paper (Other)	✓ Fluctuating	price over
	Plastic (PET)	✓ the period.	
	Plastic (Other)	✓	
	Food waste	✗ Demand/Supply mechanism.	
	Glass (Bottles)	✓	
	Glass (Broken)	✓	
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✗	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓ Remade	
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	No easy.	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation	No	
	Nothing	✓ Roitional register available.	
	Other		
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓ employ them (us)	
	Change of location		

	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	PPE, Hire them, Provide water and toilets	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	No water, no toilet,	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Landfill site.	

APPENDIX I

WELTEVREDEN LANDFILL SITE INTERVIEW/QUESTIONNAIRE RECORD SHEETS

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Siphiwe Mtshali, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Mtshali ..... (signature)
Siphiwe Mtshali ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 ..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
City of Ekurhuleni Employees and CoE Service Providers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
	Landfill Site Supervisor Part of my roles is to ensure compliance in the Landfill and ensure the Site operates within the Waste License	
1.2	**How long have you been in that position?**	
	5 years	
1.3	**Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	
	No X	
	I don't know	
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni? And how?**	
	Yes, I do deal with Reclaimers on a daily basis in the site and one of the roles is to controll and formalizing the reclaimers.	
2	**Informal Sector Contribution**	
2.1	**In your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
	The benefit ~~is~~ ~~bon~~ of recycling also assist the site by increasing Airspace	
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	
2.3	**Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?**	
2.4	**Are you aware of any success initiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes X	Kooikraal Landfill has a better system/Structure dealing with recyclables
	No	
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activities in the City of Ekurhuleni ?**	
	Yes X	
	No	
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni?**	
	Is material Leaving the site and taken to Plastic City and causes alot of litter	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	
3	**Informal Sector Volumes/Tonnages**	

3.1	**Who is responsible for data collection and capturing for informal reclaimers material**	
	City of Ekurhuleni	
	Service Provider appointed by City of Ekurhuleni	Opto Africa appointed by City of Ekurhuleni
	Third Party Entity	
	Other	
	I don't know	
3.2	**Within your area of responsibility, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
	Yes, In our monthly report it shows how much material was recycled during the month	
3.3	**How is this data collected or captured from informal reclaimer material recyclables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale ✓	
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables; and if so where and how many?**	
	At the ~~workplace~~ workface and Public Disposal facility within the site.	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES X	
	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No X	
	Not my area of responsibility	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Weltevreden Boardroom Committee

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature
	Carolina Ernesto						Interview Consent & Attendance
1.	Carolina Ernesto	47	Female	Myself	3	12 years	[illegible]
2.	Maxwell M John	51	MALE	MYSELF	4	15 YEARS	[illegible]
3.							
4.							
5.							
6.							
7.							
8.							

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, MAXWELL M Tohn, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Madwen (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Carolina Chilongo, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Carolina ..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Focus group discussion with the Weltevreden landfill site Reclaimers committee.

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓ (1)
	Female	(1)
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (four days for males and three days for females)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill Site.
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Remade, Mpact, Robus Metals)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	✓ (Consol and Berloni Chinese Recycling)
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre	✓	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	✓	✓
	Glass (Broken)	✓	✓
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify (PVC)	✓	✓
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ (The money we make is not stable but the Slumps is good for business)	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni	✓ (Reclaimers Committee)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-Site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes	✓	
	No		
	Other	✓ (Has provided us with PPE & grants)	
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓ (A functional System at the workface with operations one side and recycling bags one side)	
	Change of location		

	Separation of material at source	
	Other	✓ (Better system)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Change coding for both males and females	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Dead babies (sometimes dismembered), used injections, and diapers - A truck coming to dispose with an active fire	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Dangerous chemical substances in the waste - Reading and writing is a challenge to most reclaimers, especially when a dangerous waste is labelled, it is not effective for them.	

5.7. How has the COVID pandemic impacted your livelihoods as waste pickers?

-> The site was closed, meaning no income for the closure duration

-> At the beginning of the pandemic, there was COVID related safety gear that was used

5.8. General

-> PET is in demand in summer, and SUW in winter.

-> Whenever CoE supplies PPE, they supply only to documented citizens.

-> The reclaimers committee is pleading with the municipality for inclusion in the operations plan and the operations.

-> A demarcated area is needed at the working face for reclaimers.

-> The site is running out of working face space (Airspace) life.

-> Having fire on site leads to the closure, worsening our standard of

-> A recycling center on site is crucial as this will assist with having a functional system.

-> The workface is currently being used as collection point and storage hence it is a challenge to control litter

-> Mayfair storage (currently not in use), Its far and there costs involve

=> The reclaimers are willing to pay for the costs involved, including security. They emphasised on building a functional system with the municipality

-> There are two(2) shifts everyday for waste picking activities

=> Morning Shift : 07:00 - 13:00

=> Afternoon Shift : 13:00 - 17:00

5.8 General Confirmation.

-> Males - Monday to Thursday
Females - Friday to Sunday

-> The poor control of incoming and outgoing of recyclables collecting vehicles. A security was observed waving to vehicles to pass without weighing at the weighbridges

-> The reclaimers committee says it is traumatic whenever a dead baby is discovered, worse when the body is dismembered. Counselling services to those in need should be considered during the formal integration.

-> A compressing machine is needed as part of reclaimers operations as it will save them money

Meeting Attendance Register

Meeting Agenda: Masters Research Discussion with the informal Reclaimers Committee **Site/Location:** Wettevreden Boardroom

Date: 30 June 2022 **Meeting Time:** 09:30

	Name and Surname	Company/Department	Contact No.	Signature
1.	Rocky Mufamadi	Environmental	061 990 7358	
2.	Siphiwe Mtshali	Waste Management	072 326 5951	
3.	MAXWELL JOHN	CHAIRPERSON	076 267 3639	
4.	Gaselima	Chelsea Jee		
5.	MAPHITAL KHUZWAYO	INLWE WASTE	083 451 5006	
6.	Irene Inan	Researcher	0788043077	
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Weltevreden Landfill Site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	Richard Bambani	23	M	Myself	4	3 years	Richard
2.	Juma Adaci	40	M	myself	4	13 years	Juma
3.	Albert Lubaxa	29	M	myself	4	8 years	Albert
4.							
5.							
6.							
7.							
8.							

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Juma Aki, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Juma ..... (signature)
Juma ..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
26/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Albert Lubafe....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Albert..... (signature)
...Albert..... (name of participant)
.....20 June 2022.... (date)

.....Irene..... (signature)
.....Irene Inan... (name of person seeking consent)
.....20/6/2022.... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Richard banbam....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Richard..... (signature)
Richard..... (name of participant)
20 June 2022... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022.... (date)

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached.
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓ (All male)
	Female	
1.3	**Employment Status**	
	Working for myself	✓ (They all works for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (4 days for all)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 - 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?** Attached	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (for all)
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Welterveden Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	X	X
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (Compressing machine)
	I don't know	
	What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?	
5.4	- Providing us with safety wear - Providing us with grants when the site closes.	
	What challenges do you encouter in material recovery (recyclables)	
5.5	- Broken bottles, glass - Dead babies	
	Are any threats that you think will impact your livelihood or the amount of recyclables you collect?	
5.6	- The number of trucks coming to the site going down. - Fire on site - Whenever the site closes.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Weltevreden Landfill Site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	Robson Maenva	20	M	myself	4	2 weeks	
2.	Jito Kwosa	29	M	myself	4	8 years	
3.	Anthony Kwosa	22	M	myself	4	6 months	
4.	Ido Sithole	22	M	myself	4	6 months	
5.	Jeorge Sambo	45	M	myself	4	12 years	
6.	Tomando	37	M	myself	4	10 years	
7.	Samuel Motisi	29	M	myself	4	8 years	
8.	Fabiani Mlongwane	37	M	myself	4	12 years	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Fabiani Hlongwane....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
.....Fabiani..... (name of participant)
...20 June 2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....20/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Robson Macheva....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
.....Robson..... (name of participant)
.....20 June 2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Ido Sithole, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Ido (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Fernando....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
...Fernando..... (name of participant)
...20 June 2022... (date)

..... (signature)
...Irene Inan... (name of person seeking consent)
...20/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Samuel Motsi....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
...Samuel..... (name of participant)
...20 June 2022..... (date)

..... (signature)
...Irene Inan (name of person seeking consent)
.....20/6/2022.. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Jito Kwosa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
...Jito..... (name of participant)
..20.....June.....2022..... (date)

..... (signature)
...Irene Inan... (name of person seeking consent)
.....20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Anthony Zwo Sey....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
...Anthony..... (name of participant)
...20 June 2022..... (date)

..... (signature)
...Irene Inan... (name of person seeking consent)
.....20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, George Jambo, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

JORGE ..... (signature)
George ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

focus group discussion with eight [8] informal reclaimers.

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	All males ✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓ (All work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (four days)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 - 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?** Attached	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Mpeet, Kubus, Benoni Chinese)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓ (we sell everything we reclaim onsite)	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	X	X
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	Always
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (Waste go down a lot in winter)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ (The money we make is not stable)	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-Site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other	✓ (They only give benefits to reclaimers with documentation)	
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- providing us with more trucks - Change rooms for both males and females	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Dead bodies, broken bottles	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Receiving less trucks in winter and the closure of the landfill site.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Wheltenreden Landfill Site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	Francisco S. Matola	42	M	myself	4	13	
2.	Simele Mtunguwa	39	M	myself	4	10	
3.	Sibusiso Ngobe	43	M	myself	4	10	
4.	Sinothi Dlamini	39	M	myself	4	15	
5.	Mhlamukeni Jali	54	M	myself	4	15	
6.	Makhuba Lucky	54	M	myself	4	15	
7.	Sinenjwa Thusing	48	M	myself	4	15	
8.	Alone Mtetwa	21	M	myself	4	13 months	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sinethi Dlamini....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Sinethi Dlamini..... (name of participant)
20/06/22..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Alone Mtetwa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Alone MTETWA..... (name of participant)
20/06/22..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/22..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Emmasco Matola, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

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I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Emmasco Z MATOLA (name of participant)
20/06/22 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/22 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lucky Makhuba, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Lucky Makhuba (name of participant)
20/06/22 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/22 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sthenjwa Thusine, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Sthenjwa Thusine (name of participant)
20/06/22 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Simele Mtungwa, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
SIMELE MTUNGWA (name of participant)
20/06/22 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/22 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mhlamukeni Jali....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

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I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
MHLAMUKENI JALI..... (name of participant)
20/06/22..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sibusiso Ngobe....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....NGOBE..... (signature)
.....SIBUSISO NGOBE..... (name of participant)
.....20/06/22..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....20/6/2022..... (date)

Focus group discussion with eight (8) informal reclaimers.

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	Attached
	Male	✓ (All males)
	Female	
1.3	**Employment Status**	Attached
	Working for myself	
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (All work 4 days per week)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 – 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✗	✗
	Glass (Bottles)	✓	✓
	Glass (Broken)	✓	✓
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (Business is good in summer)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ (Money collected is never stable)	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (Onsite Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes	✓ (They allow us to work in shifts)	
	No		
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (storage facility)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	-> Providing us with safety gloves against injections	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Broken glass - Dead babies and used injections	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Having fire on site leading to the closure	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Wetterveden Landfill Site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	Whatmore Chimaperia	40	M	myself	4	7	[illegible]
2.	Thabiso Dube	26	M	myself	4	6	[illegible]
3.	Everest Maechaba	60	M	myself	4	12	[illegible]
4.	Samuel Ngungwe	42	M	myself	4	12	Samuel
5.	Frings Bhebhe	24	M	myself	4	2	—
6.	Joseph Ndlovu	30	M	myself	4	2	[illegible]
7.	Mthokozisi	30	M	myself	4	2	[illegible]
8.	Isaac Moyo	30	M	myself	4	9	[illegible]

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Whatmore Chimgera, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Whatmore (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Thabiso Duke....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
.....Thabiso..... (name of participant)
.....20 June 2022 (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Everest Mathebula....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....(signature)
Everest..... (name of participant)
20 June 2022... (date)

.....(signature)
Irene Inan..... (name of person seeking consent)
20/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Samuel Ngogale, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Samuel Ngungule ..... (signature)
Samuel ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Princes Bhebhe....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
...Princes..... (name of participant)
...20.....June 2022.... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
.....20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Joseph Nabenti....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
....Joseph..... (name of participant)
....20 June 2022.... (date)

..... (signature)
....Irene Inan..... (name of person seeking consent)
....20/6/2022.... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mtshutshisi....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Mtshutshisi..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Isaac Moyo, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

I. Moyo ..... (signature)
Isaac ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

focus group discussion with eight (8) informal reclaimers.

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached.
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓ (All males)
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (four days for all)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 - 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?** Attached	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓ (We sell our recyclables at workforce)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✗	✗
	Glass (Bottles)	✗	✓
	Glass (Broken)	✗	✗
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber		
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ (Money has been going down)	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (We are dependant on reclaiming)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No		
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (Change rooms & toilets)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Recycling center - Compressing machine	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- used injections - dead bodies - used diapers - Dangerous waste	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Having hard lockdown like before.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Weltevreden Landfill Site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	Fedricks Phephe	46	M	myself	4	1 year	
2.	Nzuma Sibanda	33	M	myself	4	5 years	
3.	Mpumelelo Bhebhe	52	M	myself	4	11 years	
4.	Mahlobo Sibanda	30	M	Myself	4	2 years	
5.	Kwenza Dlamini	40	M	Myself	4	22 years	
6.	Nicholas Sibanda	40	M	myself	4	7 years	
7.	Thomas Mathebula	41	M	myself	4	4 years	
8.	Courage Manika	27	M	myself	4	3	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Fedrick Phephe....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Fedrick..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mpumelelo Phe, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Mpumelelo..... (name of participant)
20 June 2022... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Msizwe Sibanda, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Msizwe ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mehlolo Sibanda....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
...Mehlolo..... (name of participant)
...20 June 2022... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
.....20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Kwenza Dlamini, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Kwenza ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Animas Maithebulg....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Animas..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Decklas Sibanda, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Decklas ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Courage Mariba....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Mariba ..... (signature)
Courage ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

focus group discussion with eight (8) informal reclaimers at Wetteveden Landfill Site

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓ (All Males)
	Female	
1.3	**Employment Status**	
	Working for myself	✓ (All work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (four days, all work for four days)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 – 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?** Attached	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Wetteveden Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer	
	Middleman	✓ (At the workfree)
	Buy Back Centre	
	Producer Responsibility Organisation	
	Other	
3.4	**How do you measure your recyclables**	
	Volumetric fill of bags (estimate)	
	Mobile scale	✓ (Belongs to the buyer)
	Landfill site weighbridge	
	I don't measure - someone else's responsibility	

3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	X	X
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify (PVC)	✓	✓

3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓ (Always)	

4	**Material Recoverables (Quantities)**	
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**	
	Yes	✓
	No	
	Don't know	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**	
	Yes	✓
	No	
	Don't know	
4.3	**Will you continue to work in this area?**	
	Yes	✓ (It is a great field to work on)
	No	
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**	
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**	
	City of Ekurhuleni	
	Buy Back Centre	
	Producer Responsibility Organisation	
	Nothing	
	Other	✓ (On-site Reclaimers Group)
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**	
	Yes	✓
	No	
	Other	✓ (They have allowed to reclaim on site)
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**	
	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	

	Separation of material at source	
	Other	✓
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Compressing Machine - working space and safety gear	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-> used diapers -> Rain, dust, dead babies	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	The size closing.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Weltevreden Landfill Site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	Puke Rakgomo	23	Male	Myself	4	4 years	
2.	Selemani Updala	53	Male	Myself	4	13 years	
3.	Mzi Mamini	34	M	Myself	4	10 years	
4.	Albert Ndabezitha	52	M	Myself	4	1 years	
5.	Sipho Twala	40	M	Myself	4	10 years	
6.	Themba Dlamini	49	M	Myself	4	12 years	
7.	Rogerio Ramze	45	M	Myself	4	13 years	
8.	Fernando Ragnie	24	M	Myself	4	2 years	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Fernando Rogne....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Fernando..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sipho Twala, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Sipho (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Albert Ndaberitha....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....(signature)
...Albert..... (name of participant)
...20 June 2022.. (date)

.....(signature)
...Irene Inan... (name of person seeking consent)
...20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Selemani Ugtak....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....A Lodda..... (signature)
.....Selemani..... (name of participant)
....20 June 2022.... (date)

.....Inyirenda..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....20/6/22..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Themba Dlamini, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

X
..... (signature)
Themba (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Pule Rakgomo....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
.....Pule..... (name of participant)
.....20 June 2022..... (date)

.....Nyirenda..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Mzi Manzini....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
.....Mzi..... (name of participant)
.....20 June 2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Rogerio Banze....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Rogerio..... (name of participant)
20 June 2022.. (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022.. (date)

A focus group discussion with eight (8) informal Reclaimers at Weltevreden Landfill site.

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓ (All Male)
	Female	
1.3	**Employment Status**	
	Working for myself	✓ (All work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (Four (4) days for all)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Remade)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓ (On-site at the workface)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓ (The scale belongs to the buyer on site)	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✗	✗
	Glass (Bottles)	✗	✗
	Glass (Broken)	✗	✗
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber (PVC)	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	All the time
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (Our only source of income)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-Site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (Recycling Center)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Shelter, toilets - Drinking water	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	→ Broken glass → Dead babies and used injections	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	The number of trucks coming to the site going down.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Wetteveden Landfill Site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	Kubay Kubaleq	42	M	myself	4	15 years.	
2.	Mzwanele Mdebuku	44	m	myself	4	15 years	
3.	Cebani ndlovu	22	m	myself	4	3 years	
4.	Albert ndlovani	53	m	myself	4	15 years	
5.	Mkhuleni Dlamini	44	m	myself	4	15 years	
6.	Christian Jali	29	m	myself	4	9 years	
7.	Ramendo msinde	53	m	myself	4	15 years	
8.	Patrick Bapela	46	M	Myself	4	15 years	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Christian Jali, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Christian ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mkhulani Dlamini, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

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I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Mkhulani ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Albert Mdibani....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Albert..... (name of participant)
20 June 2022. (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Patrick Bapela....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Patrick..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Ramendo Msinde....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Ramendo..... (name of participant)
20 June 2022... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ..Kubu Samuel Mambelo..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
...Kubu..... (name of participant)
...20 June 2022..... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
.....20/6/2022.. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mzwanele Mdebuka....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Mzwanele..... (name of participant)
20 June 2022... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Cebani Ndlovu....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Cebani..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022..... (date)

Focus group discussion with eight (8) informal reclaimers at Weltevreden Landfill site

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓ (All males)
	Female	
1.3	**Employment Status**	
	Working for myself	✓ (All work individually)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ ~~(07:00 – 13:00)~~
	≤ 5	✓ (four days for all)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 – 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?** Attended	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (All the time)
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill Site (Always)
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Remade, Consol, Kobus)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓ (At the working fence)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓ (The middleman that buys has it)	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	↑	✗
	Glass (Bottles)	✓	✓
	Glass (Broken)	✗	✗ ✓
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify (PET)	✓	✓
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓ (we always deliver)	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (Business, it hasn't recovered from COVID)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (We enjoy working in the sector)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-Site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes	✓ (They provided us with PPE)	
	No		
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (shelter and grants)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Charge rooms - Drinking water	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Severe weather conditions - dead bodies	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	fire and closure of the site.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: ~~[illegible]~~ Wattelvredon Landfill site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	Joe Luna	35	M	myself	4 days	15 years	
2.	Thomas Chihimaga	28	M	myself	4 days	15 years	
3.	I Gal	45	M	myself	4 days	15 years	I Gal
4.	Khosa	52	M	myself	4 days	30 years	+
5.	Moises Jovo	42	M	myself	4 days	9 years	Moises
6.	T. Mhango	52	M	myself	4 days	8 years	T Mhango
7.	Mosa Langa	41	M	myself	4 days	10 years	
8.	Refilo Nhowe	30	M	myself	4 days	9 years	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, IOÃO LUNA, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Luna (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Thomas Chimange, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Thomas (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Leamo Simone T., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
..... (name of participant)
..... (date)

..... (signature)
..... (name of person seeking consent)
..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Khosa, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

X ..... (signature)
Khosa ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Moises Jovo....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Moises ..... (signature)
Moises ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, T. Nhongo, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

T. Nhongo ..... (signature)
T. Nhongo ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, MUSA LANGA, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
MOSA (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, REFILA NHONE....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Refila..... (name of participant)
20 June 2022.... (date)

..... (signature)
Irene Inan.... (name of person seeking consent)
20/6/2022.. (date)

. Focus group discussion with eight (8) informal reclaimers.

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached.
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓ (All male)
	Female	
1.3	**Employment Status**	
	Working for myself	✓ (All work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (4 days, all work 4 day)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 – 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached.
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (All the time
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Remade, Consol)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	✓	✓
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber		
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No		
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (Shelter and toilets)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- providing us with the compressing machine - Working space for us at the workface	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	→ Deceased babies — used pampers → Broken Glass	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	→ Dealing with dangerous chemicals without being aware.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Wattenreden Landfill site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	Anton Mthuki	44	M	Self	4	20	
2.	Anton Shilenlee	43	M	Self	4	20	
3.	Mathuseli Mpofu	22	M	Self	4	2	
4.	Ngabutho Mpala	28	M	Self	4	10	N. Mpala
5.	David Kamba	32	M	Self	4	11	D. Kamba
6.	Tencen Nkomo	32	M	Self	4	8	
7.	Emanuel Mpala	25	M	Self	4	7	
8.	Melusi Mpala	25	M	Self	4	3	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Anton Mthuki, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Anton ..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Anton Shilenko, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Anton ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mathuseli Mpofu, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Mathuseli ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Ngabutho Mpala....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

N Mpala ..... (signature)
Ngabutho ..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, David Kamba, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

D. Kamba ..... (signature)
David ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Tencen Alkomo, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

T. Alkomo ..... (signature)
Tencen ..... (name of participant)
20 June 2022 ..... (date)

INyirenda ..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 (date)

Foromo ea Tumello ea Lipatlisiso - Lethathamo la Lipotso

Sehlooho sa morero: Lekala la Litšila le sa Reroang Toropong ea Ekurhuleni

Lebitso la mofuputsi: Irene Inan (nee Nyirenda) - Nomoro ea Seithuti: 0208508J

Ke, ..Melusi Mpela....., ke lumela ho nka karolo morerong ona oa lipatlisiso tsa lipuisano. Ke fuwe lesedi mabapi le dipatlisiso tse mabapi le lekala la matlakala a sa reroang mme ka buisana ka morero wa dipatlisiso le Irene Inan (nee Nyirenda) ya ntseng a etsa dipatlisiso tsena e le karolo ya lengolo la masters le okametsweng ke Dr. Anne Fitchett Univesithing ya Witwatersrand (Sekolo sa Civil & Boenjiniere ba Tikoloho). Ke hlaloselitsoe lipatlisiso mme ke utloisisa hore na ho nka karolo ha ka ho tla kenyelletsa eng. Ke lumellana le tse latelang:

(Ka kopo etsa selikalikoe likhethong tse amehang ka tlase).

Ke lumela hore ho nka karolo ha ka ho tla lula ho sa tsejoe.	YES	NO
Ke lumela hore ho nka karolo ke boithaopo, 'me nka ikhula ho tsoa lipatlisisong neng kapa neng.	YES	NO
Ke lumela hore mofuputsi a ka sebelisa mantsoe a mang a sa tsejoeng tlalehong ea hae ea lipatlisiso.	YES	NO
Ke lumela hore linepe li ka nkuoa kapa tsa koptjoa.	YES	NO

Lifoto life kapa life tse nkuoang e tla ba tsa ho etsa litšoantšo feela tsa mesebetsi e ntseng e etsoa, 'me litšoantšo li ke ke tsa sebelisoa kae kapa kae haese morero feela oa mosebetsi oa lipatlisiso. Ke lumela hore Mofuputsi a ka nka linepe.

Liprothokholo tsohle tsa Covid-19 li tla lateloa nakong ea lipuisano tsa sefahleho le sefahleho.

..... (tekeno)
.....Melusi..... (lebitso la monkakarolo)
..20.....June.....2022..... (letsatsi)

..... (tekeno)
.....Irene Inan..... (lebitso la motho ya batlang tumello)
.....20/6/2022..... (letsatsi)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Emanuel Mpala, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Emanuel ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

. Focus group discussion with eight (8) informal reclaimers.

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓ (All males)
	Female	
1.3	**Employment Status**	
	Working for myself	✓ (They all work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (four days, all work for 4 days)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (for all)
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓ (At the workface)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	X	X
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify (PVC)	✓	✓
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓ (Always)	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓ (We make our living through reclaiming)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimer Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	(Drinking water)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Shelter -> Change rooms	- PVC gloves - Safety gear.
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- used diapers, tempons - Dead babies	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> A truck with fire on it -> The closure of the landfill.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Wetteivreden Landfill Site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	Makhetha Soulaha	21	M	myself	4 days	2 years	M. Soulaha
2.	Chen Ali	34	M	myself	4 days	5 years	Ali
3.	Montsi Makhaba	36	M	myself	4 days	5 years	Montsi
4.	Ayanda Dlamini	26	M	myself	4 days	5 years	[illegible]
5.	Innocent ngubani	32	M	myself	4 days	22 years	ngubane
6.	Vincent Vkomozana	30	M	myself	4 days	12 years	[illegible]
7.	Musa mvelase	28	M	myself	4 days	10 years	[illegible]
8.	Meluzi Mhlanga	36	M	myself	4 days	15 years	[illegible]

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Innocent Mgubani, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Innocent (signature)
Innocent (name of participant)
20 June 2022 (date)

(signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Makhetha Sontaha....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

M. Sontaha..... (signature)
Makhetha..... (name of participant)
20 June 2022... (date)

Inyirenda..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Ayanda Mamini, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Ayanda ..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Melusi Mhlanga, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Melusi ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Montsi Makhaba agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Montsi ..... (signature)
Montsi ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Chuu Au....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Au..... (signature)
Chuu..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Vincent Ukomazana, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Vincent ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Musa Mvelase, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Musa ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

focus group discussion with eight (8) informal reclaimers

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓ (All males)
	Female	
1.3	**Employment Status**	
	Working for myself	✓ (All work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (4 days, all work four days)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07'00 – 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (For all)
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Wetteveden Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓ (At the work place after reclaiming)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	X	X
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify (PVC)	✓	✓
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	Always
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (Some trucks are no longer coming).	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (Change rooms)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	-> Social grant -> Storage facility -> Shelter -> PPE	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Dead babies -> Broken glass - Used diapers	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> Running out of space for us at the working face	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Welterredren Landfill Site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent + Attendance
1.	Msizwe Sikanda	41	M	myself	4	13	[illegible]
2.	mpumelelo Jali	28	M	myself	4	7	[illegible]
3.	Thembo Mkamazi	29	M	myself	4	15 years	[illegible]
4.	Vusi Nkambule	49	M	myself	4	20	[illegible]
5.	Deni Sitoe	21	M	myself	4	2	[illegible]
6.	Khulani Sibonelo	38	M	myself	4	12	[illegible]
7.	Armando Matuss	27	M	myself	4	6	[illegible]
8.	Paulos Chanso	34	M	myself	4	13	[illegible]

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mpumelelo Jeff....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Mpumelelo..... (name of participant)
20 June 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Msizwe Sibanda....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
...Msizwe..... (name of participant)
...20 June 2022.... (date)

..... (signature)
...Irene Inan.... (name of person seeking consent)
.....20/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Khulani Sitoncke..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
...Khulani..... (name of participant)
...20 June 2022... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
...20/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, PAULOS CHONSO, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Paulos ..... (name of participant)
20 June 2022 ... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Deni Sitoe, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Deni ..... (name of participant)
20 June 2022 (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Vusi - Nkambule....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
..... (name of participant)
....22 June 2022... (date)

..... (signature)
....Irene Inan..... (name of person seeking consent)
.....29/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Themba Nkomazi agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Themba ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ANMANDO MATISS agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Anmando Matiss ... (name of participant)
20 June 2022 ... (date)

..... (signature)
Irene Inan ... (name of person seeking consent)
20/6/2022 ... (date)

focus group discussion with eight (8) informal reclaimers.

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓ (All males)
	Female	
1.3	**Employment Status**	
	Working for myself	✓ (They all work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (four(4) days for all)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 – 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓ (At the workface)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X ✓	X ✓
	Glass (Bottles)	✓	✓
	Glass (Broken)	X ✓	X ✓
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	Always
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (The number of trucks coming to the site has been declining)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-Site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other	✓ (They have given permission to reclaim)	
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (Grants)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	-> Recycling center with compressing machine -> Change rooms.	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Broken glass / bottles -> Dead babies, used tampons	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> Having fire on site, and the pandemic with lockdowns.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Weltevreden Landfill Site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	RODERICK MBEBLE	27	M	Myself	4	6	[illegible]
2.	LUCAS MASINGA	31	M	myself	4	10	[illegible]
3.	Justin Ndale	37	M	myself	4	12	[illegible]
4.	James Manhisa	37	M	myself	4	9	[illegible]
5.	Misani	42	M	myself	4	12	[illegible]
6.	Ufer Ajal	30	M	myself	4	12	[illegible]
7.	C. Mujana	29	M	myself	4	4	[illegible]
8.	Alberto Novelo	50	M	myself	4	15	[illegible]

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Alberto Manela....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Alberto Manela..... (name of participant)
20/06/22..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Roderick Mbebe....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
RODERICK MBEBE..... (name of participant)
20/06/22..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Lucas Massinyane....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Lucas..... (signature)
Lucas Massinyane (name of participant)
20/06/22 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...C. Meerjane....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
..... (name of participant)
.....20/06/22..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Justine Msube, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Justine Msube (name of participant)
20/06/22 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, James Manhiger, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
James Manhiger (name of participant)
20/06/22 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Misani Funeka....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
MISANI FUNEKA (name of participant)
20/06/22 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lifer Ajat....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Lifer Ajat..... (name of participant)
20/06/22..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20/6/2022..... (date)

A focus group discussion with eight(8) informal reclaimers.

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓ (All males)
	Female	
1.3	**Employment Status**	
	Working for myself	✓ (Everyone interviewed work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (four (4) days for all)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (for all interviewed)
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Vlakfontein Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Remade, MPact)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	✓ (consol)
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓ (We sell our recyclables at the work face)	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	✓	✓
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	Always
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On Site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Providing us grants whenever the site closes. - Shelter, safety wear, PVC gloves	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-> Waste coming into the site being in fire.	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> Having fire on site.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Wettenveden landfill site

Date: 20 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent + Attendance
1.	JAMES DAGLIOR	47	M	Myself	4	14	
2.	Simo Vilalas	48	M	Myself	4	10	
3.	ARMANDO JAVANE	43	M	Myself	4	16	
4.	TREVOR KALANGA	30	M	Myself	4	22	
5.	Vitorino Jorge Baloi	47	M	Myself	4	12 years	
6.	Welcome Dlamini	22	M	Myself	4	2 months	
7.							
8.							

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Wekome Dlamini, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Wekome ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Armando Javane....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
ARMANDO JAVANE (name of participant)
20/06/23 (date)

..... (signature)
Irene Inan (name of person seeking consent)
20/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, James Daylior....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....JAMES..... (signature)
.....JAMES..... (name of participant)
.....20/06/22..... (date)

.....Inan..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....20/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Trevor Kalanga....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

TKulanga ..... (signature)
TREVOR KALANGA ..... (name of participant)
20/06/22 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Vitonno Busol, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Vitonno ..... (name of participant)
20 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
20/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Simon Vilakazi....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
SIMON VILAKAZI..... (name of participant)
20/06/22..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
20.6.2022.... (date)

: focus group discussion with six(6) informal reclaimers.

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓ (All males)
	Female	
1.3	**Employment Status**	
	Working for myself	✓ (All work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (4 days for all)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 - 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer	
	Middleman	✓ (At the workface)
	Buy Back Centre	
	Producer Responsibility Organisation	
	Other	
3.4	**How do you measure your recyclables**	
	Volumetric fill of bags (estimate)	
	Mobile scale	✓ (They belong to the buyers)
	Landfill site weighbridge	
	I don't measure - someone else's responsibility	

3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	X	X
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		

3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	we deliver all the time
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (The venue of bottles hardly goes up)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	✓
	Other	✓ (storage facility)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	-> PVC gloves -> Grants -> Theunye rooms -> More trucks	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-> Broken glass -> Dead babies	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> The site closing.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Weltevreden Landfill Site

Date: 24 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	Tiwinha	23	f	myself	3	2	Tiwinha
2.	Violeta Daili	27	f	myself	3	2	violeta
3.	Olga Mauze	23	f	myself	3	1	Olga
4.	Saulina mazive	45	f	myself.	3	11	[illegible]
5.	Betty Mzivhi	39	f	myself	3	2	Betty
6.	Edith Chihlago	31	f	myself	3	8	Aid
7.	Lizzette Tomuch	26	f	myself	3	4 months	Lizzette
8.	Justina Zungeze	43	f	myself	3	9 years	[illegible]

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Tininha....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached..... (signature)
.....Tininha..... (name of participant)
.....24 June 2022... (date)

Inan..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022.. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Violeta Dati, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
Violeta ..... (name of participant)
24 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ..Olga Mcube....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
.....Olga..... (name of participant)
...24 June 2022... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sauline Muzile, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
Sauline ..... (name of participant)
24 June 2022 .. (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Betty.....Mzimi....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Attached..... (signature)
...Betty..... (name of participant)
.....24 June 2022 (date)

.....Irene..... (signature)
...Irene Inan..... (name of person seeking consent)
.....24/6/2022... (date)

Ifomu Lemvume Yokucwaninga (Research Consent Form)

Isihloko sephrojekthi: Umkhakha Kadoti Ongahlelekile eDolobheni lase-Ekurhuleni

Igama lomcwaningi: U-Irene Inan (nee Nyirenda) - Inombolo yomfundi: 0208508J

Mina, Lizette Tomas....., ngiyavuma ukubamba iqhaza kulo msebenzi wocwaningo lwenhlolokhono. Nginikezwe ulwazi mayelana nocwaningo lomkhakha wemfucuza engekho emthethweni ngase ngixoxisana ngohlelo locwaningo no-Irene Inan (nee Nyirenda) owenza lolu cwaningo njengengxenye yeziqu ze-masters eziqondiswa uDkt. Anne Fitchett eNyuvesi yaseWitwatersrand (School of Civil). Nobunjiniyela Bezemvelo). Ucwaningo seluchazelwe mina futhi ngiyaqonda ukuthi ukuhlanganyela kwami kuzobandakanyani. Ngivumelana nalokhu okulandelayo:

(Sicela ubiyele izinketho ezifanele ngezansi).

Ngiyavuma ukuthi ukuhlanganyela kwami kuzohlala kungaziwa	YEBO	CHA
Ngiyavuma ukuthi ukuhlanganyela kungokuzithandela, futhi ngingahoxa ocwaningweni nganoma yisiphi isikhathi.	YEBO	CHA
Ngiyavuma ukuthi umcwaningi angasebenzisa izingcaphuno ezingaziwa embikweni wakhe wocwaningo	YEBO	CHA
Ngiyavuma ukuthi inhlolokhono ingase irekhodwe	YEBO	CHA
Ngiyavuma ukuthi izithombe zingathathwa	YEBO	CHA

Noma yiziphi izithombe ezithathwayo zizoba ngezokukhombisa kuphela imisebenzi eyenziwayo, futhi izithombe ngeke zisetshenziswe kwenye indawo ngaphandle kwenhloso yocwaningo kuphela. Ngiyavuma ukuthi Umcwaningi angathatha izithombe.

Wonke amaphrothokholi e-Covid-19 azolandelwa ngesikhathi sokuxoxisana ubuso nobuso.

Attached
..... (signature)
Lizette ..... (name of participant)
1st June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Justina Zungu....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
Justina ..... (name of participant)
24 June 2022 ... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ... (date)

: focus group discussion with eight (8) informal reclaimers

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓ (All females
1.3	**Employment Status**	
	Working for myself	✓ (They all work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (3 days, friday to sunday)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 — 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (All of us)
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	x	x
	Glass (Bottles)	x	x
	Glass (Broken)	x	x
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify (PVC)	✓	✓
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓ (Always)	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (No one is hiring anymore)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-Site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (Safety Wear)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	-> Change rooms -> A recycling center -> Safety gloves	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-> Dead babies -> used pads, injections and broken bottles	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> Whenever there's a huge fire on site, the site is forced to close. -> We would like to get more awareness in relation to the fire and the landfill.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Welterweden Landfill Site

Date: 24 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature Interview Consent & Attendance
1.	Lolly Sibande	25	F	myself	3	5 years	[illegible]
2.	Nosipho Sibande	28	F	myself	3	6	Nozipho
3.	Angelic Mshanga	31	F	myself	3	2 months	Apgelina
4.	Annetha Nyamahingala	30	F	myself	3	1 year	Annetha
5.	Suzan Sangambwe	34	F	myself	3	2 months	[illegible]
6.	Deolinda Joaquim	34	F	myself	3	1 years	Deolinda Joaqui
7.	Sonia Khoza	32	F	myself	3	2 years	Sonia
8.	Samukeli Manyeki	28	F	myself	3	3	Smanyeta

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Betty Sibide....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Betty Sibide..... (signature)
.....Betty..... (name of participant)
.....24 June 2022... (date)

.....Irene Inan..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/22... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Masipho Sidinde....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...attached..... (signature)
...Masipho..... (name of participant)
...24 June 2022... (date)

...Irene Inan..... (signature)
...Irene Inan... (name of person seeking consent)
...24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Annetha Nyamahwa, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
Annetha ..... (name of participant)
24 June 2022 ..... (date)

INyirenda ..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	X	X
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓ (we always deliver)	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know	✓ (most of us are new)	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (There's no employment out there)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-Site Reclaimers Group	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	
	Change of location	
	Separation of material at source	
	Other	✓ (Recycling facility)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	-> Change rooms and toilets	
	-> Shelter	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-> used pads, diapers and dangerous substances (chemicals)	
	-> Dead babies	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> Discovering dead babies, it never stops	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Weltevreden Landfill Site

Date: 24 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature *Interview Consent & Attendance
1.	Sindisiwe Ndlanzi	30	F	Myself	3	9 years	S.N. dlanzi
2.	Lindiwe Dimaza	46	F	Myself	3	9.	[illegible]
3.	Maureen Bhebhe	46	F	Myself	3	11 years	MBhebhe
4.	Carol Shilenge	40	F	myself	3	12 years	[illegible]
5.	Namazulu Ncube	43	F	Myself	3	13 years	Nkube
6.	Simelo Sibanda	32	F	Myself	3	11 years	Sibanda
7.	Sikhangezine Ncube	40	F	Myself	3	10 years	[illegible]
8.	Talent Bhebhe	29	F	Myself	3	13 years	bhebhe

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Sindisiwe Ndlanzi....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

S.N. Ndlanzi..... (signature)
Sindisiwe..... (name of participant)
24/06/2022.. (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lindiwe Dinazo, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Lindiwe ..... (name of participant)
24/06/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Nomazulu Ncube....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Ncube..... (signature)
.....Nomazulu..... (name of participant)
.....24/06/2022... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Maureen Bhebhe....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

M Bhebhe..... (signature)
Maureen..... (name of participant)
24/06/2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Carol Shilenge....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Carol ..... (name of participant)
24/6/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Simelo Sibanda....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Sibanda..... (signature)
Simelo..... (name of participant)
24/06/2022.. (date)

..... (signature)
Irene Inan.... (name of person seeking consent)
24/6/2022.. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Talent Bhebhe....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

T. Bhebhe ..... (signature)
Talent ..... (name of participant)
24/06/22 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sikhangezane Ncube, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Sikhangezane ..... (name of participant)
24/06/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

focus group discussion with eight (8) informal reclaimers

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓ (All females)
1.3	**Employment Status**	
	Working for myself	✓ (They all work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (3 days, Friday to Sunday)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 - 13:00
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (for all)
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓ (On site at the workfare)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✗	✗
	Glass (Bottles)	✓	✓
	Glass (Broken)	✗	✗
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify (PVC)	✓	✓
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	Always
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (We make our living through waste picking)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On Site Reclaimer Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes	✓ (They allow to work on site)	
	No		
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (shelter)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	→ change rooms → Grants → A recycling facility	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	→ Broken glass - used injection → used pads, dead babies	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	→ Whenever the site closes	

5.7 General

→ The waste recyclables compressing machine

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Weltevreden Landfill Site

Date: 24 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature *Interview Consent & Attendance
1.	Adnirano machava	55	M	myself	6 ~~weeks~~	12 years	Adriano
2.	Beauty khoza		F	myself	3 ~~weeks~~	7 years	BS
3.	Thulisile Skhusana	39	F	myself	3 days	8 years	8
4.	Fartmer	49	F	myself	3 ~~weeks~~ days	12 years	O
5.	Chilundo	33	F	myself	3 ~~weeks~~ days	1 year	Chilundo
6.	Patience nkomo	45	F	myself	3 ~~weeks~~ days	11 years	Dikomo
7.	Grace Mamini	24	F	myself	5 ~~weeks~~ days	1 year	Gsoka
8.	Benedita Seremwe	26	F	myself	3 ~~weeks~~ days	1 years	Seremwe

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Beauty Khoza, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

BS ..... (signature)
Beauty ..... (name of participant)
24 June 2022 ..... (date)

INyirenda ..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Thulisile Skhosana, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Thulisile ..... (name of participant)
24 June 2022 (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ... (date)

Research Consent Form - ~~Questionnaire~~ Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Fortimer J. Khoza, agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that Photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

..... (signature)
.....Fortimer..... (name of participant)
.....24 June 2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022. (date)

Ifomu Lemvume Yokucwaninga (Research Consent Form)

Isihloko sephrojekthi: Umkhakha Kadoti Ongahlelekile eDolobheni lase-Ekurhuleni

Igama lomcwaningi: U-Irene Inan (nee Nyirenda) - Inombolo yomfundi: 0208508J

Mina, candida chilundo, ngiyavuma ukubamba iqhaza kulo msebenzi wocwaningo lwenhlolokhono. Nginikezwe ulwazi mayelana nocwaningo lomkhakha wemfucuza engekho emthethweni ngase ngixoxisana ngohlelo locwaningo no-Irene Inan (nee Nyirenda) owenza lolu cwaningo njengengxenye yeziqu ze-masters eziqondiswa uDkt. Anne Fitchett eNyuvesi yaseWitwatersrand (School of Civil). Nobunjiniyela Bezemvelo). Ucwaningo seluchazelwe mina futhi ngiyaqonda ukuthi ukuhlanganyela kwami kuzobandakanyani. Ngivumelana nalokhu okulandelayo:

(Sicela ubiyele izinketho ezifanele ngezansi).

Ngiyavuma ukuthi ukuhlanganyela kwami kuzohlala kungaziwa	YEBO	CHA
Ngiyavuma ukuthi ukuhlanganyela kungokuzithandela, futhi ngingahoxa ocwaningweni nganoma yisiphi isikhathi.	YEBO	CHA
Ngiyavuma ukuthi umcwaningi angasebenzisa izingcaphuno ezingaziwa embikweni wakhe wocwaningo	YEBO	CHA
Ngiyavuma ukuthi izithombe zingathathwa noma zicelwe.	YEBO	CHA

Noma yiziphi izithombe ezithathwayo zizoba ngezokukhombisa kuphela imisebenzi eyenziwayo, futhi izithombe ngeke zisetshenziswe kwenye indawo ngaphandle kwenhloso yocwaningo kuphela. Ngiyavuma ukuthi Umcwaningi angathatha izithombe.

Wonke amaphrothokholi e-Covid-19 azolandelwa ngesikhathi sokuxoxisana ubuso nobuso.

chilundo ..... (signature)
Candida ..... (name of participant)
24 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Adriano Machava, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Adriano ..... (signature)
Adriano ..... (name of participant)
24 June 2022 (date)

Inyirenda ..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Patience Nkomo, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

PNkomo ..... (signature)
Patience ..... (name of participant)
27 June 2022 ..... (date)

INyirenda ..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - ~~Questionnaire~~ Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Benfactor Seremwe, agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that Photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

Seremwe ..... (signature)
Benfactor ..... (name of participant)
24 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Graça Manuel....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Graça..... (signature)
.....Graça..... (name of participant)
.....24 June 2022. (date)

.....Inan..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022..... (date)

focus group discussion with eight (8) informal reclaimers

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓ (All females)
1.3	**Employment Status**	
	Working for myself	✓ (They all work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (three days for all, friday to Sunday)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 – 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (for all)
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Wetterreden landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓ (On site at the workface)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✗	✗
	Glass (Bottles)	✗	✗
	Glass (Broken)	✗	✗
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify (PVC)	✓	✓
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓ (Always)	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (We only pick waste for a living)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (PVC Gloves)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	-> Compressing machine ->	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-> Dead babies -> used injections, diapers & tempons	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> The closure of the site. -> Having a small space to work on.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Welltevreden Landfill Site

Date: 24 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature * Interview Consent & Attendance
1.	Sarah Chuiza	45	f	Myself	3	9 years	Sara
2.	Christiana	47	f	myself	3	6 years	Christiana
3.	Patience Mlambo	34	f	myself	3	2years	P.Mlambo
4.	Jouhana Bela	29	F	myself	3	3months	Jouana
5.	Tereraji Nhongo	47	f	myself	3	12 years	T.Nhongo
6.	Mary Khumbula	30	f	myself	3	9 years	Mary Khumbula
7.	Facewell Dube	40	f	myself	3	5 years	[illegible]
8.	Rosmapine	28	f	Myself	3	5 month	Rosina

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Rosina Ramapine, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Rosina ..... (signature)
Rosina ..... (name of participant)
24 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ..Facewell.....Dube....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Fdube..... (signature)
....Facewell..... (name of participant)
.....24 June 2022.... (date)

.....Inan..... (signature)
....Irene Inan..... (name of person seeking consent)
.....24/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mavis Khumbula....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

MavisKhumbula... (signature)
.....Mavis..... (name of participant)
...24 June 2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Tereraji Naongo, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

T. Naongo ..... (signature)
Tereraji ..... (name of participant)
24 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Johana Bela....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Johana..... (signature)
Johana..... (name of participant)
..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Patience Mlambo, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

P. Mlambo ..... (signature)
Patience ..... (name of participant)
24 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Christiana....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Christiana ..... (signature)
Christina ..... (name of participant)
24 June 2022 ... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sarah Chirenje....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Sara..... (signature)
Sarah..... (name of participant)
24 June 2022.. (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
24/6/2022.. (date)

. focus group discussion with eight (8) informal reclaimers

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓ (All females)
1.3	**Employment Status**	
	Working for myself	✓ (All work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (Three days
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (for all)
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓ (On site at the Workforce	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	X	X
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify (PVC)	✓	✓
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	All the time
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (Waste has been going down)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (We are waste pickers)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes	✓	
	No		
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (Shelter, toilets)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	-> Change rooms -> Recycling facility	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-> Dangerous chemicals -> Broken glass / bottles	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> Fire on site, and leading to the site closing.	

5.7. How has the pandemic affect your livelihood as waste pickers

-> The site was closed, no income at that time

-> Waste coming to the site has went down and hasn't recovered

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Weltevreden Landfill Site

Date: 24 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature * Interview Consent & Attendance
1.	FLORENCE KHOZA	40	F	myself	3	10	Florence
2.	Lethiwe Luka	38	F	myself	3	9	L. Luka
3.	AMELIA TITE	45	F	myself	3	12	TITE
4.	ANNA	45	F	myself	3	22	Dlhamini
5.	Florinda Magu	34	F	myself	3	7	Florinda
6.	GRACA MATSIDHE	42	F	myself	3	8	GRACA
7.	Maria Muchanga	25	f	myself	3	9	Maria
8.	MaPITSO Luka	57	F	myself	3	10	MaPITSO
9.	MaMoTaTeloa	36			3	1	MaMotaTeloa
10.	LUCIA JAVIELLA O COSSA	f/30/			3	11	[illegible]
11.	madalena antonio nDimande	38			—	13	madalena

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mapitso Luka....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

MaPitso..... (signature)
MaPitso..... (name of participant)
24 June 2022.... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
24/6/2022.... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Maria Muchanga....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Maria M..... (signature)
Maria..... (name of participant)
24 June 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Gracy Matsinge, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

GRACE MATSINGE (signature)
MATSINGE (name of participant)
24 June 2022 (date)

(signature)
Irene Inan (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Karinda.....Maguy....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Karinda..... (signature)
.....Karinda..... (name of participant)
.....24 June 2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Anna....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...Anna..... (signature)
...ANNA..... (name of participant)
...24 June 2022..... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
...24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Amelia Tite, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Tite ..... (signature)
AMELIA TITE ..... (name of participant)
24 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Lekiwe Luka....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

L. Luka..... (signature)
.....Lekiwe..... (name of participant)
....24 June 2022.... (date)

.....Irene..... (signature)
....Irene Inan..... (name of person seeking consent)
.....24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Madalena Ndimande agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Ndimande..... (signature)
.....Madalena..... (name of participant)
.....24 June 2022..... (date)

.....(signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mamotatelong....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

MaMotaTelong..... (signature)
Mamotatelong..... (name of participant)
24 June 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
24/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lucia....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
.....Lucia..... (name of participant)
.....24 June 2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022..... (date)

focus group discussion with eleven (11) Informal Reclaimers.

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓ (All females
1.3	**Employment Status**	
	Working for myself	✓ (They all work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (3 days, friday to sunday)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 - 13:00
	7 - 10	
2.3	**How long have you been working as a waste picker?** Attached	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (for all)
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✗	✗
	Glass (Bottles)	✓	✓
	Glass (Broken)	✗	✗
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify (PET)	✓	✓
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	Always
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ (Yes, the money keeps become little)	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (Con-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (Toilets)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	-> Social grants -> Safety wear	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-> Dust, rain -> used injections	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> The waste collection is bad in winter	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Weltevreden Landfill Site

Date: 24 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature *Interview Consent & Attendance
1.	Eunice Mngomezulu	31	F	myself	~~4~~ 3	14	E. Zulu
2.	Mirriam Ngwenya	33	F	myself	~~2~~ 3	2	M. Ngwenya
3.	Ziya Bhebhe	38	F	myself	~~5~~ 3	15	Z. Bhebhe
4.	Kimbai Mapadza	29	F	myself	~~5~~ 3	5	V. Mapadza
5.	Finha Mnguni	29	F	myself	~~5~~ 3	5	F. NDLOVU
6.	Remekedzai	27	F	myself	~~6~~ 3	5	R. NDLOVU
7.	Abigil	35	F	myself	~~6~~ 3	13	A. Mapiza
8.	Qinisa	38	F	myself	~~3~~ 2	2	Q. Moyo
9	Johannah	62	F		3	14	J. Matsieng

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Eunice Mngomezulu...., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....E. Zulu..... (signature)
.....Eunice..... (name of participant)
.....24 June 2022..... (date)

.....(signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Miriam.....Ngwenya.., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...M. Ngwenya..... (signature)
...Miriam..... (name of participant)
...24 June 2022.... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
...24/6/2022.... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Ziya.....Bhebhe....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...Z.....Bhebhe..... (signature)
...Ziyanda..... (name of participant)
.....24 June 2022..... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
.....24/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Vimbai Mapadza, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
VIMBAI ..... (name of participant)
24/6/22 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Firha Mnomy....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
.....Firha..... (name of participant)
.....24 June 2022... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Remekedzai....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Remekedzai..... (name of participant)
24 June 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Abigail..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

A. Mapiza ..... (signature)
Abigail ..... (name of participant)
24 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Qinisa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

....Qinisa..... (signature)
....Qinisa..... (name of participant)
....24 June 2022.. (date)

....Irene Inan..... (signature)
....Irene Inan..... (name of person seeking consent)
....24/6/2022.... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Johannah Matsieng, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

J. Matsieng ..... (signature)
Johannah Matsieng (name of participant)
24 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ... (date)

· A focus group discussion with nine (9) informal reclaimers

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓ (All females)
1.3	**Employment Status**	
	Working for myself	✓ (They all work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (Three (3) days, Friday to Sunday)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07'00 - 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (For all)
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Weltevreden Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman	✓ (On-Site)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓ (At the workface)	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✗	✗
	Glass (Bottles)	✗	✗
	Glass (Broken)	✗	✗
	Metal (Steel)	✓	
	Metal (Other)	✓	
	Rubber	✓	
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ (Business is bad in June and boms in summer)	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On Site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes	✓	
	No		
	Other		
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (Toilets)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	-> Recycling center -> Safety wear -> Change rooms	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-> Used pampers, Rags -> Broken glass	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> The closure of the site -> Bad weather	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Welterevreden Landfill Site

Date: 24 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature *Interview Consent & Attendance
1.	Zwelda Rautnai	33	F	myself	3	1 year	[illegible]
2.	Delisiwe Nkabinde	38	F	myself	3	5 years	[illegible]
3.	patricia Jingxi	39	F	Myself	3	7 years	~~RJingxi~~
4.	phillistas moruthoni	58	F	myself	3	20 years	Phillistas
5.	Gloria Silenke	46	F	myself	3	11 years	gloria
6.	Joana Massinga	23	F	myself	3	1 year	massinga
7.	Benediza chongo	32	F	myself	3	2 years	chongo
8.	Nzimande Ciciwa	26	F	myself	3	5 years	~~[illegible]~~

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Anizwa Mzimande, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Anizwa..... (name of participant)
24 June 2022... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Benedita Chango....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....chango..... (signature)
.....Benedita..... (name of participant)
.....24 June 2022... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Delisiwe Nkabinde..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
...Delisiwe..... (name of participant)
...24 June 2022... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
...24/6/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Phillistas Moyutnam agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

P M ..... (signature)
Phillistas ..... (name of participant)
24 June 2022 ..... (date)

INyirenda ..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, PATRICIA JINGI....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Patricia..... (name of participant)
24 June 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Zubaida Paul Hhat agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Zubaida ..... (name of participant)
24 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Gloria Silenke, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Gloria ..... (signature)
Gwenda ..... (name of participant)
24 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Joana Massinga, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Massinga ..... (signature)
Joana ..... (name of participant)
24 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

. Focus group discussion with eight (8) informal reclaimers.

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	
	Female	✓ (All females)
1.3	**Employment Status**	
	Working for myself	✓ (They all work for themselves)
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	✓ (Three days, friday to Sunday)
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	✓ (07:00 - 13:00)
	7 - 10	
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ (for all)
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Welltevreden Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓ (All) Sell on site	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✗	✗
	Glass (Bottles)	✗	✗
	Glass (Broken)	✗	✗
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓ (Always)	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (Trucks coming to the site has been going down)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes	✓	
	No		
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (Shelter)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	-> Toilets -> Crematy -> Compressing machine -> PPE	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-> Broken glass -> used injections	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> A pandemic like covid, it comes with many challenges	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Wettevreden Landfill Site

Date: 24 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature * Interview Consent & Attendance
1.	Felicia Shingange	25	F	myself	3	2	[illegible]
2.	Patricia Mlambo	30	F	myself	3	5	PMlambo
3.	Eustina DLOVU	32	F	myself	3	5	EDLovu
4.	Tendai Mayana	30	F	myself	3	4	Mayana.
5.	filomena ciepie	45	F	myself	3	1	Novela
6.	masakhele motheo	42	F	my self	3	3	M. motheo
7.	NUKRAME AMERIKO	35	F	"	3	2	X
8.	OLIVIA MABASO	40	F		3	17	OLIVIA
9.	DALVINA KEJAMA	31	F	"	3	20	X
10.	Nomalanga	31	F		3	7	Nomalanga

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Felicia Shingange, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached. ..... (signature)
..... (name of participant)
24/06/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/06/22 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Patricia Mlambo....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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..... (name of participant)
.....24/6/2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/06/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Eustina Ndlovu....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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..... (name of participant)
.....24/6/2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/22..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Tendai Moyana, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

Attached (signature)
..... (name of participant)
24/6/2022 (date)

Irene (signature)
Irene Inan (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Filamena....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

Attach on focus group Sheet
..... (signature)
..... (name of participant)
24/6/2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Masakhele Mothea, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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24/6/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Luckrane Amerto, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
..... (name of participant)
24/6/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Olivia Mabaso....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
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.....Attached..... (signature)
..... (name of participant)
.....24/6/2022..... (date)

.....Inan..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Dalvina Ketjama, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
..... (name of participant)
24/6/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Nomalanga....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

.....Attached..... (signature)
..... (name of participant)
.....24/6/2022..... (date)

.....Inyirenda..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....24/6/2022..... (date)

· Focus group discussion with 10 (ten) female informal reclaimers

Research Survey Sheet

City of Ekurhuleni - Informal Waste Sector Questionnaire

Informal Reclaimers

This questionnaire will take approximately 30 minutes to complete

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	Attached on focus group sheet
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	~~Male~~	
	Female	→ All females
1.3	**Employment Status**	
	Working for myself →	10/10
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	Nanes mostly 0-5
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	Three days Friday → Sunday
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	(07h00 - 13h00) Set hours
	7 - 10	
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	Attached on focus group Sheet
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓ 10/10
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Welterveden landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓ 10/10 Sell to middlemen on site.	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓ On site	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)** Prices have stayed the same		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✗	✗
	Glass (Bottles)	✗	✗
	Glass (Broken)	✗	✗
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✗	✗
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓ all the time	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ less volume coming in	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ less PET	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ Site Reclaimer group	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes	✓	
	No		
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ Shelter on site
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	→ PPE → Shelter → Changing rooms	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	→ Broken glass → Medical was	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Covid impacts → less waste and closure of site.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Welte Vreden Landfill Site

Date: 24 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature * Interview Consent & Attendance
1.	Alda Mbikiti	48	F	Myself	3 days	13 years	[illegible]
2.	Anna Debi	30	F	"	"	9 years	[illegible]
3.	Zitha Mzibi	39	F	"	"	10	Zita
4.	Zobatha	39	F	"	"	1 year	Zubaida
5.	Annitha Sowai	32	F	"	"	1 years	Annitha
6.	Ziyda Kubibi	42	F	"	"	5	Zaida
7.	Zelba	29	F	"	"	1 year	Zitha
8.	Rose-girl	42	F	"	"	11 years	ROSA

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Alda Mkikhi....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

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Attached. ..... (signature)
..... (name of participant)
.....24/06/2022..... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
.....24/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Anna Debi, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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Attached attendance sheet
..... (signature)
..... (name of participant)
24/06/2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
24/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Zitha Mzibi....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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Attached attendance register
..... (signature)
..... (name of participant)
24/6/2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Zobatha....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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..... (signature)
..... (name of participant)
24/6/2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Anitha Sowai....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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Attached attendance register ..... (signature)

..... (name of participant)

24/6/2022 ..... (date)

..... (signature)

Irene Inan ..... (name of person seeking consent)

24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Ziyada Kubibi, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached attendance register
..... (signature)
..... (name of participant)
24/6/2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Zelba....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached attendance register
..... (signature)
..... (name of participant)
..... 24/6/2022 (date)

..... (signature)
..... Irene Inan (name of person seeking consent)
..... 24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Rose-girl..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached attendance register ..... (signature)

..... (name of participant)

24/6/2022 ..... (date)

..... (signature)

Irene Inan ..... (name of person seeking consent)

24/6/2022 ..... (date)

Focus group discussion Female group

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	Attached attendance & interview consent sheet
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	~~Male~~	All females 8/8
	Female	
1.3	**Employment Status**	
	Working for myself	✓ All of the 8
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	Varies 0-5 (6)
	6-10	6-10 (2)
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	3 days Friday to Sunday
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	(07h00 - 13h00) Allocated times
	4 - 6	
	7 - 10	
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	See attached focus group sheet
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓ 8/8
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Welterveden landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓ 6/8	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other	✓ Site buyers 2/8	
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale	✓ (Site)	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)** Mostly stayed the same		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste		
	Glass (Bottles)		
	Glass (Broken)		
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber		
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ less volumes / tonnages coming in	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ less tonnages	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ Site group	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ Supplementing income
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	→ Toilet → Shelter for rainy days → PPE	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	→ Dead bodies → Broken glass	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Reduced tonnages, Closure of site.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Weltevreden Landfill Site

Date: 24 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature & Interview Consent & Attendance
1.	ARMINDPCassa	25	F	myself	3	2	ARMINDA
2.	Sandria Mc i fia	26	F	myself	3	7	Sandria
3.	Adencia magani	25	F	myself	3	2	Adencia
4.	Elizabete MBalam	30	F	myself	3	2	Elizabete
5.	Raquel Bila	37	F	myself	3	10	Bila
6.	Roza muedzane	31	F	myself	3	9	Muedzane
7.	Rachel malatjie	35	F	myself	3	10	R.m
8.	Zeldan malatjie	41	F	myself	3	10	Z. malatjie
9	monnetty malatjie	38	F	"	3	10	M. malatjie
10	ester ntimba	50	F	"	3	10	E. ntimba

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Armindd Cassa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached AR ..... (signature)
..... (name of participant)
24/6/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sandra Maiba....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attendance Register Attached
..... (signature)
..... (name of participant)
24/6/2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Adoinda Magani, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached attendance register
..... (signature)
..... (name of participant)
24/6/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Elizabeth Mbalanda agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached attendance register
..... (signature)
..... (name of participant)
24/6/2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Raquel Bila, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached attendance Register (signature)

..... (name of participant)

24/6/2022 (date)

(signature)

Irene Inan (name of person seeking consent)

24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Roza Miredane, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached Attendance register
..... (signature)
..... (name of participant)
24/6/2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Rachel Malatjie, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attendance Register attached.

..... (signature)

..... (name of participant)

24/6/2022 (date)

..... (signature)

Irene Inan (name of person seeking consent)

24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Zelda Malatjie, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached Attendance Register (signature)
..... (name of participant)
24/6/2022 (date)

Inan (signature)
Irene Inan (name of person seeking consent)
24/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Monneth Malatje, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached attendance register
..... (signature)
..... (name of participant)
24/6/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
24/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Estar Mtimba, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached Attendance Register
..... (signature)
..... (name of participant)
04/6/2022 (date)

..... (signature)
Irene Inan (name of person seeking consent)
24/6/2022 (date)

Focus group (female only group) session

Research Survey Sheet

City of Ekurhuleni - Informal Waste Sector Questionnaire

Informal Reclaimers

This questionnaire will take approximately 30 minutes to complete

	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	See attached response / attendance sheet
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	~~Male~~	
	Female	females only
1.3	**Employment Status**	
	Working for myself	10/10 work for themselves
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	5/10
	6-10	2/10
	11-1 5	3/10
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	3 days Friday to Sunday
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	(07h00 - 13h00) set allocated times
	4 - 6	
	7 - 10	
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	See attached attendance sheet
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	
	On foot	✓
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Welteveden landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	✓ on site buyers	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Other	✓	
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale	✓ on site	
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✗	✗
	Glass (Bottles)	✗	✗
	Glass (Broken)	✓	✓
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✗	✗
	If Other, specify	✗	✗
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ most volume / tonnages have decreased	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ less PET	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ site group	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Shelter - PPE - Toilet	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Broken glass - When it rains during allocated time	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Lower tonnages, closure of site due to Covid and other reasons. Covid	

APPENDIX J

SIMMER & JACK LANDFILL SITE INTERVIEW/QUESTIONNAIRE RECORD SHEETS

Meeting Attendance Register

Meeting Agenda: Meeting with Reclaimers Committee Site/Location: Simmer and Jack Si

Date: 08 June 2022 Meeting Time: 08:35

	Name and Surname	Company/Department	Contact No.	Signature
1.	ERIC MAYLIBANG	COMMETTER	0727563148	
2.	Sgelby Zuma	Committee.	0790304113	
3.	M. Mntungwa	Committee	0738935259	
4.	Bulelo mntung	Committee	0727055572	X
5.	SAMUEL MINA	SITE SUPERVISOR	0820797244	
6.	Lindiwe Khoza	Site Supervisor	081 731 1129	
7.	Bonny Mufamadi	Ipmo - Manager	061 990 755 8	
8.	Irene Ivan	Researcher	0788043077	
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lindiwe Khoza....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
...Lindiwe Khoza..... (name of participant)
...08 June 2022..... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
.....08/06/2022..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Interview		
City of Ekurhuleni Employees and CoE Service Providers		
This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
	I am the site supervisor, I assist the landfill manager to ensure that the service provider appointed does their job according to the license.	
1.2	**How long have you been in that position?**	
	5	
1.3	**Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	
	No	
	I don't know	
	Not my area of responsibility	✓
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni? And how?**	
	We have monthly meetings with reclaimers and they assist in terms of daily litter picking.	
2	**Informal Sector Contribution**	
2.1	**In your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
	Assist with saving the airspace of/on the landfill site	
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	
	The challenge we currently face is that the city does not have budget dedicated for reclaimers as they were not included on the existing system, hence they cannot be provided for	
2.3	**Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?**	
	Yes, research is still being carried out.	
2.4	**Are you aware of any success initiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	
	No ✓	
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activities in the City of Ekurhuleni ?**	
	Yes ✓	
	No	
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni?**	
	No ~~reclo~~ infrastructure	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	
	X	
3	**Informal Sector Volumes/Tonnages**	

3.1	**Who is responsible for data collection and capturing for informal reclaimers material**	
	City of Ekurhuleni	X
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Other	
	I don't know	
3.2	**Within your area of responsibility, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
	Yes	
3.3	**How is this data collected or captured from informal reclaimer material recyclables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	X
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables; and if so where and how many?**	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES X	
	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	X
	Not my area of responsibility	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, PETER B. NCHWE, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
PETER ..... (name of participant)
08-06-2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Interview		
City of Ekurhuleni Employees and CoE Service Providers		
This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
	Team ~~Area~~ Head - Weighbridge operations	
1.2	**How long have you been in that position?**	
	6 years.	
1.3	**Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	✓ Site Licence
	No	
	I don't know	
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni? And how?**	
	- yes, Recording the outgoing recyclables	
2	**Informal Sector Contribution**	
2.1	**In your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
	- Airspace at the site.	
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	
	- Not area of responsibility	
2.3	**Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?**	
	- yes, By including them in the landfill scope of work	
2.4	**Are you aware of any success initiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	
	No	✓
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activities in the City of Ekurhuleni ?**	
	Yes	✓ (for Simmer & Jack)
	No	
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni?**	
	- Infrastructure - Toilet	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	
	- The provincial government.	
3	**Informal Sector Volumes/Tonnages**	

3.1	**Who is responsible for data collection and capturing for informal reclaimers material**	
	City of Ekurhuleni	✓ (Weighbridge Operator)
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Other	
	I don't know	
3.2	**Within your area of responsibility, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
	Yes	
3.3	**How is this data collected or captured from informal reclaimer material recyclables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	✓
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables; and if so where and how many?**	
	No.	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	
	NO	✓ (Not area of responsibility)
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	
	Not my area of responsibility	✓

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, SAMUEL MINA, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
SAMUEL ..... (name of participant)
08/06/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Interview		
City of Ekurhuleni Employees and CoE Service Providers		
This questionnaire will take approximately 20 - 25 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
	Site Supervisor for Sungu Sungu Projects	
1.2	**How long have you been in that position?**	
	3 years	
1.3	**Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	✓ (Site licence/permit)
	No	
	I don't know	
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni? And how?**	
	Yes	
2	**Informal Sector Contribution**	
2.1	**In your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
	They help us with the air-space and better picking	
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	
	The numbers are always changing	
2.3	**Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?**	
	NO	
2.4	**Are you aware of any success initiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	
	No	✓
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activities in the City of Ekurhuleni ?**	
	Yes	✓
	No	
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni?**	
	No infrastructure separating their activities	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	
	Yes, Gdard	
3	**Informal Sector Volumes/Tonnages**	

3.1	**Who is responsible for data collection and capturing for informal reclaimers material**	
	City of Ekurhuleni	✓
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Other	
	I don't know	
3.2	**Within your area of responsibility, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
	NO	
3.3	**How is this data collected or captured from informal reclaimer material recyclables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	✓
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables; and if so where and how many?**	
	NO	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	✓
	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	✓
	Not my area of responsibility	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Simmer and Jack Landfill Site

Date: 08 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature *Interview Consent & Attendance
		1.1	1.2	1.3	2.1	2.3	
1.	WILSON MAKHANYA	40	M	MYSELF	7	12	
2.	Clever Duke	37	M	MYSELF	5	8	
3.	Lucky Mhlungwa	38	M	MYSELF	5	12	
4.	Vusi Mugwanza	31	M	MYSELF	5	10	
5.	Lunga Thulwini	32	M	MYSELF	6	4	
6.	Mlamuleni Sibiya	33	M	MYSELF	5	8	
7.	Moka Lekhoa	34	M	MySelf	6	10	
8.	Mfuniseni Ndawonde	40	M	MySelf	5	18	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Wilson Makhanya....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attested ..... (signature)
Wilson ..... (name of participant)
08 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - ~~Questionnaire~~ Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Clever Dube....., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that Photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

.....attached..... (signature)
...Clever..... (name of participant)
...08/06/2022.... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/2022.. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lucky Mtungwa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....attached..... (signature)
.....Lucky..... (name of participant)
.....08 June 2022.... (date)

..... (signature)
.....Irene..... (name of person seeking consent)
.....08/06/22..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Nusi Magwaza....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attached ..... (signature)
Nusi ..... (name of participant)
08/06/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lunga Thulwini....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... attached ..... (signature)
..... Lunga ..... (name of participant)
..... 08/06/2022 ..... (date)

..... (signature)
..... Irene Inan ..... (name of person seeking consent)
..... 08/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mamuneni Silaiya....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....attached..... (signature)
.....Mamuneni..... (name of participant)
.....08/06/2022..... (date)

.....IMyren..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Moka Letlhoale....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....attached..... (signature)
.....Moka..... (name of participant)
.....08/06/2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/08/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mfunisani Ndawonde....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attached ..... (signature)
N Mfunisani ..... (name of participant)
08/06/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

focus group discussion with eight (8) informal reclaimers. The responses are given by a group

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	Attached
	Male	
	Female	
1.3	**Employment Status**	Attached
	Working for myself	
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	Not provided
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	Attached
	7	
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 – 17:00)
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Impact / Remade / Consol)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓ (At the working face after picking)	
	Mobile scale		
	Landfill site weighbridge	✓ (Before delivered to the the buyer)	
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	✓	X
	Glass (Broken)	✓	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (The recyclable we are picking are going down)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site reclaimers group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (Drinking water)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Provide us with, shelter - Providing us with safety gear.	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- used injections, diapers, tempons - Dead babies	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Yes: More people coming to join us as waste pickers with less trucks coming to the site	

5.7 General

-> Its almost two years that we haven't been collecting glass bottles

-> Safety gear will be important to us in protection against the danger while we are picking/sorting the recyclables

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Simmer and Jack Landfill Site

Date: 08 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature * Interview Consent & Attendance
		1.1	1.2	1.3	2.1	2.3	
1.	Sakuleko Mabaso	21	M	Myself	6	6 month	[illegible]
2.	Z. Mntungwa	36	M	myself	6	11	[illegible]
3.	Ntoloko Mntungwa	23	M	My self	5	3	[illegible]
4.	M mntungwa	50	M	myself	6	10	[illegible]
5.	J mntungwa	47	M	myself	6	19	[illegible]
6.	N mntungwa	39	M	myself	6	1 YR	[illegible]
7.	B.V Mntungwa	39	M	Myself	6	4 year	[illegible]
8.	S. Dlamini	36	M	Myself	5	5 years	X

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, B.V. Mntungwa, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attached ..... (signature)
B.V. Mntungwa ..... (name of participant)
08 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, N. Mntungwa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attached ..... (signature)
N. Mntungwa ..... (name of participant)
08 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...J. Mntungwa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....attached..... (signature)
.....J. Mntungwa..... (name of participant)
.....08 June 2022..... (date)

.....Irene Inan..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, M. Mntungwa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	[redacted]	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attached ..... (signature)
M. Mntungwa ..... (name of participant)
08 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mtobeko Mntungwa, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
Mtobeko ..... (name of participant)
08 June 2022 ..... (date)

INyirenda ..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Z. Mntungwa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....(signature)
Z. Mntungwa..... (name of participant)
08 June 2022..... (date)

.....(signature)
Irene Inan..... (name of person seeking consent)
08/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...S. Dlamini..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...[signature]... (signature)
...S. Dlamini... (name of participant)
...08 June 2022... (date)

...[signature]... (signature)
...Irene Inan... (name of person seeking consent)
...08/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sebuleko Maboso....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Ahamed..... (signature)
.....Sebuleko..... (name of participant)
.....08 June 2022..... (date)

.....Inan Nyirenda..... (signature)
.....Irene..... (name of person seeking consent)
.....08/06/2022..... (date)

A focus group discussion with eight (8) informal reclaimers. The responses are given by a group of type 8.

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	Attached
	Male	
	Female	
1.3	**Employment Status**	Attached
	Working for myself	
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	Attached
	7	
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 - 17:00)
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Remade)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remote/Mpact)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓ (At the working face)	
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	X	X
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	(All the time)
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know	✓ (Some gave this response)	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (We make our money from waste picking only)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other	✓ (We hope for that to change)	
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (more trucks directed to the site)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Providing us with ~~with~~ shelter, especially when the weather is bad	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Broken glass bottles - Dead babies - used injections	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	with COVID came a cut of trucks coming to the site, this is continuing and it is bad for us as waste pickers as the money we make is going down most of the time.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Simmer and Jack Landfill Site

Date: 08 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature * Interview Consent & Attendance
		1.1	1.2	1.3	2.1	2.3	
1.	Lucky Moyo	28	M	my self	6	Seven	
2.	Lucky Mabaso	38	M	Myself	7	17	
3.	Mxholisi Mngini	42	M	Myself	5	09	
4.	Mayikeli Ndlovu	46	M	myself	5	10	
5.	Sunkey Nkomo	99	M	MYSELF	6	2	
6.	Busana Mtungwa	32	M	Myself	5	12	
7.	Senzo Ndlovu	38	M	Myself	6	8	
8.	Bhiya Dube	37	M	Myself	~~10~~ 6	10	Dube

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Bhiya Dube..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...attached... (signature)
...Bhiya... (name of participant)
...08 June 2022... (date)

...Inan... (signature)
...Irene Inan... (name of person seeking consent)
...08/06/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Senzo Ndlovu....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...attached..... (signature)
...Senzo..... (name of participant)
...08 June 2022.... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
.....08/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Bafana Mtungwa, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attached ..... (signature)
Bafana ..... (name of participant)
01/06/2022 ..... (date)

Inan Irene ..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - Questionnaire

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sunboy Akomo....., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that Photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

.....attached..... (signature)
.....Sunboy..... (name of participant)
.....08 June 2022..... (date)

.....Irene..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/2022..... (date)

Research Consent Form - Questionnaire

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mayikeli Ndovu....., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that Photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

.....attached..... (signature)
.....Mayikeli..... (name of participant)
.....08 June 2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/2022..... (date)

Research Consent Form - ~~Questionnaire~~ Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mhalisi Mngini....., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that Photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

attached ..... (signature)
Mhalisi ..... (name of participant)
08/06/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lucky Mabaso....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....attached..... (signature)
.....Lucky..... (name of participant)
.....08/06/2022..... (date)

.....Irene..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/22..... (date)

Research Consent Form - ~~Questionnaire~~ Interview

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Lucky....Mogo....., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that Photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

.....Attached..... (signature)
.....Lucky..... (name of participant)
.....08 June 2022..... (date)

.....Inan..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/2022..... (date)

Focus group discussion with eight (8) informal Reclaimers.

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	Attached
	Male	
	Female	
1.3	**Employment Status**	Attached
	Working for myself	
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions** Attached	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 — 17:00)
2.3	**How long have you been working as a waste picker?** Attached	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓ (They all gave the same response)
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remade and Consol)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	✓	✓
	Glass (Broken)	✓	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	Always
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ (The money collected has been going down)	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (onsite Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes	✓ (They provide us with a working cell)	
	No		
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Providing us with the building to store what we recycle - Safety gear and drinking water	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- used diapers - used injections	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Yes, Letting many waste pickers to join us.	

5.7. General

→ Controlling the dust on-site, especially during the season when it is windy

→ We only pick the recyclables on site at Simmer and Jack site, never on the streets

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Simmer and Jock Landfill Site Committee

Date: 08 June 2022

No.	Name and Surname	Age (11)	Gender (M/F) (12)	Who do you work for? i.e. myself &/or dealer (13)	How many days do you work in a week? (5/6/7) (21)	How many years have you been reclaiming? (23)	Signature *Interview Consent & Attendance
1.	M Mntungwa	33	M	myself	7	15 yrs	
2.	S.S Zuma	33	M	myself	7	15 yrs	
3.	ERIC MAYUBANE	47	M	MYSELF	7	18 YRS	
4.	B Mntungwa	49	M	Myself	7	16 YRS	
5.							
6.							
7.							
8.							

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, M. Mntungwa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attached..... (signature)
M. Mntungwa..... (name of participant)
08 June 2022..... (date)

Irene..... (signature)
Irene Inan..... (name of person seeking consent)
08/06/22..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, B. Mthungwa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....(signature)
B. Mthungwa.....(name of participant)
08/06/2022.....(date)

.....(signature)
Irene Inan.....(name of person seeking consent)
08/06/2022.....(date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ERIC MAGUBANE....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attested ..... (signature)
Eric ..... (name of participant)
08 June 2022 ..... (date)

Inan Irene ..... (signature)
Irene Inan ..... (name of person seeking consent)
08/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, S.S. Zuma, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attached ..... (signature)
S.S. Zuma ..... (name of participant)
08/06/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/22 ..... (date)

A focus group discussion with the committee of the informal reclaimers at Simmer and Jack Landfill site

City of Ekurhuleni - Informal Waste Sector Interview		
Informal Reclaimers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	Attached
	Male	
	Female	
1.3	**Employment Status**	Attached
	Working for myself	
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	Attached
	7	
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 – 17:00)
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Remade, Mpact & Control)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	
	Other	
	To whom do you sell the recyclables?	

3.3	Dealer		
	Middleman		
	Buy Back Centre	✓ (Brimade and Consol)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale		
	Landfill site weighbridge	✓ (It is a procedure from CoE)	
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	✓	X
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓ (All the time)	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ (Money collected has been going down)	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (We are only dependent on waste picking)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni	✓ (On-site Reclaimers Committee)	
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an Informal waster collecter/picker**		
	Yes	✓	
	No		
	Other	✓ (We are link between the reclaimers on site & the CoE)	
5.3	**In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?**		
	Formal integration - (working with the CoE on waste coming in	✓	
	Change of location		

	Separation of material at source	
	Other	✓ (Grants)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- PPE (work suits, gloves, Raincoats, Boots) - Shelter - Toilets	- Grants - Water
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Broken glass/bottles - Dead babies	- used injections, drapers
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- The decrease of trucks coming to dispose on site without understanding the trend behind it	

5.7. How has the COVID pandemic effect your livelihoods as waste pickers?

-> It has been bad for us all. The number of trucks that used to dispose on site has went down, this hasn't changed

-> During the pandemic, Coca-Cola has introduced the returnable bottles that has contributed to the PET declining

-> The site closed for many months. There was no source of income during that time.

5.8. General

-> There is no mobile scale on site. We plead with the municipality to allow us to have it. NCoE doesn't allow them

-> The municipality has to reapprove allowing the bins on site. The storage bins are needed.

-> The waste compressing machine, its important to have it as it will save storage space

-> Grants provision. It will be important, especially when there is little or no income at all.

-> We are able to engage with the municipality through meetings and it has been working for us and the municipality.

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Simmer and Jack Landfill Site

Date: 08 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature & Interview Consent & Attendance.
		11	12	13	21	23	
1.	NT MAGWAZA	46	M	Myself	6	15	
2.	M Mabaso	48	M	myself	7	7	
3.	S Khumalo	56	M	myself	7	12	
4.	M Langa	27	M	MY SELF	6	7	
5.	M. Malinga	33	M	My Self	2	2	M. Malinga
6.	V.M MALINGA	31	M	MySelF	6	7	V.M. Malinga
7.	HN Jali	31	H	MySELF	6	7	
8.	Q. Sitenole	37	M	my self	4	13	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Q. Sithole....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...Affixed..... (signature)
...Q. Sithole..... (name of participant)
....08....June....2022.... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/6/2022.. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ..H.M.....Jali....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
..H.M.....Jali..... (name of participant)
.....08.....June.....2022..... (date)

..... (signature)
.....Irene.....Inan..... (name of person seeking consent)
.....08/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, V.M. Malinga....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	YES	(NO)
I agree that photographs may be taken or requested	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
V.M. Malinga ..... (name of participant)
08 June 2022 ..... (—, date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, M. Malinga, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
M. Malinga ..... (name of participant)
08/06/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...M. Langa..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

...Attached... (signature)
...M. Langa... (name of participant)
...08 June 2022... (date)

...Inan... signature)
...Irene Inan... (name of person seeking consent)
...08/06/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...S. Khumalo....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Attached..... (signature)
....S. Khumalo..... (name of participant)
...08...June....2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/2022.. (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, M. Mabaso....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
M. Mabaso ..... (name of participant)
08 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08 June 2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, N.T. Mayuwaza, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
N.T. Mayuwaza ..... (name of participant)
07 June 2020 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08 June 2020 ..... (date)

Focus group discussion of eight (8) informal Reclaimers. The responses are given by a group

	Research Survey Sheet	
	City of Ekurhuleni - Informal Waste Sector Questionnaire	
	Informal Reclaimers	
	This questionnaire will take approximately 30 minutes to complete.	
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	Attached
	Male	
	Female	
1.3	**Employment Status**	Attached
	Working for myself	
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	Attached
	7	
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 — 17:00)
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓ (All interviewed gave the same answer)
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Remade)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remade Impact	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓ (At the working face)	
	Mobile scale		
	Landfill site weighbridge	✓ (Before taken out of site to the buyer)	
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✗	✗
	Glass (Bottles)	✓	✓
	Glass (Broken)	✓	✓
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ (The money we make is going down)	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (We make our living from waste picking)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- shelter - Toilets - more waste diverted to the site	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- used diapers/injections - Broken glass/bottles - Rain/dust	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> Yes, The amount of waste we collect is going down and nothing is changing to our advantage,	

5.7. How did the COVID Pandemic affect your livelihoods as waste pickers?

-> No safety gear that was provided by the municipality

-> Waste was been going down and it is not changing

5.8. General.

-> We need the compressing machine on-site.

-> We need a permission to have our mobile scale on site.

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Simmer and Jack Landfill Site

Date: 08 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature *Interview Consent & Attendance
		1.1	1.2	1.3	2.1	2.3	
1.	ALLEN MAGWAZA	40	M	Myself	6	17	
2.	SANDILE JALI	41	M	MY SELF	6	7	S. JALI
3.	Thabani Mntungwa	24	M	My self	5	5	
4.	MCABANGELENI MNTUNGWA	25	M	My self	~~8~~ 5	8	
5.	Mzokhanyayo Mntungwa	34	M	My Self	6	11	
6.	MFANELO MNTUNGWA	43	M	My self	5	17	
7.	Sbusiso Mntungwa	22	M	My Self	5	18 (started to remain at 18. 22-18 = 4 years)	
8.	MACHEL DLAMINI	29	M	My Self	7	8	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Allen Mangwaza, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attested ..... (signature)
Allen ..... (name of participant)
08/06/2022 ..... (date)

Inyirenda ..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sandile Jeri....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Sandile..... (name of participant)
.....08/06/2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
.....08/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Thabani Mntungwa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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I agree that photographs may be taken or requested	YES	NO

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All Covid-19 protocols will be followed during face-to-face interviews.

.....attached..... (signature)
.....Thabani..... (name of participant)
.....08/06/2022..... (date)

.....Irene..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/2022..... (date)

Research Consent Form - ~~Questionnaire~~ Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Maehea Dlamini....., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed where applicable.

.....attached..... (signature)
.....Maehea..... (name of participant)
.....08/06/2022..... (date)

.....IMylrea..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/2022..... (date)

Research Consent Form - ~~Questionnaire~~ Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mcabangeleni Mtungwa, agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed where applicable.

attached ..... (signature)
Mcabangeleni ..... (name of participant)
08/06/2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - ~~Questionnaire~~ Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mzokhanyayo Mangi, agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed where applicable.

attached ..... (signature)
Mzokhanyayo ..... (name of participant)
08/06/2022 ..... (date)

INyirenda
..... (signature)
Irene Inan ..... (name of person seeking consent)
08/6/2022 (date)

Research Consent Form - ~~Questionnaire~~ Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mfanelo Mntungwa agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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All Covid-19 protocols will be followed where applicable.

Attached ..... (signature)
Mfanelo ..... (name of participant)
08 June 2022 ..... (date)

Annlire ..... (signature)
Irene Inan ..... (name of person seeking consent)
08/6/2022 ..... (date)

Research Consent Form - ~~Questionnaire~~ Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sbusiso Mntungwa....., agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

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I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that Photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

.....Attached..... (signature)
.....Sbusiso..... (name of participant)
.....08/06/2022..... (date)

.....Inan..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/2022..... (date)

focus group discussion of eight (8) informal reclaimers. The following responses are given by a group.

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	Attached
	Male	
	Female	
1.3	**Employment Status**	Attached
	Working for myself	
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	Attached
	7	
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 - 17:00)
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓ (All)
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Remade / Consol)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Mpact / Remade / Consol for glass bottles)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓ (At the working face	
	Mobile scale		
	Landfill site weighbridge	✓ (Before taken out of site to the buyer)	
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	✓	✓
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	Always
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (The number of trucks coming to site went dow	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-Site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (More trucks directed to the site)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Shelter - Safety gear	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Unfriendly weather (Winds, Rain) - Used injections, diapers and	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	The number of trucks that were regulars has went down	

5.7 How did the COVID Pandemic affect your livelihoods as waste pickers?

→ The waste we pick at the working face has went down

→ The we no income for more than a year.

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Simmer and Jack landfill site

Date: 08 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature #Interview Consent & Attendance
1.	Sthumbuzo Mtungwa	39	Male	Myself	6	11	
2.	Zuma Sabelo	32	Male	Myself	6	15	
3.	Thulebona Khumalo	38	Male	My Self	6	12	
4.	Njabulo Thusi	29	Male	Myself	5	1	N.S. Thusi
5.	Nedani Tshabalala	26	Male	Myself	6	2	
6.	Mpilo Mthembu	32	Male	Myself	4	3	
7.	Mandla Tsnuma	25	Male	Myself	5	1	
8.	Sydney Satula	32	Male	Myself	6	2	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sikhumbuzo Ntungwa, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
Sikhumbuzo ..... (name of participant)
08 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/6/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Sabelo.....Zuma....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...Attached..... (signature)
....Sabelo..... (name of participant)
....08 June 2022..... (date)

..... (signature)
....Irene Inan..... (name of person seeking consent)
.....08/6/2022.... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Thuebona...Khumalo..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...attached..... (signature)
...Thuebona..... (name of participant)
...07 June 2020... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
...08/06/2020... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Njabulo Thusi....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attached..... (signature)
...Njabulo..... (name of participant)
...08 June 2022..... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
.....08/6/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Dedani Tshabalala....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Dedani..... (name of participant)
...08 June 2022.. (date)

..... (signature)
.....Irene Inan... (name of person seeking consent)
.....08/06/2022 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mpilo Mthembu, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
Mpilo ..... (name of participant)
08 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mandla Tinuma....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....attached..... (signature)
.....Mandla..... (name of participant)
.....08 June 2022..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ..Sydney.....Sebula....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..attached..... (signature)
.....Sydney..... (name of participant)
....08...June.....2022.. (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/6/22.. (date)

· focus group discussion of eight (8) informal reclaimers. The following responses are given by a group.

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	Attached
	Male	
	Female	
1.3	**Employment Status**	Attached
	Working for myself	
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	Attached
	7	
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 – 17:00)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman	~~(+++++)~~	
	Buy Back Centre	✓ (Remade and Consol for glass bottles)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	✓	✓
	Glass (Broken)	✓	✓
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	All the time
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (The site closes at times)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (Onsite reclaimers group)	
5.2	**Does the City of Ekurhuleni help you as an Informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (Shelter)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Safety gear (working suits, boots) - Change rooms - gloves - Toilets and water for drinking	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- used drapers, injections - Broken bottles, glasses	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> The decrease of the waste we pick -> The broken bottles and glass	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Simmer and Jock Landfill Site

Date: 08 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature *Interview Consent & Attendance
1.	Joshua Dube	34	M	myself	8	10	
2.	Celimusa ndlalo	49	M	"	5	21	
3.	Khumbulani Ncanana	44			5	10	
4.	Thalente Mpungose	26	M	myself	5	5	
5.	Joshua Mkhize	58	M	Myself	6	7	
6.	Mncedisi N Aba	30	M	Myself	8	11	
7.	Ntokozo Dladla	45	M	Myself	7	18	Ntokozo
8.	Mfundisi Jali	37	M	Maveza	~~8~~ 6	5	M J

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Joshua Mike....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...attached..... (signature)
...Joshua..... (name of participant)
...08 June 2022..... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
...08/06/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Khumbulani Mcomane..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Afteave b..... (signature)
...Khumbulani..... (name of participant)
....08 June 2020.... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/2020 (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Celimusa Maloyo, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
Celimusa ..... (name of participant)
08 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mncedisi N. Xaba....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

....Attached..... (signature)
..Mncedisi..... (name of participant)
...08 June 2022 (date)

..... (signature)
.....Irene Inan... (name of person seeking consent)
.....08/06/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Thalente Mpungase, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached ..... (signature)
Thalente ..... (name of participant)
08 June 2022 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Joshua Dube..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...Attached... (signature)
...Joshua... (name of participant)
...08 June 2022... (date)

...Irene... (signature)
...Irene Inan... (name of person seeking consent)
...08/06/2022... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mfundisi Jali....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....Attached..... (signature)
...Mfundisi..... (name of participant)
...08 June 2022..... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
.....08/6/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mtokozo Dladla....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Attached..... (signature)
Mtokozo..... (name of participant)
08 June 2022 (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
08 June 2022 (date)

Focus group of eight (8) informal reclaimers interviewed. The following responses are given by a group.

	Research Survey Sheet	
	City of Ekurhuleni - Informal Waste Sector Questionnaire	
	Informal Reclaimers	
	This questionnaire will take approximately 30 minutes to complete.	
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	Attached
	Male	
	Female	
1.3	**Employment Status**	Attached
	Working for myself	
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	Attached
	7	
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 - 17:00)
2.3	**How long have you been working as a waste picker?**	Attached
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	2 ✓ (All interviewed gave the same answer)
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	1 ✓ (Remade)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remade and mPact) (Consol for glass bottles)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓ (At the working face)	
	Mobile scale		
	Landfill site weighbridge	✓ (Before taken out of the site to the buyer)	
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	✓	✓
	Glass (Broken)	✓	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓ (Waste is going down and the site closes sometimes)	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (It's our only source of income)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No		
	Other	✓ (The municipality allows us to work for ourselves)	
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (Providing us, the waste pickers with safety gear)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Shelter - Moveable water tank - Toilets	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Bad weather (rain, Dust, Wind) -> used injections -> Dead babies -> ~~Grounds~~	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- The closure of the site, it is worse when it happens and there's no communication to us.	

5.7. How did the COVID pandemic affect your livelihoods as waste pickers?

=> No income for more than a year.

=> Waste coming to the want-down and it is still the same

5.8. General

=> Some strip trucks are no longer to the site

=> Cross is dangerous to work with and has less value

=> The site was closed for more than a year

=> We plead with the municipality to send more trucks to the site

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Simmer and Jack Landfill Site

Date: 08 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature # Interview Consent & Attendance.
1.	Lungelo Magubane	21	M	Myself	6	one	Lungelo
2.	David Sithole	39	M	myself	7	11	D. Sithole
3.	Solomon Khemalo	23	M	Myself	~~6~~ 6	2	Khumalo
4.	Themba Dube	44	M	myself	7	18	[illegible]
5.							
6.							
7.							
8.							

Research Consent Form - ~~Questionnaire~~ Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lungelo Magubane, agree to participate in this questionnaire research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that Photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed where applicable.

attached ..... (signature)
Lungelo ..... (name of participant)
08 June 2022 ..... (date)

INyirenda ..... (signature)
Irene Inan ..... (name of person seeking consent)
08/06/2022 ..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Thembe Ndube....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

...attached..... (signature)
...Thembe..... (name of participant)
...08 June 2022..... (date)

..... (signature)
...Irene Inan..... (name of person seeking consent)
.....08/06/2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...David Sithole....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....attached..... (signature)
.....David..... (name of participant)
.....08 June 2022..... (date)

.....Inan Irene..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08 June 2022..... (date)

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Solomon Khumalo....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attached..... (signature)
Solomon..... (name of participant)
08 June 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
08/06/22..... (date)

· focus group discussion with four (4) informal reclaimers.

	Research Survey Sheet	
	City of Ekurhuleni - Informal Waste Sector Questionnaire	
	Informal Reclaimers	
	This questionnaire will take approximately 30 minutes to complete.	
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	Attached
	18-25	
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	Attached
	Male	
	Female	
1.3	**Employment Status**	Attached for all
	Working for myself	
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	Attached for all
	7	
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (08:00 – 17:00)
2.3	**How long have you been working as a waste picker?**	Attached for all
	0 - 10 (years)	
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Ihamade)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remade)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓ (At the working face after picking)	
	Mobile scale		
	Landfill site weighbridge	✓	
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✗	✗
	Glass (Bottles)	✗	✗
	Glass (Broken)	✗	✗
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓ (Always)	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓ (We make a living from reclaiming the recycla	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (Con-Site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (Masks, especially during windy season)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Safety gear - Water - Shelter - Toilets	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Dead babies - used injections - used baby diapers	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Loosing source of income whenever the site closes.	

Masters Research Reclaimers Interview Attendance Register

Topic: The Informal Waste Sector in the City of Ekurhuleni

Researcher: Irene Inan (Student No: 0208508J)

Location: Simmer and Jack Landfill Site

Date: 08 June 2022

No.	Name and Surname	Age	Gender (M/F)	Who do you work for? i.e. myself &/or dealer	How many days do you work in a week? (5/6/7)	How many years have you been reclaiming?	Signature # Interview Consent & Attendance.
1.	S'yanda Ngubane	28	M	myself	6	7	S.N.
2.	Mnelisi Ndawonde	23	M	myself	5	5	[illegible]
3.	Sphesihle Malinga	25	M	myself	~~4~~ 5	4	S.Malinga
4.	Busani Mntungwa	31	M	myself	6	7	[illegible]
5.	Lucky MBhatha	43	M	myself	7	15	[illegible]
6.	Mthokozisi Zuma	30	M	myself	6	6	[illegible]
7.	Ayanda Mntungwa	23	M	Myself	7	1	[illegible]
8.	M. Mntungwa	23	M	myself	7	3	[illegible]

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Ayanda Mntungwa, agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

Ayanda ..... (signature)
Ayanda ..... (name of participant)
08 June 2020 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
08/6/2020 ..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	✓ (23 years old)
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (1)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	✓
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 - 17:00)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (1 year)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack handfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Remade)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remade)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		✓
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		✓
	Food waste		X
	Glass (Bottles)		X
	Glass (Broken)		X
	Metal (Steel)		✓
	Metal (Other)		✓
	Rubber		✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	Alway I.
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓ (I just have ~~a~~ year recycling)	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓ (There's no job im finding, and I will continue to work for myself)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Providing safety gear - Water	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- medical waste (used injection) - Broken gloss bottle)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Not having to make a living for myself because the sites is closed.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, M. Mintungwa....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
M. Mintungwa..... (name of participant)
05 June 2020... (date)

..... (signature)
Irene Inan... (name of person seeking consent)
08/6/2020 (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	✓ (23 years)
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (2)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	✓
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 – 17:00)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (3 years)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Kemade)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remade)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓ (on-site in the working type)	
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		✓
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		✓
	Food waste		✗
	Glass (Bottles)		✗
	Glass (Broken)		✗
	Metal (Steel)		✓
	Metal (Other)		✓
	Rubber		✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓ (I have at least 3 years on-site)	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (compressing machine & infrastructure)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Shelter - drinking water - granas -	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- used pads, injection, diapers. - dead bodies - Broken glass / bottles	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- The closing of the site.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mthokozisi Zuma....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested.	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attached..... (signature)
Mthokozisi..... (name of participant)
08 June 2022... (date)

..... (signature)
Irene Inan.... (name of person seeking consent)
.....08/06/2022.. (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (30 years)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (3)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 – 17:00)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (6 years)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Mapca)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Impact)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		✓
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		✓
	Food waste		x
	Glass (Bottles)		x
	Glass (Broken)		x
	Metal (Steel)		✓
	Metal (Other)		✓
	Rubber		✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓ (All the time)	It costs to deliver.
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes		
	No	✓	
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (Sweeter)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Safety wear/gear - Drinking water	- Toilets - Social assistance
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Used injection) - Broken glass)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Not having a scale on-site, because we have to pay transport for delivering what we have recycled.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Mnelisi Ndawonde....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....attached..... (signature)
.....Mnelisi..... (name of participant)
.....08 June 2022..... (date)

.....Inan..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/6/2022..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	✓ (23 years)
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (2)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (5)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 - 17:00)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (5 years)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Remade)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Chemical)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale		
	Landfill site weighbridge	✓	
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		✓
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		✓
	Food waste		✗
	Glass (Bottles)		✓
	Glass (Broken)		
	Metal (Steel)		✓
	Metal (Other)		✓
	Rubber		✓
	If Other, specify (PVC)		✓
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ (It started tuger wurse in 2018)	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (on-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	1. Waste compressing machine 2. Shelter	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	-used injections -used pampers (nappers)	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	-> The closure of the landfill site, especially when there is no notification on our side	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, ...Siyanda...Mqubane..., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

attached..... (signature)
...Siyanda..... (name of participant)
...08 June 2022. (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/6/2022.. (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (28)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (3)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 – 17:00)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (7 years)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓ (Mpect)
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Mpect)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (IMPACT)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility	✓	
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	
	Food waste	✗	✗
	Glass (Bottles)	✗	✗
	Glass (Broken)	✗	✗
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓ (IMPACT	(Deliver always)
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓ (my only source of survival)	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (Safety wear)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Drinking water - toilets - Shelter	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Dead bodies - used injections	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- The decrease of waste received on site is affecting my standard of life to bad.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lucky Mbatha....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....attached..... (signature)
.....Lucky..... (name of participant)
.....08 June 2022..... (date)

.....Irene Inan..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....08/06/2022..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	
	36 - ~~35~~ 45	✓ (43 years)
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	
	6-10	✓ (7)
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	✓ (7 days)
	5 - 6	
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 – 17:00)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	
	11 - 15 (years)	✓ (15 years)
	16 - 20 (years)	~~✓ (17 years)~~
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack, Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Ramada)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Promade and Consol for glass bottles)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓ (on site at the informal face)	
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	✓	X
	Glass (Bottles)	✓	✓
	Glass (Broken)	✓	✓
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	All the time
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓ (Mostly mat has been going down)	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site reclaimers group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (Compressing machine)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Uniforms - providing safety gear - Shelter - Water and toilets	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Used injections - Decreased (cabin) - Used diapers - Broken Bottles	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	- Receiving less trucks than before.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Sphesihle Malinga....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that photographs may be taken or requested.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

..... (signature)
Sphesihle..... (name of participant)
08 June 2022..... (date)

..... (signature)
Irene Inan..... (name of person seeking consent)
08 June 2022 (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	✓ (25 years old)
	26-35	
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (2)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (5 days)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07'00 – 17:00)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (4 years)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓ (Remade)
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill Site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Remade)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ (Remade)	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)	✓	
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility		
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard		2 ✓
	Paper (Other)		✓
	Plastic (PET)		✓
	Plastic (Other)		✓
	Food waste		X
	Glass (Bottles)		X
	Glass (Broken)		X
	Metal (Steel)		✓
	Metal (Other)		✓
	Rubber		1 ✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect	✓	
	I have to deliver to them		
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes		
	No		
	Don't know	✓	
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes		
	No		
	Don't know	✓	
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (On-site Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an Informal waster collecter/picker**		
	Yes	✓ (They allow me to be on-site)	
	No		
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (safety gear)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Sending more waste to the site - Assistive us with grants	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- used diapers - used injections.	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	The closing of the site.	

Research Consent Form - Interviews

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Busani Matenguva....., agree to participate in this interview research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	(YES)	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	(YES)	NO
I agree that the researcher may use anonymous quotes in his / her research report	(YES)	NO
I agree that the interview may be audio recorded	(YES)	NO
I agree that photographs may be taken or requested	(YES)	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work. I agree that the Researcher may take pictures.

All Covid-19 protocols will be followed during face-to-face interviews.

.....attached..... (signature)
...Busani..... (name of participant)
.....08 June 2022.. (date)

.....Irene..... (signature)
...Irene Inan..... (name of person seeking consent)
.....08/6/2022.. (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Questionnaire		
Informal Reclaimers		
This questionnaire will take approximately 30 minutes to complete.		
	Questions:	Responses:
1	**General Information**	
1.1	**Age**	
	18-25	
	26-35	✓ (31 years)
	36 - 35	
	>45 years	
1.2	**Sex**	
	Male	✓
	Female	
1.3	**Employment Status**	
	Working for myself	✓
	Working for a dealer	
	Working for an association	
	Other	
1.4	**Number of dependent family**	
	0 - 5	✓ (3)
	6-10	
	11-1 5	
	> 15	
	No information provided	
2	**Working Conditions**	
2.1	**How many days do you work per week?**	
	7	
	5 - 6	✓ (6)
	≤ 5	
2.2	**How many hours do you work per day?(hours)**	
	0 - 3	
	4 - 6	
	7 - 10	✓ (07:00 - 17:00)
2.3	**How long have you been working as a waste picker?**	
	0 - 10 (years)	✓ (7 years)
	11 - 15 (years)	
	16 - 20 (years)	
	No information provided	
2.4	**What is the mode of transporting the recyclable materials to the dealer?**	
	Bicycle/Motorbike	
	Car/Truck	✓
	On foot	
	Trolley Cart	
	Other	
3	**Material Recoverables (Recyclables)**	
3.1	**From where do you collect the recyclables? (Container, street, household, landfill site etc.)**	
	Depot Areas in Residential Areas	
	Household Bins on the road	
	Streets (Commercial and Industrial Areas)	
	Landfill Site (name?)	Simmer and Jack Landfill site
3.2	**Where do you sell the recyclables?**	
	Within City of Ekurhuleni	✓ (Kemade)
	Outside City of Ekurhuleni	
	It Varies	
	I don't know	

	Other		
3.3	**To whom do you sell the recyclables?**		
	Dealer		
	Middleman		
	Buy Back Centre	✓ Chemade	
	Producer Responsibility Organisation		
	Other		
3.4	**How do you measure your recyclables**		
	Volumetric fill of bags (estimate)		
	Mobile scale		
	Landfill site weighbridge		
	I don't measure - someone else's responsibility	✓	
3.5	**Recovery Amount and Selling Price Table (Weekly)**		
	Recyclables	Avg. R/day (2015)	Avg. R/day (2021)
	Cardboard	✓	✓
	Paper (Other)	✓	✓
	Plastic (PET)	✓	✓
	Plastic (Other)	✓	✓
	Food waste	X	X
	Glass (Bottles)	✓	✓
	Glass (Broken)	X	X
	Metal (Steel)	✓	✓
	Metal (Other)	✓	✓
	Rubber	✓	✓
	If Other, specify		
3.6	**Indicate whether buyers collect thee waste products from you or whether you have to**		
	They collect		
	I have to deliver to them	✓	Always
4	**Material Recoverables (Quantities)**		
4.1	**Do you find any changes in recyclable waste type in the last 5 years (2015 - 2021)?**		
	Yes	✓	
	No		
	Don't know		
4.2	**Do you find any changes in recyclable amounts in the last 5 years?**		
	Yes	✓	
	No		
	Don't know		
4.3	**Will you continue to work in this area?**		
	Yes	✓	
	No		
5	**Integration to City of Ekurhuleni or Producer Responsibility Organisations**		
5.1	**Are you registered as a waste reclaimer or picker with any association or organisation**		
	City of Ekurhuleni		
	Buy Back Centre		
	Producer Responsibility Organisation		
	Nothing		
	Other	✓ (Cornisite Reclaimers Group)	
5.2	**Does the City of Ekurhuleni help you as an informal waster collecter/picker**		
	Yes		
	No	✓	
	Other		
	In what ways could the City of Ekurhuleni do to help you to improve the collection of the recyclables materials?		

5.3	Formal integration - (working with the CoE on waste coming in	✓
	Change of location	
	Separation of material at source	
	Other	✓ (PPE)
	I don't know	
5.4	**What must City of Ekurhuleni do for you in order to be recognised in the formal system of waste management?**	
	- Storage containers - working suits with gloves and boots.	
5.5	**What challenges do you encouter in material recovery (recyclables)**	
	- Broken glass - Dead babies - used injections	
5.6	**Are any threats that you think will impact your livelihood or the amount of recyclables you collect?**	
	Shelter, in case of bad weather is needed	

APPENDIX K

PLATKOP LANDFILL SITE INTERVIEW/QUESTIONNAIRE RECORD SHEETS

Research Consent Form

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Thandazo Mkoko, agree to participate in this research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work.

..... (signature)
Thandazo ..... (name of participant)
17 July 2023 ..... (date)

..... (signature)
Irene Inan ..... (name of person seeking consent)
17/07/2023 ..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Interview		
City of Ekurhuleni Employees and CoE Service Providers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
	Site Supervisor: Managing the CoE team on site as well as overseeing and partaking in activities carried out by the service providers and subcontractors.	
1.2	**How long have you been in that position?**	
	Seven years.	
1.3	**Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	
	No	✓
	I don't know	
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with Infomal sector (reclaimers) on a dally or weekly basis in City of Ekurhuleni? And how?**	
	No	
2	**Informal Sector Contribution**	
2.1	**Is your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
	Not my area of expertise.	
2.2	**What challenges or barriers exist in integrating Informal sector within your existing systems, initiatives or policies or operations?**	
	not my area of expertise.	
2.3	**Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?**	
	No	
2.4	**Are you aware of any success Inititiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	
	No	✓
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activitities in the City of Ekurhuleni ?**	
	Yes	
	No	
	Not my area of responsibility	✓
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni?**	
	Not my area of responsibility.	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	
	Yes; the reclaimers committee should be a starting point.	
3	**Informal Sector Volumes/Tonnages**	
	Who Is responsible for data collection and capturing for informal reclaimers material	

3.1	City of Ekurhulleni	
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Other	✓
	I don't know	
3.2	**Within your area of responsibility, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
	No; The recycling department handles it.	
3.3	**How is this data collected or captured from informal reclaimer material recycables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	✓
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables; and if so where and how many?**	
	Yes. There are at least thirty mini dumps within the City of Ekurhuleni	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	
	NO	✓
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	
	Not my area of responsibility	✓

Research Consent Form

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, Lerato Mkenene....., agree to participate in this research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work.

..... (signature)
....Lerato..... (name of participant)
....14 July 2023..... (date)

..... (signature)
.....Irene Inan..... (name of person seeking consent)
.....14/07/2023..... (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Interview		
City of Ekurhuleni Employees and CoE Service Providers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
	Team Lead: Financial admin - Responsible for the access control and data collection for all the transaction	
1.2	**How long have you been in that position?**	
	8 Years	
1.3	**Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?**	
	Yes, elaborate	
	No	✓
	I don't know	
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni? And how?**	
	No	
2	**Informal Sector Contribution**	
2.1	**Is your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
	Not my area of expertise	
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	
	No applicable	
2.3	**Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?**	
	NA	
2.4	**Are you aware of any success inititiatives or programs run by other entitles (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	Local mini dumps
	No	
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activitites in the City of Ekurhuleni ?**	
	Yes	
	No	✓
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni?**	
	Not my area of expertise	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	
	Not my area of expertise	
3	**Informal Sector Volumes/Tonnages**	
	Who is responsible for data collection and capturing for informal reclaimers material	

3.1	City of Ekurhulleni	
	Service Provider appointed by City of Ekurhuleni	
	Third Party Entity	
	Other	
	I don't know	✓
3.2	**Within your area of responsibiliity, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
	Not my area of expertise	
3.3	**How is this data collected or captured from informal reclaimer material recycables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others ✓	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for Informal reclaimers recyclables; and if so where and how many?**	
	32 mini dumpers are located are doing recyclables	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	NA
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of Informal reclaimers?**	
	YES	
	NO	✓
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	
	Not my area of responsibility	✓

Research Consent Form

Title of project: **Informal Waste Sector in the City of Ekurhuleni**

Name of researcher: **Irene Inan (nee Nyirenda) – Student No: 0208508J**

I, PETER MTSWENI....., agree to participate in this research project. I have been given information about the research on informal waste sector and discussed the research project with Irene Inan (nee Nyirenda) who is conducting this research as part of a master's degree supervised by Dr. Anne Fitchett at the University of Witwatersrand (School of Civil & Environmental Engineering). The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that participation is voluntary, and I can withdraw from the research at any time.	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO

Any photos taken will be for illustrative purposes only of the activities being undertaken, and the pictures will not be used anywhere else than the sole purpose of the research work.

..... (signature)
PETER MTSWENI (name of participant)
17/07/2023 (date)

..... (signature)
Irene Inan (name of person seeking consent)
17/07/2023 (date)

Research Survey Sheet		
City of Ekurhuleni - Informal Waste Sector Interview		
City of Ekurhuleni Employees and CoE Service Providers		
This questionnaire will take approximately 15 - 20 minutes to complete. All Covid-19 protocols will be followed.		
	Questions:	Responses:
1	**Stakeholder - General Information**	
1.1	**What is your role/position in your organisation and what are you responsible for?**	
	AREA MANAGER - OVERALL LANDFILL OPERATIONS.	
1.2	**How long have you been in that position?**	
	5 YEARS	
1.3	**Are there any existing policies or future initiatives to incorporating or working with the informal sector towards material recovery or re-use?**	
	(Yes) elaborate	YES, TO MAKE SURE THE DONI DISTURB THE OPERATIONS.
	No	
	I don't know	
	Not my area of responsibility	
1.4	**Are there any interfaces in your work with dealing with Informal sector (reclaimers) on a daily or weekly basis in City of Ekurhuleni? And how?**	
	YES BY HAVING WEEKLY MEETING WITH THEM.	
2	**Informal Sector Contribution**	
2.1	**Is your view, what current benefit do the informal sector bring to City of Ekurhuleni or private sector in terms of material recovery and re-use?**	
	IT HELPS WITH THE LANDFILL SITE LIFE SPAN.	
2.2	**What challenges or barriers exist in integrating informal sector within your existing systems, initiatives or policies or operations?**	
	RECLAIMERS DONT USUALLY CLEAN THEIR WORK SPACE.	
2.3	**Are there any existing opportunities where the informal sector can be formally integrated into waste material recovery systems in the City of Ekurhuleni?**	
	NO	
2.4	**Are you aware of any success inititiatives or programs run by other entities (metropolitan or private sector) elsewhere in formally integrating the informal sector?**	
	Yes	YES
	No	
2.5	**In your view do you have sufficient data or information on recyclables volume of the informal sector activities in the City of Ekurhuleni ?**	
	Yes	YES
	No	
	Not my area of responsibility	
2.6	**What challenges exist in material recovery (recyclables) in City of Ekurhuleni?**	
	NOT MY AREA OF RESPONSIBILITY	
2.7	**Are there any other organisations or associations that you believe City of Ekurhuleni should be engaging or working with in formalizing the informal sector?**	
	NO	
3	**Informal Sector Volumes/Tonnages**	
	Who is responsible for data collection and capturing for informal reclaimers material	

3.1	City of Ekurhulleni	
	Service Provider appointed by City of Ekurhuleni	✓
	Third Party Entity	
	Other	
	I don't know	
3.2	**Within your area of responsibililty, do you have direct access to data on what is recycled, transported or moved by the informal reclaimers within City of Ekurhuleni?**	
	YES	
3.3	**How is this data collected or captured from informal reclaimer material recycables or recoverables?**	
	By City of Ekurhuleni - Landfill Site Weighbridge or Mobile Scale	✓
	By Informal reclaimers - manual or volumetric measurements	
	Buyback centres field personnel	
	Others	
3.4	**Are they any depots or waste transfer stations in the City of Ekurhuleni designated for informal reclaimers recyclables; and if so where and how many?**	
	NOT MY AREA OF RESPONSIBILITY.	
3.5	**If you could provide data tonnes/month or as a percentage; how much of the materials recycled and recovered at your depots or facilities in a month accounts for waste received from informal reclaimers in City of Ekurhuleni?**	
	Cardboard	
	Paper (Other)	
	Plastic (PET)	
	Plastic (Other)	
	Food waste	
	Glass (Bottles)	
	Glass (Broken)	
	Metal (Steel)	
	Metal (Other)	
	Rubber	
3.6	**Do you keep an official database of informal reclaimers?**	
	YES	✓YES
	NO	
3.7	**Do you provide informal reclaimers with transport to collect from the various depots, waste transfer stations, landfill sites or mini dumps?**	
	Yes, elaborate	
	No	NO
	Not my area of responsibility	