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Waste recycling and small, micro, and medium enterprises (SMMEs) development in Greater Kokstad Municipality.

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CHAPTER 1

INTRODUCTION

1.1 BRIEF OVERVIEW OF THE STUDY

Waste management is an issue that affects the world as a whole. All countries are confronted with challenges brought about by increasing waste generation caused by increasing urban population as well as growing production and consumption levels. The United Nations, through its bodies, has raised concerns regarding environmental protection and the need to develop policies that ensure sustainable development. One of the United Nations Millennium Development Goals states that all nations have to ensure environmental sustainability in their development programs (Davids, Theron & Maphunye, 2005). Waste is a threat to both human health and the environment and that is why all nations grapple with it and develop mechanisms, policies and Acts that regulate waste and waste management.

The South African government has also committed itself to ensuring environmental protection through the enactment of a number of policies and Acts (Kidd, 2008). Because waste management forms part of environmental protection, the government has ensured that issues of waste management are given the necessary priority.

Local municipalities have, as one of their mandates, the responsibility to deal with issues of refuse removal, refuse dumps and solid waste disposal in terms of the powers and functions vested in local government (Constitution of the Republic of South Africa, 1996). In the performance of its powers and functions related to refuse removal, refuse dumps and solid waste disposal, municipalities should emphasize a waste management hierarchy which begins with waste prevention, waste reduction, resource recovery, waste treatment and as a last resort, waste disposal (Draft National Waste Management Strategy, 2010; National Environmental

Management: Waste Act, 2008). Municipalities generate a lot of solid waste and if all this waste gets disposed of in a landfill site, the landfill site becomes full and its lifespan is shortened.

This study investigated the experiences and challenges confronted by waste pickers and waste recycling Small, Micro, and Medium Enterprises (SMMEs). Research participants also suggested ways by which the challenges encountered can be overcome. The objectives of the study were (1) To explore the experiences and challenges faced by waste pickers and recycling SMMEs (2) To explore reasons why a large volume of municipal waste is disposed of in the landfill site (3) To investigate why minimal business opportunities are created out of municipal waste (4) To determine whether conditions in the municipal waste management system favour the development of business opportunities in waste management (5) To determine the volume of waste that is diverted from the landfill site (6) To investigate the types of recyclables that are collected from the waste stream and lastly (7) To recommend policy proposals that would facilitate waste recycling.

1.2 STATEMENT OF THE PROBLEM AND RATIONALE FOR THE STUDY

At the Greater Kokstad Municipality (GKM) there are very few companies that are involved in waste recycling activities and one wonders why. The rate of unemployment, like the rest of the country is high and recycling can be an income generating activity which was supposed to be fully exploited by individuals and Small, Micro and Medium Enterprises (SMMEs). The Department of Environmental Affairs, in partnership with the Department of Co-operative Governance and Traditional Affairs, runs the greenest town competition every year and their aim is to encourage municipalities to promote a clean and green environment (Concept document: Greenest municipality competition, 2009). In spite of these efforts, there are very few companies, individuals and SMMEs that undertake recycling activities.

Currently, there are no exact figures of the total amount of waste generated by GKM each year and this is due to the fact that there is no weigh bridge. What is observed each day is the large amount of waste deposited in the landfill site. This disposed waste comprises recyclable material as well as material that can still be reused. These recyclables are a resource which should be recovered by unemployed people or SMMEs for purposes of income generation. Unfortunately this resource is buried in the landfill every day and yet Kokstad has a high rate of unemployment

and a severe lack of job opportunities (GKM reviewed Integrated Development Plan, 2011/12). The current Kokstad landfill site has no permit to be used as a landfill site in terms of the Department of Environmental Affairs regulations and is about to reach its full capacity because of high volumes of waste disposed of at this landfill site (GKM Readiness report, 2010). Kokstad does not have any readily available land to be used as a landfill site but the municipality is in the process of identifying suitable land for that purpose (GKM Readiness report, 2010). Once alternative land has been secured, the Environmental Impact Assessment (EIA) processes will commence in terms of the National Environmental Management Act (NEMA) (1998). It will take some years before the new landfill site becomes available for use. If the high volume of waste is not re-used and recycled even the new landfill site will have a short lifespan. Minimal and small scale recycling activities in the Greater Kokstad Municipality pose a challenge.

Another concern is that the disposal of a large volume of waste at the Kokstad landfill site poses both an environmental and a health risk to the Kokstad community. The risk to the environment emanates from the fact that waste generates toxic material and toxic gases and liquids that are dangerous to the environment. Such liquids, gases and contaminated material also become a health risk to the community. The policy on integrated waste management has been in operation for more than ten years now, but predominantly it appears that in Kokstad traditional approaches to waste management are still practiced. According to Rwigema and Venter (2004) the Department of Trade and Industry has policies, that will be highlighted in the next section, that are aimed at promoting SMME development and job creation but there is a high rate of joblessness in Kokstad and there are few SMMEs that exploit business opportunities in waste management. Even the SMMEs that exist seem to be overwhelmed by the volume of recyclables in municipal waste. In addition studies on waste recycling and SMME development have not been conducted in the GKM area. Research is therefore needed to explore the experiences and challenges encountered by waste pickers and recycling SMMEs. Therefore this study attempts to enhance the knowledge base pertaining to the experiences and challenges faced by both waste pickers and recycling SMMEs. Once the research report is finalized, the results will be a landmark in the field of waste management. This knowledge is vital for planning, development and for the implementation of government policies and statutes in ways that tend to promote the short and long terms objectives of the government.

Although recycling has been practiced throughout the human history, it is not well understood and its role not appreciated by many communities, governments and the business sector (Medina, 2007). There is no common understanding of what people doing recycling should be called and how they should be treated. In some instances those people involved in waste picking refer to themselves as recyclers but industries responsible for converting recyclables into new products also call themselves recyclers. In the recycling value chain there is no general agreement on how to refer to dealers at various levels of the value chain. Chvatal and Samson (as quoted by Schenck & Blaauw, 2011) state that people who make a living by collecting and selling recyclables have earned various names such as being called waste pickers, scavengers, waste recyclers, garbage pickers, waste salvagers and waste reclaimers. Some of these names have both positive and negative connotations depending on the area, country or community within which they practice their job. Schenck and Blaauw (2011) prefer to call them "waste pickers" because this name bears a more positive meaning as it describes what they do. The researcher will henceforth adopt the same name to refer to people engaged in waste picking and the middlemen will be referred to as waste recycling SMMEs or just SMMEs.

Waste pickers usually collect their recyclables and sell them to middlemen, waste recyclers, waste dealers, waste brokers (depending on the area). Waste collected is weighed and a waste picker is paid according to the weight of recyclables sold (Langenhoven & Dyssel, 2007). Waste pickers are not formally employed by middlemen or recycling SMMEs but they sell to those who pay better and to those who are in their proximity (ibid). Middlemen or recycling SMMEs then sell these recyclables to waste dealers at the next level of the value chain until recyclables get to industries where actual recycling takes place. Both waste pickers and recycling SMMEs were included in the study so as to capture the experiences of both groups to complement, supplement and enrich the information gathered and to attain a deeper understanding of the phenomenon under study.

1.3 THE CURRENT POSITION OF GKM AND SMME DEVELOPMENT

Greater Kokstad Municipality is a local municipality situated at the south western tip of KwaZulu Natal Province. It is one of the five local municipalities that form Sisonke District Municipality. It borders with the Eastern Cape Province. According to Stats S.A., census 2001[Stats, 2001] (as cited in the GKM Integrated Development Planning review document for

the 2010/11 financial year [IDP 2010/11]), GKM has a population of 56 526. The community survey, 2007 (as cited in the IDP 2010/11) reflects a decrease in population size as it stands at 46 724. The majority of the population is Africans who constitute 86.80% (Stats, 2001) and 82.0% (Community Survey, 2007). GKM is a district node and a dominant commercial centre in the Sisonke District (IDP 2010/11). The majority of the population of GKM lives in Kokstad where the municipal headquarters are situated.

GKM has a high unemployment rate of 30.82% (Stats, 2001) and 34.94% (Community Survey, 2007). Levels of education are as follows: people with no schooling are 41.31% of the population, those with pre-school education 3.01% and those with primary and secondary education 54.8% (Stats, 2001 as cited in IDP 2010/11). The unemployment rate in the GKM is higher than the national average which is 30% (Nieuwenhuizen, 2003). Employment statistics are linked to how the economy performs and where the economic growth rate is low, employment opportunities are also low (Nieuwenhuizen, 2003). The White Paper on National Strategy for the Development and Promotion of Small Business in South Africa [White Paper on National Strategy](1995) recognizes the fact that there are millions of South Africans who are unemployed and underemployed and that the government has to prioritize job creation and the creation of sustainable and equitable economic growth. The White Paper on the National Strategy (1995, p.3) states that “Small, Micro and Medium enterprises [SMMEs] represent an important vehicle to address the challenges of job creation, economic growth and equity in our country. Throughout the world one finds that SMMEs are playing a critical role in absorbing labour, penetrating new markets and generally expanding economies in creative and innovative ways”.

In South Africa most entrepreneurial activity takes place within the SMME sector (ibid). About 97.5% of all businesses in South Africa consist of SMMEs (Ntsika Annual Review, as cited in Nieuwenhuizen, 2003). These SMMEs contribute about 34.8% of the Gross Domestic Product and they employ 54.5% of the formal private sector employees (Diederichs as cited in Nieuwenhuizen, 2003). According to Moolman (1998), there are more than 800 000 formal enterprises in South Africa and 720 000 of these are SMMEs. These SMMEs contribute about 45% to the GNP (SBDC as cited in Moolman, 1998). SMMEs in this country, employ approximately 2.4 million people or 17 % of the total of the 14.3 million economically active

members of the population. These figures do not include the informal sector of 4.4 million people (SBDC as cited in Moolman, 2003). This emphasizes the important role played by SMMEs in the improvement of the South African economy. SMMEs are also labour intensive and that is why they absorb such a large number of workers. SMMEs are run by entrepreneurs and Nieman (2002, p.58) defines an entrepreneur as "a person who sees an opportunity in the market, gathers resources and creates and grows a business venture to satisfy these needs".

The entrepreneurial spirit develops as a result of a number of push and pull factors. Push factors include, inter alia, unemployment, job insecurity, disagreement with management, poor pay, and the lack of prospects to rise to higher levels (Rwigema & Venter, 2004; van der Merwe, 2003), while pull factors comprise a desire for independence, achievement, recognition, a new idea to exploit, personal development and personal wealth (ibid). Through the process of innovation, an entrepreneur must identify an opportunity. Rwigema and Venter (2004, p.29) define an opportunity as a "chance to improve an existing situation or create new possibilities" or a "gap left in a market by those who currently serve it". Entrepreneurs examine ideas that can be converted into a business opportunity. The establishment of a business venture depends on the successful synchronization of the three driving forces which are the entrepreneur, the opportunity and the resources (Human, 1998). Potential entrepreneurs within the GKM should be proactive, innovative and creative in exploiting the opportunity created by the unresolved problem of waste management. The municipality cannot identify suitable land for a landfill site, and there are illegal dump sites which cannot be controlled (IDP, 2010/11). The current landfill site has reached its capacity and there are large volumes of waste discharged into the already full landfill site. Obviously this is an opportunity for entrepreneurs to utilize by developing a new venture or expanding the already existing SMMEs in the area of waste management.

1.4 RESEARCH DESIGN AND METHODOLOGY

Based on the statement of the problem as well as the rationale for the study as outlined above, the researcher seeks to explore the experiences and challenges faced by waste pickers and recycling SMMEs. The research study was qualitative in nature aiming at gathering information related to the experiences and challenges that research participants encounter in their recycling activities. A qualitative approach was found appropriate for this study since research participants would be able to give personal account to their lived experiences pertaining to waste picking and

waste recycling. Focus groups were held with waste pickers and one-to-one semi-structured interviews were held with two recycling SMMEs. Data gathered was analyzed using Tesch's model of qualitative data analysis and themes, sub-themes and categories were identified. Discussion of the themes, sub-themes and categories was done and relevant literature study was undertaken. Trustworthiness was ensured by applying Guba's model which covers issues such as truth value, applicability, consistency and neutrality. Some limitations of the research design and methodology were member domination, generalizability and transferability, confidentiality/anonymity, production of useless information, and the interviewee effect. Ethical issues that were highlighted were informed consent, violation of privacy or confidentiality, actions and competence of researchers, release or publication of the findings, debriefing of participants and management of information.

1.5 CONCLUSION

This chapter covered the information that relates to the responsibilities of municipalities particularly regarding waste management in general as well as matters pertaining to environmental protection. Challenges facing municipalities with regard to waste removal and disposal were highlighted. A brief presentation of the aims and objectives of the study, the research methodology, limitations and ethical considerations was provided. The study was placed in context in terms of describing the problem first and then secondly providing motivation for undertaking this kind of study. The position of the greater Kokstad municipality was discussed in relation to the non-availability of a permitted landfill site, how the municipality struggles to get hold of extra land for the building of a new landfill site, the fact that the GKM depends largely on its unpermitted landfill site to dispose of general waste and that apparently local SMMEs do not have capacity to recycle most of the waste generated in Kokstad resulting in general waste being disposed of predominantly through landfilling.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Waste management is a global phenomenon and all nations have a responsibility to ensure that environmental degradation is prevented. Waste has a negative impact on the environment as well as a health risk if not handled conscientiously. The United Nations developed eight Millennium Development Goals (MDGs) and at least two of these goals are relevant to this study. The first relates to the eradication of extreme poverty and hunger and the second is about the promotion of environmental sustainability (Davids, Theron & Maphunye, 2005). The world is currently concerned about issues of climate change and waste has an impact on global climate changes because it produces some of the greenhouse gases that are responsible for climate change. All nations need to develop policies and legislation directed at promoting environmental justice.

According to the Constitution of the Republic of South Africa (1996), there are five objectives of local government and two of these are relevant to the research topic. The first relevant objective relates to the promotion of social and economic development and the second objective focuses on the promotion of a safe and healthy environment. The Constitution (1996, sec. 24 (a) & (b)) further states that “everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development”.

2.2 HISTORICAL OVERVIEW OF WASTE GENERATION

The generation of waste by humans is as old as humans themselves. Waste generation is a consequence of human development and almost everything done by human beings leaves behind some waste (Mnyani, 2003; Pichtel, 2005). In the past waste produced by man did not pose any threat to human health because of sparse population and vast tracks of land (Tchobanoglous, Theisen & Vigil, 1993). When waste began to pile up, people who lived a nomadic lifestyle would just abandon the area and settle elsewhere (Pichtel, 2005). The only period when waste

started to be a concern and a health hazard was after the Second World War (ibid). There are a number of reasons which gave rise to a change in people's life style. Firstly, population numbers increased dramatically. Secondly, there was an increase in economic growth. Thirdly, there was an increase in the production of goods because of an introduction of new technology. Fourthly, there was an increase in expenditure on consumables which pushed up the rate of waste generation (Mnyani, 2003; Pichtel, 2005).

The National Environmental Management: Waste Act, [later the Waste Act] (2008, sec.1) defines waste as "any substance, whether or not that substance can be reduced, re-used, recycled and recovered - that is surplus, unwanted, rejected, discarded, abandoned or disposed of, which the generator has no further use of for the purposes of production; that must be treated or disposed of; or that is identified as waste by the Minister by notice in the gazette, and includes waste generated by the mining, medical or other sector, but –a by-product is not considered waste, and any portion of waste, once re-used, recycled and recovered ceases to be waste". Waste can either be solid, liquid, gaseous, or radioactive or any combination thereof and may originate from domestic, commercial, agricultural, construction, institutional or industrial activities (Bosman, 2009; Middleton, 2008; Mnyani, 2003). There is general or domestic waste which does not cause any immediate danger to human health and it includes residential, commercial, institutional, industrial and agricultural waste and there is also hazardous or medical waste which includes substances that are toxic to humans, plants or animals. This research will, however, focus on general or domestic waste.

Municipalities have been using a variety of waste disposal mechanisms such as land disposal especially landfill sites, water disposal, and incineration but landfill disposal has been the most preferred method (Pichtel, 2005; Williams, 2005). Landfill disposal of waste was preferred because it was cheap and simple, it was readily available, and it could be used for the disposal of a variety of waste streams (ibid). Towards the end of the last century there was a growing concern about the dangers caused by the large volume of waste that is disposed of through landfills. Environmentalists began to campaign for a paradigm shift in waste management whereby emphasis was placed more on waste reduction, minimization, re-use and recycling and less on landfill disposal (Pichtel, 2005; Williams, 2005).

2.3 WASTE MANAGEMENT AND CLIMATE CHANGE

The international community is concerned about the effect of climate change on the environment. According to Weston (2011) climate change is one of the greatest threats to sustainable development and environmental protection. Climate change is caused by the emission of greenhouse gases into the atmosphere which becomes responsible for bringing changes in temperatures, rainfall intensity and seasonality, drought, sea-levels, and other disasters (Devine, 2009; Rumsey & King, 2009). The international community adopted the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 aimed at stabilizing greenhouse gas concentrations in the atmosphere by setting targets to greenhouse gas emissions by humans (Devine, 2009). The UNFCCC agreement was followed by the Kyoto Protocol in 1997 (ibid). The Kyoto Protocol binds developed nations to set targets that reduce greenhouse gas emissions to the atmosphere. The first commitment period started in 2008 and it ended in 2012. In 2010 governments agreed that emissions need to be reduced so that global temperature increases are limited to below 2 degrees Celsius. The Conference of Parties (COP 17) met in Durban (South Africa) in December 2011 in search of another lasting solution to the problem caused by greenhouse gas emissions. According to de Boer (2012) the Kyoto Protocol agreement was extended with the second commitment period starting in 2013. The new agreement concluded in December 2011 included the major greenhouse gas emitters which are China and the USA (ibid).

The dump sites or landfill sites play a significant role in greenhouse gas emissions. The South Durban Community Environmental Alliance (2011, p.130) asserts that “the dumps produce landfill gas (LFG) - dirty methane (a major greenhouse gas) in particular. This is created from rotting organic matter, and it is dirty because it is contaminated by everything else that goes to the dump”. Rumsey and King (2009) argue that the main gases emitted by the landfill sites and which contribute to climate change are carbon dioxide, methane and nitrous oxide. Waste pickers are voicing their demands too in relation to the conditions under which they work and they have used international events as their platform to raise their concerns. They want recognition of the role they play in the waste management system. The South Durban Community Environmental Alliance (2011, p.130) quotes the waste pickers as saying “The waste management system neglects separation of waste, so it is all mixed together and creates dirty and dangerous working

conditions for us. We also appeal to people to separate wet compostable waste from other waste". At COP16 in Cancun and COP17 in Durban South African waste pickers joined the Global Alliance of Waste Pickers in voicing their demands, among others for the recognition of the role they play in greenhouse gas emissions mitigation (The South Durban Community Environmental Alliance, 2011). Waste pickers claim that recycling serves to reduce carbon emission. They argue "We return materials to industry and the avoided emissions along the production chain are even greater than the emissions from dumps and incinerators" (The South Durban Community Environmental Alliance, 2011, p.130).

2.4 AN INTERNATIONAL PERSPECTIVE OF WASTE MANAGEMENT

Waste and waste management do not only affect South Africa but are issues with which the whole world is grappling. The concerns, problems and challenges are of a global nature but each country has its own laws, regulations and approaches pertinent to that country, governing waste management. Since waste affects environmental management issues some countries develop regional policies that oblige all member states of that regional organization, like the European Union (EU), to develop policies aimed at promoting environmental justice. It is important to highlight some global perspectives regarding waste management before focusing on South African intricacies.

2.4.1 The European Experience

Bagchi (2004) contends that there is about 3000 million tonnes of waste generated throughout Europe each year. Europe, like the whole world, has been struggling with how to manage waste in an environmentally friendly and healthy manner. The primary mode of waste disposal has been through landfilling (Williams, 2005). The European Economic Community (EEC), now called the European Union (EU), was established in 1958 to deal primarily with matters of economic cooperation and extended its scope of work to include, inter alia, environmental management issues (Williams, 2005). The EU developed a number of Acts, policies and regulations pertaining to the protection and the improvement of the quality of the environment and some of these prescripts were a response to global imperatives. In terms of the Waste Framework Directive (1975) as amended in 1991 and 1996, each member state of the EU should develop its National Waste Strategy that deals with matters of waste generation, recovery and

disposal (ibid). The National Waste Strategy of each EU member state adopted the new paradigm shift in waste management which emphasizes the waste hierarchy prioritizing waste reduction, reuse and recycling. The new waste hierarchy places waste landfilling as the least desirable option (ibid). There are a number of policy directives that have been enacted to deal directly with air, water and land pollution (Bagchi, 2004). Each member state has an obligation to promulgate a relevant legislation to be able to implement the provisions of each Directive. These Directives focus on matters such as transfrontier shipments of waste, integrated pollution prevention and control, waste incineration, waste landfill, packaging waste and electronic waste to mention just a few that are related to waste (ibid). The Directives act like a policy that guides, directs and controls issues related to that particular focus area (Bagchi, 2004).

In addition to the above Directives, there are also economic policy instruments that impose taxes, charges and tariffs to enforce observance and adherence to policy Directives by EU member states (Bagchi, 2004). The EU encourages each member state to develop and adhere to its own taxes, charges and tariffs. Each member state sets taxes, charges and tariffs on any organization or manufacturer who disposes large volumes of waste on landfills instead of adopting cleaner technologies that would reduce and prevent too much waste being disposed of in landfills. This is in line with the “polluter pays” principle which makes those organizations or companies to be responsible for the costs of pollution producing substances. There are a number of countries that have developed landfill taxes and incineration taxes. Another economic instrument developed to discourage landfilling of too much waste is the landfill permits or allowances. According to this system each local authority is allocated a certain tonnage of waste to discharge in landfill sites and if it exceeds the limit it is penalized and a local authority that diverts much of its waste from the landfill sites avoids payment of penalties (Bagchi, 2004).

Apart from the EU Directives that were implemented by each member state, legislation was also passed by various countries to manage and control waste management as early as the Nineteenth century. The United Kingdom (UK), for instance, passed a number of Acts directed at waste removal, disposal and management (Williams, 2005). These Acts include the Public Health Acts of 1875 and 1936 dealing with waste removal and disposal; The Deposit of Poisonous Waste Act in 1972 which was aimed at controlling the dumping of toxic substances; the Control of Pollution Act of 1974 which controlled waste disposal on land. The UK was the first country to

introduce the use of incinerators as a waste control mechanism in the 1870s. Currently waste management in the UK is governed by the Environmental Protection Act of 1990 (Williams, 2005). As a result of the implementation of the new waste hierarchy which prioritizes waste reduction, re-use and recycling there are a number of recycling programs throughout the UK. By the beginning of the twentieth century there were about 300 incinerators operating in the UK. Attempts to reduce, reuse and recycle waste in the UK have yielded positive outcomes according to the information release by defra (Department for Environment, Food and Rural Affairs). Defra (retrieved from http://www.defra.gov.uk on 6/29/2012) reports that the recycling rate has increased from 39.7 per cent in 2009/10 financial year to 41.5 per cent in 2010/11 financial year (increasing from 3.2 to 9.7 million tonnes per year), amount of waste disposed of in landfill sites has decreased by 8.8 per cent between 2009/10 and 2010/11 financial years, and waste generated by households has also decreased by 0.9 per cent in the same period.

2.4.2 Waste management in the USA

Developments in waste management in the USA were similar to those observed in other countries. Waste began to be a nuisance to human kind centuries ago when the population increased and households started to settle next to each other (Williams, 2005). Local Authorities were charged with the responsibility of developing mechanisms with which to handle waste and a waste collection or removal system was adopted (ibid). Amongst waste accumulated at the time was waste involving recyclables such as old crockery, paper, rags, glass, iron and brass (ibid). During those earliest days waste used to be burnt after scavengers had collected useful and valuable items. According to Williams (2005) the first incinerators were introduced in the USA in Pennsylvania in 1885 and by 1914 there were about 300 incinerator machines in the USA. Beside the use of incinerators, land disposal of waste became a common phenomenon because land dumping of waste was regarded as a simple and easy method of waste disposal (ibid). Disposal of waste through open land dumping became environmentally unhealthy because of uncontrolled odours, infestation with vermin and the development of fires and people began to bury waste (Williams, 2005).

After the second world war and especially in the 1960s and 1970s people became environmentally conscious and were more concerned about health hazards brought about by improper methods of waste management. They began to clamour for environmentally friendly

methods of waste control and management (Williams, 2005). In 1976 the Resource, Conservation and Recovery Act (RCRA) was promulgated and this Act distinguished between hazardous and non hazardous waste and the separate requirements for their disposal (ibid). Currently waste management in the USA is controlled by Environmental Protection Agency (EPA). According to EPA policy waste should be managed in accordance with the new hierarchy which emphasizes source reduction, re-use, recycling incineration with energy recovery and lastly landfilling (ibid). As a result of the EPA policy many states in the USA have established source waste reduction programs as well as recycling centers. Williams (2005, p.56) states that "approximately 9000 residential curbside recycling programs are in operation throughout the country with over 12 000 bring recycling centers. To process these recycled materials there are 480 materials recovery facilities across the US". According to EPA in 2009 about 243 million tons of waste were generated and of this amount about 82 million tons were recycled and composted (http://www.epa.gov/epawaste/nonhaz/municipal/pubs/msw2009-fs retrieved on 17/06/2011). In 2009, Americans recovered about 61 million tons of municipal solid waste (MSW) through recycling, composted about 21 million tons of waste and combusted about 29 million tons for energy recovery (ibid). EPA further reports that "over the last few decades, the generation, recycling, composting, and disposal of MSW (Municipal Solid Waste) have changed drastically. While solid waste generation has increased from 3.66 to 4.34 pounds per person per day between 1980 and 2009, the recycling rate has also increased from less than 10% of MSW generated in 1980 to almost 34% in 2009. Disposal of waste to a landfill has decreased from 89% of the amount generated in 1980 to about 54% of MSW in 2009 (ibid). The recycling of more than 7 million tons of metals which includes aluminum, steel and mixed metals, meant that the US has reduced greenhouse gas (GHG) emissions of about 25 million metric tons of carbon dioxide equivalent.

2.5 OVERVIEW OF WASTE PICKING

Waste picking is an old phenomenon practiced in various parts of the world, according to Medina (2007) and it spans throughout the human history. It is a trend in both developed and developing countries. Blincow (as cited by Tevera, 1994, pp21-22) defines scavenging as "the activity involved in the collection and disposal of culturally-defined waste materials, whether that activity be done directly for subsistence (food, clothing, and artifacts) for exchange, for sale, or for wages or as is sometimes the case, or some combination of these". It was and is still used to recover materials that are still regarded as of value from the waste stream. These materials include wood, ceramics, metals, glass, paper, textiles, food and other valuables (ibid). Waste picking plays an important role in reducing the amount of waste that needs to be collected, transported and dumped and it also serves to prolong the lifespan of landfill sites.

2.5.1 Waste pickers in developed countries

Although waste picking is often associated with the developing countries, history shows that developed countries have been part of the recycling work from the earliest times up to the present (Medina, 2007). Waste picking or recycling in developed countries as in developing countries plays a significant role in both economic development as well as environmental management (ibid). As has been mentioned earlier, waste picking has been used to retrieve used and valuable materials from the waste stream. Scavenging, as it has been called, has been used as an adaptive response to the scarcity of commodities (Medina, 2007). Romans were involved in the recycling of materials such as bronze which was melted and recycled into new products. There were also people called peddlers in Rome who used to sell old clothes. Old stone buildings were demolished and the old stones were recovered and used to erect new structures (Medina, 2007). Waste, including human excrement, was collected and used as fertilizer by farmers. The Japanese outcasts were used to collect human corpses and dead animals. Due to lack of cotton, old clothes were collected and reused in making diapers, rags and other household commodities (ibid). According to Medina (2007) most parts of the developed world reused and recycled pieces old pottery to manufacture new pottery. In most parts of Europe, and particularly Spain, rag collectors were used to collect old rag for manufacturing paper.

In America, reuse of materials was encouraged as it involved less work and energy than using virgin materials. Medina (2007, p.27) argues that "poverty and scarcity forced the colonists to develop a resource-efficient culture in which products were used for as long as possible, reused, mended, repaired, and when they were no longer usable, recovered and recycled". Metals were melted and reused instead of using virgin materials. In America, recycling was undertaken largely as an economic activity to save usually scarce resources (ibid). In developed countries, three factors contributed to the rapid increase in scavenging and these factors were (1) Increased generation of waste in urban areas, (2) The industrial revolution which increased the demand for raw materials and (3) A large number of people who were willing to scavenge (Medina, 2007). Throughout history municipal waste was regarded as a resource that was valuable with economic as well as environmental benefits.

2.5.2 Waste pickers in developing countries

Medina (2007) has also written extensively about waste picking in the developing countries. Studies have been conducted in many parts of the third world on waste picking as an informal economic activity and these activities have been practiced from time immemorial (ibid). Due to rapid urbanization as well as high levels of poverty in developing countries, waste pickers have also increased (Madsen, 2006; Medina, 2007). They are found in large numbers in Africa, the Caribbean, Latin America, and in Asia and predominantly operate in large cities (Medina, 2007). Madsen (2006) estimates that about 2% of the population in third world countries survive by means of waste picking. The exact number of waste pickers in each city are not known because most of them are not organized. In Pune, India, there are about 10 000 waste pickers, in Calcutta, the estimate stands at 20 000, in Manilla, there are about 12 000, in Mexico City the estimate is 15 000, and in South Africa about 37 000 waste pickers live by collecting cans for recycling (Langenhoven & Dyssel, 2007; Medina, 2007). Medina (2007) state that predominantly the people involved in waste picking are the migrants, the unemployed, children, women and the handicapped. For poverty stricken individuals waste picking "provides the only possibility for survival because waste-based livelihoods are not dependant on having access to land or individual usufruct rights" (Madsen, 2006, p.172). In addition, Huysman (1994) argues that waste pickers do not have to invest money, be educated or have contacts to start waste picking. As a result of exclusion from other sources of income, poor people have found a resource in the

form of waste discarded by others. Waste pickers "live on waste and are completely dependent on it for food and clothing" argues Madsen (2006, p.172). Waste pickers are predominantly found in big cities but they have started to emerge even in smaller towns such as Kokstad.

2.5.3 Characteristics of waste pickers

It has already been highlighted that predominantly, especially in third world countries, waste pickers are people who are very poor compared to the rest of the community (Medina, 2007). They are excluded from the formal labour market. People living in poverty are able to meet their basic needs through waste picking and they are able to get wood and other household needs without having to pay for them. According to Medina (2007) waste pickers receive very low incomes, they are usually dirty with an unpleasant appearance and they are given very low status in society (ibid). Waste pickers are people who are immigrants with very low skills, mostly unemployable given their low levels of education and are unlikely to compete favourably for any kind of a job except waste picking (Medina, 2007). Their work is regarded as representing an adaptive response to severe conditions of living in poverty without any alternative means of livelihood. Waste pickers are regarded as "a nuisance or a source of humiliation by people and authorities. In many countries, there is an impression that they should be forced out of this occupation by modernizing the service" (Medina, 2007, p.65). Waste pickers are involved in an informal activity that is not regulated, labour-intensive requiring low technological skills and it pays very low wages (Medina, 2007). The work done by waste pickers forms a significant link between the formal economy and the informal sector because they supply raw materials essential for manufacturing goods and commodities needed by the formal economy (ibid). Since waste picking is not regulated, those involved in it usually become victims of labour exploitation by waste recycling SMMEs or the middlemen. Waste pickers who operate from the landfill sites are normally at risk of getting injured by machines as they pick up recyclables.

2.5.4 How do waste pickers recover recyclables?

Waste pickers use various means to recover valuable material from waste and Medina (2007) suggests the following;

- Source separation. Waste pickers collect whatever is deemed valuable from the households. Some materials are recovered directly from businesses and offices. Waste pickers may use trolleys, horse drawn carts, bakkies, tractors with trailers or trucks.

- Sorting of recyclables by collection crews while on their collection routes. These may be municipal waste collectors employed to collect, transport and dispose waste but in the process may identify and sort certain valuable materials separating them from the general waste. When they dispose of the waste these valuable materials are usually kept aside for selling to waste traders or SMMEs dealing with waste.

- Recovery of recyclables by informal refuse collectors. These collectors move from house to house separating and picking all the recyclable material as well as other valuables. They identify whatever can be recovered and sell all items to appropriate markets so as to get a livelihood. Materials such as scrap metal, glass, paper, plastics and others are sold to waste recycling SMMEs.

- Purchase of recyclables by itinerant buyers from residents. In this instance buyers visit households to buy recyclables and other materials that may be reused. These items include materials with an established market or which can still be used for a longer period. Buyers use carts and trucks to transport these commodities.

- Waste pickers on the streets or public spaces. Waste pickers collect their recyclables from any litter found on pavements. This category of waste pickers use ordinary bags or any portable container into which to place useful items to be sold to SMME recyclers.

- Recovery at composting plants. Waste pickers collect inorganic waste that is deemed valuable and leave organic material required for composting purposes. This category of waste pickers helps to improve the quality of an organic compost by removing unwanted inorganic substances.

- Recovery at municipal open dumps. Waste pickers identify open dump areas used by residents and they settle nearby this area so that they can recover all the useful material from the open dump. They usually occupy uninhabitable land as long as they will be

closer to the dump area. They also get construction material from the dump to build their shacks.

- Salvaging of materials from dumpsters. High income households, hotels and big shops are targeted since high income earners dispose of more valuable items into the waste stream.

- Recovery at landfills. The landfill site is targeted since large volumes of waste are deposited into the landfill site. Once the waste disposal trucks offload waste pickers search and remove all the recyclables of interest before the waste is compacted.

Rogerson (2001) contends that because they lack financial resources, waste pickers are usually not willing to involve themselves in waste re-processing and the actual recycling activities. They resort to operating at the lowest level of waste collection which is waste picking (Madsen, 2006). They operate from various levels such as curbside collection, on the street pavements, from drop off centers, buy-back centers, central storage containers, off collection vehicles, from the transfer stations and from dump or landfill sites.

2.5.5 The working conditions

Local authorities disregard waste pickers in any effort to improve the working conditions of people (Rogerson, 2001) . They are stigmatized and are often repressed by authorities who have a negative, hostile attitude towards them or they are just tolerated. There is a high level of child labour in this sector. Waste pickers lack knowledge and general awareness about how to handle waste as well as hygienic ways of treating waste because they were never trained (Madsen, 2006). These conditions place waste pickers at risk of contracting infectious diseases as well as getting injured (ibid). Waste pickers work in conditions that lack shelters and are often exposed to severe heat, sun, rain, and cold weather and there are no water and ablution facilities. There is usually no clean area to prepare food safely (Madsen, 2006). Accidents and injuries in the work place are rife. Waste pickers are exposed to injury caused by sharp and dangerous objects which are part of the waste. When they are injured they do not get professional health care services because they usually treat themselves using unprofessional treatment techniques (Madsen, 2006). Madsen (2006) concludes by stating that the working conditions of waste pickers usually improve significantly when they are provided with the necessary support by authorities. Waste

pickers can be organized into a union, cooperative or an advocacy organization of any kind. The government can start organizing waste pickers at national level and then develop appropriate structures up to the community level. A proper stakeholder analysis could assist the development of inclusive, socially desirable, economically viable and environmentally sound waste management system (Medina, 2008). The working conditions of waste pickers are difficult to improve because they are regarded as self employed and there is no employer- employee relationship between them and waste traders or waste SMMEs (ibid).

2.6 LEGISLATIVE FRAMEWORK OF WASTE MANAGEMENT IN SOUTH AFRICA

Policies and legislation governing waste management in South Africa are fairly new, dating back to the latter part of the twentieth century, but issues related to environmental management generally have a long history (Kidd, 2008). Most of these early policies and legislation were exclusively concerned with the conservation of natural resources, the control and discharge of sewage, air pollution and pesticides (Kidd, 2008). For the first time in history South Africa promulgated the Environment Conservation Act in 1989 which made provision for dealing with littering and the permitting of waste disposal sites (Bosman, 2009, Kidd, 2008). This Act led to the publication of the Minimum Requirements for Waste Disposal by Landfill which focused on the procedure to be followed when applying for a landfill site permit (Bosman, 2009). From the Environment Conservation Act of 1989, South Africa progressively developed its policy framework and the enactment of legal prescripts. Most of these policies and Acts emerged after the ushering in of a democratic dispensation in 1994 and these contain most of the provisions and the principles of environmental management as agreed upon by the international community through declarations, treaties, and agreements (Kidd, 2008).

The Environmental Management Act 107 of 1998 (NEMA, sec. 1 (xi)) defines the environment as the “surroundings within which humans exist and that are made up of; the land, water and National atmosphere of the earth; micro-organisms, plant and animal life and the interrelationships among and between them; and the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being”. People are part of the environment and are central to the concerns about its sustainability (The White Paper on Environmental Management Policy for South Africa, 1998). Environmentalists believe that for the environment to be protected there must be sustainable development. The White Paper

(1998, p.14) defines sustainable development as “development which meets the needs of the present without compromising the ability of future generations to meet their own needs”. It further states that “development policies, plans, programs and activities in all sectors that do not address environmental concerns cannot claim to be sustainable” (The White Paper, 1998, p.14).

The National Environmental Management Waste Act, of 2008 is the latest legislation which comprehensively covers many aspects of waste management generally in terms of the recent trends.

Policies developed include the White Paper on Environmental Management Policy for South Africa. According to the White Paper (1998, p.24) “waste management must minimize and avoid the creation of waste at source. Government must encourage waste recycling, separation at source and safe disposal of unavoidable waste”. Another policy that was developed is The White Paper on Integrated Pollution and Waste Management for South Africa (IP & WM) (2000). The IP & WM (2000, p.10) points out that there must be a paradigm shift away from “dealing with waste only after it is generated [i.e.‘end of the pipe’] towards: pollution prevention, waste minimization, and involvement of all sectors of society in pollution and waste management”. The IP & WM (2000) recognizes that South Africa’s waste management system still focuses on waste disposal and impact control and there is a lack of emphasis on waste avoidance, minimization and use of cleaner production technology, inadequate resource recovery and recycling initiatives and a general lack of diverse waste treatment methods. The policy argues that an integrated waste management approach must be adopted and it should focus on four strategies namely waste avoidance, which means prevention and minimization; resource recovery, which entails recycling and re-use; waste treatment and waste disposal. The IP & WM (2000) seeks to deal with waste from the stage of waste generation to its final disposal.

2.7 INTEGRATED WASTE MANAGEMENT

As a result of the new legislation, South Africa adopted the new integrated waste management hierarchy as described below, Bosman (2009).

2.7.1 Waste Prevention

In 1997, South Africa generated waste which amounted to about 533 million tonnes per annum (Draft Municipal Waste Sector Plan, 2011 [later the Waste Sector Plan]). According to Prunell (as cited in the National Waste Management Strategy, 2009), there was about 24.1 million tons/annum of general waste disposed of in the landfills in 2006/7. The National Waste Management Strategy [NWMS](2009, p.14) reports that in South Africa "growth in waste volumes is projected to rise to nearly 67 million cubic metres by the year 2010 and rapid urban growth throughout the country is seriously outstripping the capacity of most cities to provide adequate waste services for their citizens". The large volumes of waste produced and the ever growing urban population tends to contaminate or pollute the environment and is a health hazard (Middleton, 2008). Waste prevention is the avoidance of the generation of waste through the use of clean technologies at source (Bosman, 2009).

2.7.2 Waste Reduction

Waste reduction involves at- source reduction of waste by developing clean technologies and the use of products that are likely to produce less waste (Williams, 2005). Waste reduction is about changing behavior to encourage waste reduction, re-use and waste separation at source to ensure that increasing consumption levels do not result in increasing waste generation (The Waste Sector Plan, 2011). The Waste Act (2008) stipulates that the State must "put in place uniform measures that seek to reduce the amount of waste that is generated". Waste reduction is in line with the Polokwane Declaration. On the 26-28 September 2001 South Africa, represented by government, the civil society and the business community held the first National Waste Summit after the establishment of a democratic government in 1994. The summit was held in Polokwane and at the end of that summit a declaration was signed by all the parties represented. The declaration commits all the parties "to reduce waste generation and disposal by 50% and 25% respectively by 2012 and develop a plan for zero waste by 2022" (National Waste Management Strategy Implementation, South Africa; recycling waste stream analysis and prioritization for

recycling, 2005). The Waste Sector Plan (2011) recognizes that there is a need for education and awareness creation initiatives to achieve waste reduction targets.

2.7.3 Resource Recovery

Resource recovery refers to the steps taken to extract energy or materials from waste (Pichtel, 2005). Letcher (1986) argues that there is no waste but useful recyclable materials which are a resource and not waste and further suggests that programs should be developed for the effective utilization of these resources that are buried in landfills. Resource recovery includes both recycling and re-use of used materials (Bosman, 2009). Recycling means using a material in a form similar to its original use e.g. newspapers may be recycled into cardboard or new newspaper (Pichtel, 2005) while re-use means using a product more than once or re-using it in another application e.g. re-using plastic supermarket carrier bags again and again until these are no longer usable (Williams, 2005).

The Waste Act (2008, sec.1) defines recycling as a "process where waste is reclaimed for further use, which process involves the separation of waste from a waste stream for further use and processing of that separated material as a product or raw material". According to Williams (2005, p.130), "recycling involves the collection, separation, clean-up and processing of waste material to produce a marketable material or product". Recycling activities have increased in most countries globally and this is due to the benefits that emanate from recycling. Recycling has the following advantages: it creates job opportunities, it reduces environmental pollution, it saves natural resources, it saves the costs of manufacturing new products from raw materials, it reduces informal scavenging at the landfill sites, it reduces the amount of waste that gets deposited into the landfill site thus saving the landfill airspace, it reduces litter, it minimizes the use of virgin materials and saves energy in producing new ones (Bagchi, 2004; NWMS, 2009; Recycling Waste Stream analysis and prioritization for recycling, 2005; Williams, 2005).

Various materials can be recycled and these include paper, glass, both ferrous and non-ferrous metals, plastics, used motor oil, putrescible material, building rubble, wood waste and yard waste (Cheremisinoff & Ferrante, 1992; Pichtel, 2005; Williams, 2005). Recyclable materials can be recovered at source, at drop off centers, at buy-back centers, at Material Recovery Facilities or at the landfill site (ibid). Williams (2005) believes that source separation of recyclables from waste

increases their value and earnings become higher. At- source recycling is preferred because recyclables at that stage are not yet contaminated (Williams, 2005). The potential of reclaiming used material from the general waste stream in South Africa is between 50% and 80% (NWMS, 2009).

2.7.4 Waste Treatment

In terms of the Waste Act (2008, sec.1), treatment means "any method, technique or process that is designed to change the physical, biological or chemical character or composition of a waste or remove, separate, concentrate or recover a hazardous or toxic component of a waste or destroy or reduce the toxicity of a waste, in order to minimize the impact of the waste on the environment prior to further use or disposal". Waste treatment involves thermal treatment processes that include incineration, pyrolysis and conversion of waste into energy (Bosman, 2009; Tchobanoglous et al., 1993). These processes are aimed at reducing the volume of waste that is land-filled and the generation of energy from waste. As a result of the thermal treatment processes waste is converted into gases and liquids which are further processed into heat energy.

The Thermal treatment methods are used to destroy hazardous, infectious and medical waste through the process of waste disposal called incineration. Incineration is the second most used method of waste disposal after land-filling (Pichtel, 2005). During incineration combustible waste is broken down to non-combustible residues such as ash, gas and water by burning at high temperatures (Bosman, 2009). These residues are then disposed of in landfills at reduced quantities of waste and the gases that are produced are released into the atmosphere (Mnyani, 2003). This causes an environmental risk in the form of air pollution (ibid). Combustible processes can lead to the production of a biogas called methane which is used to generate energy (ibid).

2.7.5 Waste Disposal

Waste disposal is the last and least preferred method of waste management in the waste management hierarchy (Williams, 2005). Waste disposal means the burial, deposit, discharge, abandoning, dumping, placing or release of any waste into, or onto, any land (Waste Act, 2008). Because of concerns with environmental pollution and public health and safety, there has been a shift away from promoting land-filling. Emphasis is now placed on waste avoidance,

minimization and reduction at source with the proviso that a smaller volume of waste will be land-filled (NWMS, 2010; Waste Act, 2008). The NWMS (2010) report states that in the 2006/7 financial year there were 24 115 402 tons of general waste deposited in landfill sites. The intention is to reduce this figure by developing recycling activities and diverting a larger volume of waste away from landfills. Waste that is discharged in landfill sites is dangerous to both humans and the environment. When biological processes take place biodegradable waste degrades, and neutralizes to form inert waste. During this process, methane and carbon dioxide are produced and greenhouse gases are formed. It is these greenhouse gases which are dangerous and which should be avoided (Williams, 2005). This danger posed by these gases can only be avoided by recycling more waste and diverting it away from the landfill.

2.8 CONCLUSION

The focus of this chapter is a literature review which basically covers a number of issues pertaining to waste management. Firstly, a historical overview of waste generation is presented progressively from the earliest times during which waste posed no significant challenge to both humans and the environment up to the time when historical, social, economic and technological advancements ushered in an era that necessitated advanced means of waste management and the development of standards based on global norms. Although the study emanates from problems encountered in South Africa, it became necessary to give a global picture to highlight international trends so as to understand how other countries grapple with the issue of waste management. Only two examples, namely Europe and the USA and how these countries approached the problem of waste, were presented.

The issue of waste management and climate change is currently a global concern. All nations debate the implications of waste on climate change and the interconnectedness of sustainable development and environmental protection. The relationship between climate change and recycling was highlighted. The development of a legislative framework relevant to South Africa and how the South African approach was directly influenced by the international trends was unpacked. The new paradigm shift towards a more integrated waste management system was discussed with an emphasis on the waste hierarchy starting with waste prevention, waste reduction, resource recovery, waste treatment and as a last resort waste disposal. This means that the new global approach to waste management is waste minimization with the dispose of waste

through landfilling the least favourable option. Waste pickers are a critical stakeholder in waste management and there was a substantial discussion on those who collect waste, who they are, what they do and how they do it. Their role need be acknowledged so that they are part of any solution crafted to preserve the environment so that future generations may also find it habitable.

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CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter outlines the research methodology followed in the study. It is a step by step account of the processes involved. Firstly the research question is presented together with the aims and objectives of the study. Secondly the research process is outlined. The most appropriate research design for this study is highlighted and a discussion ensues of the research population, sampling method and methods of data collection. The data analysis method used is also unpacked. Thirdly, strategies to ensure trustworthiness of the research findings are presented. Lastly this chapter covers ethical aspects attended to in the implementation of the study.

3.2 RESEARCH QUESTION

What are the experiences and challenges faced by waste pickers and/or waste recycling SMMEs involved in municipal waste recycling activities?

3.3 AIMS AND OBJECTIVES

3.3.1 Primary aim

To explore the experiences and challenges faced by waste pickers and SMMEs involved in municipal waste recycling activities.

3.3.2 Secondary objectives

- To explore the experiences and challenges encountered by waste pickers and SMMEs involved in waste recycling activities.
- To explore reasons why a large volume of municipal waste is disposed of and/or buried in the landfill site.
- To explore reasons why minimal business opportunities are created out of municipal waste.

- To determine whether conditions in the municipal waste management system favour the development of business opportunities around waste management.
- To determine the volume of waste that is diverted from the landfill site.
- To investigate the types of recyclables that are harvested from waste generated in GKM.
- To recommend policy proposals that would facilitate the use of municipal waste as a resource.

3.4 RESEARCH METHOD

In this study qualitative research methodology was used. The major assumption in qualitative studies is that there is no single reality and each narrative is knowledge on its own (van Rooyen & Engelbrecht, 1995). According to Tutty, Rothery & Grinnell (1996, p.52), a qualitative method is used when one seeks to "gain an understanding of the perspective of the person being interviewed. It is relevant when the researcher wishes to explore experiences, behaviours, thoughts, and feelings". It gathers and analyses textual data. A qualitative study is used when the researcher has no intention to quantify findings and feels words are rich in meaning. According to Sim and Wright (2000, p.27) a design "specifies the logical structure of a research project and the plan that will be followed in its execution". As a plan for action a research design serves as a guide to all the steps and procedures that are taken from the data collection to the data analysis stage of the research process. The selection of a research design depends on the nature of the problem being investigated and the purpose of the study (Royse, 2004).

This study used a phenomenological design, meaning that the approach sought to "understand and interpret the meaning that study participants give to their everyday lives" (De Vos & Fouche as cited in De Vos, Strydom, Fouche, Poggenpoel, Schurink & Schurink, 1998, p.80). Through a qualitative study, participants described social conditions and processes that made them give certain meanings to particular events and behaviours (Avis, 2005). Participants were able to express their feelings and their thoughts in their own words and terms (Avis, 2005). This research was aimed at acquiring knowledge in order to understand and gain a meaningful insight into waste recycling and SMME development in Kokstad. This study was exploratory in nature since there was not much knowledge with regard to the practice of waste recycling and SMME

development in this country. Exploratory studies are useful when very little information is known about the topic of study (Royse, 2004). Sim and Wright (2000, p.45) view exploratory studies as significant in shedding light on a topic that "has not yet been described in detail and is likely to be poorly understood at the level of theoretical explanation". Exploratory research is preferred for studies that seek to describe and categorize data acquired instead of quantifying it (ibid). The subject of study must be known only in general and tentative terms. These are studies that tend to be holistic in the sense that all aspects of the phenomenon must be explored. Sim and Wright (2000) further state that exploratory studies are also helpful when the aim of the study is not to generalize beyond the sample that was studied.

3.5 SAMPLING PROCEDURE

This study was based at the Greater Kokstad Municipality, KwaZulu Natal Province. The population of interest was waste pickers involved in small scale recycling of the waste material generated within GKM. A number of waste pickers worked for a small company called E.G. Scrap n Steel which is involved in recycling activities. This company has about twenty waste pickers who pick up recyclables from the landfill site and sell it to E.G Scrap n Steel. There are another three workers who work for Voltac Transport and Scrap metal and two other workers who are employed by Giani Scrap metal. Both companies are also involved in recycling activities.

Since this is a qualitative study, non-probability sampling was used and a purposive sampling method was also applied. Non-probability sampling means that the chances of selecting a certain individual to be part of the sample are not known to the researcher (Strydom, 2005). A purposive sampling method was appropriate given the population to be studied and the purpose of this research (Strydom & Delport, 2005). In purposive sampling, participants are selected because they demonstrate certain features that are of interest to the goals of the study (ibid). Purposive sampling is based on the judgement of the researcher since it is the researcher who is best placed to understand the purpose of the research and the sample that is likely to give the information required (Strydom, 2005). The criteria used were (1) representativeness which means that the sample selected possessed the ability to give important information regarding the focus of the study and (2) size of the sample which refers to the fact that the size of the sample was either not too small or too big to fit the research design selected (Sim & Wright, 2000). The population of

interest and the sample studied were the same. These participants provided quality information because they were directly involved on a daily basis in recycling activities. Workers of recycling companies as well as their employers formed the sample.

3.6 DATA COLLECTION

Interviews are the most commonly used method of data collection in qualitative research designs (Greef, 2005; Taylor, 2005). Qualitative research interviews are a "conversation with a purpose and a two-way process where the researcher and the participant engage in a dialogue to explore the topic at hand" (Taylor, 2005, p.39). Taylor (2005, p.39), further states that interviews help to "capture, in the participants' own words, their thoughts, perceptions, feelings and experiences". It is the interviews that give participants an opportunity to describe their experiences in detail and be able to express the meanings they attach to their words.

The researcher gathered information by means of both focus groups and semi-structured one-to-one interviews or guided interviews. Kitzinger (2005) believes that focus groups and interviews can be combined to obtain diverse views on a topic. According to Krueger (as cited in Greef, 2005, p.306) a focus group is "a carefully planned discussion designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment". Focus groups promote interaction between the researcher and participants. They are designed to enable the researcher to learn from the participants and access their feelings, thoughts and experiences on a selected research topic.

Focus groups were selected because of the following strengths: they facilitate the collection of information from illiterate participants, they are cheaper as it is possible to collect data from many people in a single occasion, they promote interaction between the researcher and participants and allow the researcher to probe for more detailed information, and they promote self-disclosure and yield detailed information regarding the knowledge, ideas, feelings, thoughts, and experiences that participants possess. A permissive group discussion environment allows participants to divulge emotions and experiences that would not be disclosed in individual interviews and, in addition, the group experience promotes anonymity. Other strengths are that participants can build onto others' views thereby enriching the data collected, focus groups can be used together with other research methods and focus groups provide valuable insights into

conducting complicated and more focused investigations (Kitzinger, 2005; Krueger, 1994; Marshall & Rossman, 1995).

The second instrument that was used was semi-structured, one-to-one interviews or guided interviews. According to May (as cited in Greef, 2005, p.298) semi-structured interviews are defined as "those organized around areas of particular interest, while still allowing considerable flexibility in scope and depth". A semi-structured, one-to-one interview was selected because of the following strengths: this method has an interview guide that permits comprehensive and comparable data gathering while ensuring that all the main issues are covered, it is good in obtaining data on non-verbal behavior and communication, it makes use of a face-to-face encounter with participants which is more person-centered, it is flexible allowing for follow-ups and clarifications and for the sequence of questions to be changed depending on the flow of an interview, it gathers in-depth information through probing, it allows for the gathering of complex, comprehensive, sensitive and personal information (Greef, 2005; Tutty et al., 1996).

3.6.1 Focus group interviews

There were twenty seven participants who participated in the focus group discussions. These participants included seventeen workers belonging to E.G. Scrap n Steel, eight workers who were attached to Voltac and two workers from Giani's scrap. The researcher formed three focus groups, the first focus group had ten participants, the second group had nine participants and the last group had eight participants. The researcher convened one focus group session with each group. As a result of the flow of the discussion all questions that formed the research guide were exhausted in only one session. Each session lasted for two hours. The Director of E.G. Scrap n Steel and the directors/owners of the small SMMEs involved in recycling activities were used as gatekeepers to facilitate granting of the permission to conduct research with their workers and they also facilitated the convening of focus group sessions (Tutty et al., 1996).

The researcher organized one meeting with all participants in which all processes and procedures were explained. These included the subject of the research, who would form part of the focus groups and their roles, the venue, how focus groups would be structured, the number of sessions to be conducted. The researcher used this meeting to ask for permission to tape-record the interviews.

The focus group interviews were conducted in Xhosa. The question themes were distributed to participants prior to the group sessions so as to solicit vital information. Participants were given letters to sign since they agreed to participate voluntarily in the study (this letter is appendix "D"). The letter also stated that they were free to withdraw at any subsequent stage of the study. A suitable venue was discussed with participants and they agreed to meet at the Shayamoya Community Hall which is within walking distance from the Landfill site.

The researcher facilitated and guided the discussions. The researcher asked one of his colleagues to assist as the assistant facilitator. The assistant facilitator was responsible for taking detailed notes on the interview process to supplement a tape-recorder which was used to record all the discussions. Detailed notes were taken because it was felt that the tape recorder might fail to record clearly or could just produce poor quality tapes (Tutty et al., 1996). The assistant facilitator was also used to assist in operating the tape-recorder, attend to unexpected interruptions and assist with logistical arrangements (Greef, 2005). To allow him to concentrate on the interview process, the researcher took notes sparingly especially those regarding non-verbal cues of participants as well as the researcher's feelings, interests, reactions and thoughts. The researcher is an experienced social worker and social work manager and used his skills to facilitate the group process. The focus group interviews were guided by a number of question themes. This helped the researcher to ensure that all the main issues were covered.

3.6.2 Semi-structured one-to-one interview

Individuals or SMME directors who were involved in small scale recycling activities were recruited to participate as individuals in semi-structured one-to-one interviews. There were three of these small companies that were known to the researcher. The directors of these companies agreed in writing that their companies would participate in this study. The researcher communicated with the directors of these companies individually. The details about the nature of the study, the procedure to be followed before, during and after the interviews, the venue, what would be expected of them, how long the interview would be were given to each participant in writing. Each participant was requested to sign a letter of consent stating that his/her participation was voluntary and that he/she was at liberty to withdraw at any stage of the research process without being penalized for that. The researcher asked for permission to tape-record the interviews and participants were requested to give written permission. Two weeks before the

interview, the researcher contacted participants to confirm the date, venue and time for the interview. The same question-themes used for focus groups were also used for the semi-structured interviews.

Although the directors of all the three SMMEs had given consent to voluntarily participate in the study, only two SMMEs actually participated. The third SMME, Gianni's Scrap Metal did not participate. The director kept on postponing the interview until the process of data collection was completed. The reason why he did not show any interest in the interview is not known but it is assumed he lost interest because he felt this interview would not benefit him.

3.7 DATA ANALYSIS

Data analysis involved reducing the volume of raw information, sifting it and identifying patterns and trends that revealed the true meaning of what was contained in the data (De Vos, 2005). The researcher used Tesch's method of qualitative data analysis as described in Cresswell (1994). Both the focus group interviews and the semi-structured interviews were transcribed. These transcripts incorporated information from the tapes, handwritten notes taken by the assistant facilitator and personal notes written by the researcher. The steps identified by Tesch and which were followed involved the following: the researcher read all the transcripts carefully so as to get a sense of what was contained in the transcripts; the most interesting transcript was selected and read again; the researcher's ideas and thoughts were written in the margin; this process was repeated with all the scripts, writing down all the thoughts; topics identified were clustered into 'themes', 'sub-themes' and 'categories'; codes were allocated to all the transcripts; the most descriptive wording for the themes, sub-themes, and categories were identified; the appropriate abbreviations for 'themes' 'sub-themes' and 'categories' were determined; the data were grouped together in each category; the data were checked to see if re-coding was needed and the process of analysis was then finalized.

3.8 LITERATURE CONTROL

This is a vital step in the qualitative research process. Guided by the themes, sub-themes and categories that were identified, the researcher conducted a literature control. This means that the researcher studied what other writers and researchers have said about their findings. This step assisted in comparing and contrasting the findings with other credible literature.

3.9 TRUSTWORTHINESS

In qualitative research it is important to develop strategies to ensure the trustworthiness of research findings. In this study, the researcher was guided by Guba's model of ensuring trustworthiness as described in Krefting (1990); Marshall & Rossman (1995) and De Vos (2005). This model is based on four criteria namely truth value, applicability, consistency and neutrality.

3.9.1 Truth value

The strategy that was used to ensure truth value was credibility which was achieved in the following ways;

- The interviews were tape-recorded to capture verbatim accounts by participants.
- Two different methods of data collection were used i.e. focus groups and semi-structured one-to-one interviews.

3.9.2 Applicability

This criterion was ensured by the extent to which the findings could be transferred to other contexts and situations. The researcher provided detailed background information about the setting, participants and the context of research for others to determine the transferability of the findings to other groups and contexts. The onus to determine transferability of findings lies with those who want to transfer the findings.

3.9.3 Consistency

Dependability is the strategy used to ensure consistency in qualitative research and the measures used include;

- A detailed description of the research methodology, including the question-themes, was provided.
- A code-recode procedure was used through which the researcher re-checked the accuracy of his coding.

3.9.4 Neutrality

Neutrality is ensured through the strategy of confirmability which is established in the following ways;

- The researcher's report quotes verbatim narrations to substantiate statements made and to provide an audit trail or chain of evidence for interpretations.

3.10 LIMITATIONS OF THE RESEARCH DESIGN AND METHODOLOGY

3.10.1 Member domination

Focus groups have the potential of being dominated by one or a few participants and this means that these members dominate and impose their views, thoughts and feelings on other participants (Green & Thorogood, 2009). In the focus groups there were participants who dominated discussions. Other participants tended to wait until the so called "spokesperson" has spoken first. The researcher could detect that other participants were shy to speak first and they were unwilling to raise contradictory views. The researcher used group facilitation skills to create equal chances for all group members and to ensure that all participants made their contributions to the discussion. The researcher probed group members to share their personal experiences on topics discussed.

3.10.2 Generalizability and transferability

In qualitative studies generalizability or transferability depends on the individual who is interested in transferring the findings to other settings (Krefting, 1991). The objectives of this study were not to generalize research findings and it is a limitation to those who would like to transfer the findings of this study beyond the sample studied. It is, however, the individual who must decide, after reading the details of the study, whether he/she feels the results do, or can, apply to his/her situation (ibid).

3.10.3 Confidentiality/anonymity

Focus groups are not suitable for discussing sensitive and controversial issues (Greef, 2005). Group members cannot remain anonymous. Although group members were encouraged or cautioned to treat every issue discussed as confidential, the researcher could not guarantee that

members would not divulge information outside the group. The issue of confidentiality/anonymity became a limitation because focus group members did not want to disclose how much money they get on the average per day or per load sold out or per month. They kept on stating that it depends on circumstances even though it was clarified that approximations or just averages were asked. This might have been caused by the fact that participants were not anonymous in a group situation.

3.10.4 Production of useless information

In qualitative research participants sometimes raise issues that are not relevant to the topic. Focus group participants' comments sometimes became irrelevant, giving details of what was not the topic for discussion. Sometimes participants repeated the same point. Although the researcher used his interviewing skills to guide the discussions so that there was less irrelevance or that no useless information was gathered, it was difficult to eliminate irrelevant information completely.

3.10.5 Interviewee effect

Sometimes research participants tend to give responses or provide information that they believe is expected of them. This issue came out when waste recycling SMMEs were interviewed. In their statements they tried not to criticize or blame the municipality for anything. Even in instances where they could have criticized the municipality, they did not, like in the lack of support programs from the municipality to support them. At the beginning of the interviews the researcher stressed that there was no right or wrong answers and that all views and opinions were acceptable but it seems as if they wanted to maintain good relationships with the local municipality.

3.11 ETHICAL CONSIDERATION

Ethical issues have to be addressed in any research study. The researcher dealt with ethical issues in the following manner;

3.11.1 Informed consent

Participation in any study should be voluntary. Participants were informed through the participant information sheet (appendix "B" of this report) that they had a right to withdraw from

participation at any stage of the research process. They were asked to sign a letter of consent and voluntary participation (which is appendix “D” of the report) and were also informed about their rights. The original letter was retained by the participant and a copy was kept by the researcher.

3.11.2 Violation of privacy or confidentiality

Confidentiality in this study was upheld but since focus groups were held with a number of participants, the researcher informed participants about the significance of respecting individual privacy and confidentiality but did not have any guarantee that these would not be violated.

3.11.3 Actions and competence of researchers

Researchers have an ethical obligation to ensure that they are competent and sufficiently skilled to conduct research (Strydom, 2005). The researcher is committed to good ethical standards. He completed an advanced research methodology module that enabled him to plan and undertake this research study.

3.11.4 Release or publication of the findings

The researcher is committed to compiling an accurate research report and never to manipulate the report. A brief summary of the report will be presented to all participants and a copy of the research report will be donated to the Kokstad public library. As custodians of this research study, Wits University will receive a copy of the report to be placed in the Wits library. A journal article will be compiled for publication in an accredited professional journal.

3.11.5 Debriefing of participants

The researcher will convene a meeting with focus group participants and another meeting with participants in the semi-structured one-to-one interviews. These meetings will be held after the completion of the study to clarify any misconceptions that might have been created in the process of the study. It is in these meetings that a brief summary of the research report will be presented.

3.11.6 Management of information

The only people who will have access to the research information are the researcher, academic supervisor and the independent coder. The tapes and notes will be destroyed after the study is completed and the research report will become a public document but will not contain any information identifying participants and their areas of residence. The use or non-use of the real names of SMMEs that will participate in this study will depend on their consent which has not yet been granted. Greater Kokstad Municipality as the setting of the study will not be concealed.

3.12 CONCLUSION

This chapter focuses on the research methodology used in this study. It covers the research question, aims and objectives of the study as well as the research method. The research methodology used was qualitative because of an interest in exploring experiences, behaviours, thoughts and feelings of both recycling SMMEs and waste pickers. A non-probability sampling procedure together with a purposive sampling method was used.

There were two data collection methods used namely the focus groups and semi structured, one-on-one interviews. Three focus groups comprising waste pickers were held and semi structured one-on-one interviews with two directors of recycling SMMEs. Data analysis followed Tesch's method of qualitative data analysis which involved the identification of themes, sub-themes and categories. The identified themes, sub-themes and categories were discussed in line with relevant literature studies. In qualitative studies, it is essential that researchers should develop strategies to ensure the trustworthiness of research findings. Trustworthiness was ensured by using criteria such as truth value, applicability, consistency and neutrality. Limitations of the research design and methodology relevant to this study were identified and the impact thereof on the study. Lastly some ethical issues related to the study were outlined and the manner in which they were handled.

CHAPTER 4

PRESENTATION AND DISCUSSION OF FINDINGS

4.1 INTRODUCTION

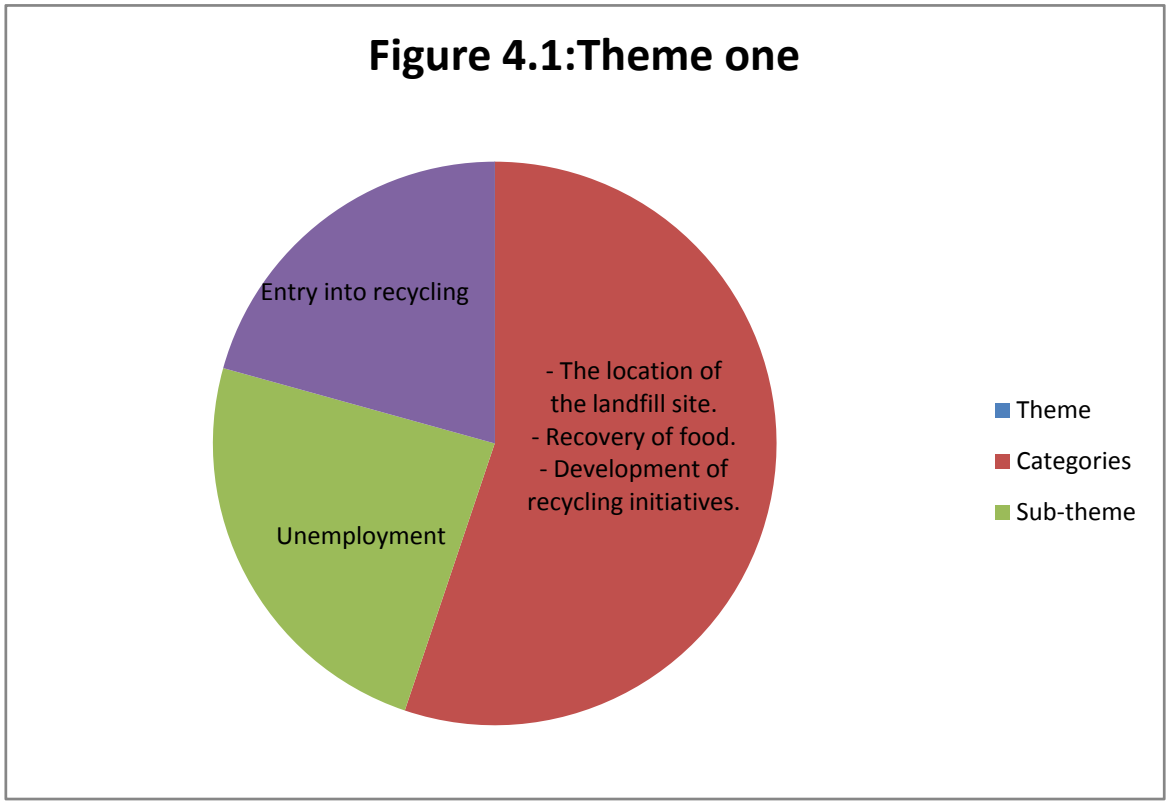
This chapter covers the presentation as well as the discussion of findings. The qualitative data were analyzed using Tesch's framework as described in Creswell (1994). There are seven themes that have been identified namely: entry into recycling; materials collected; general reflections on recycling; reduction of waste dumped at the landfill site; challenges faced by recyclers; possible solutions; perception by the community.

Each of these themes has been sub-divided into sub-themes and sub-themes were further sub-divided into categories. The discussion of themes, sub-themes and categories includes verbatim quotations from the interviewees to substantiate and give credibility to statements and claims made. Verbatim quotations that are in Xhosa will be translated into English to assist English speaking readers to understand the content.

4.2 DISCUSSION OF THEMES, SUB-THEMES AND CATEGORIES.

All the seven themes, their sub-themes and categories will now be presented sequentially. The first theme, its sub-theme and categories will be presented first and before each theme is discussed in detail there will be diagrams or charts depicting the theme, its sub-theme/s and categories.

4.2.1 Theme one: Entry into recycling



Participants have expressed their entry into recycling in a number of ways with a variety of overtones. This theme also relates to the experiences of both waste pickers and recycling SMMEs and their conditions of livelihood before deciding to join the recycling industry. Under this theme the discussion will focus on unemployment as a primary sub-theme.

4.2.1.1 Unemployment

Both the directors of SMMEs and their employees highlighted that unemployment played a major role in deciding to enter recycling services. As was presented previously, Greater Kokstad municipality has a high rate of unemployment which is 30.82% (Stats, 2001 as cited in IDP 2010/11) and 34.94% (Community Survey, 2007 as cited in IDP 2010/11) and this contributed to the introduction of recycling as an income generating activity. The Draft Municipal Waste Sector Plan (2011) states that since waste collection and recycling are labour intensive, they tend to

contribute towards job creation. The recycling industry is becoming more and more popular especially among the unemployed. Recycling is responsible for creating employment opportunities for both the SMMEs who buy recyclables as well as the waste collectors (The Waste Sector Plan, 2011). Since the introduction of recycling as an employment opportunity, many people have made livings for themselves and their families and provided jobs and useful services for others (Kao et al, 2002). Unemployment as a sub-theme is further divided into three broad categories. These categories are (1) The location of the landfill site (2) Scavenging and (3) Development of recycling initiatives. The three categories will be discussed individually and there will be verbatim quotations from research participants to substantiate the claims made.

1. The location of the landfill site.

From the very onset it has to be noted that most of the research participants or the employees (although the relevance or otherwise of this term when applied to some of the research participants will be discussed later on) of SMMEs undertaking recycling activities reside in an informal settlement called Bhambai which is located about 600 meters from the landfill site. This proximity to the landfill site makes it both convenient and accessible to work in. These workers can just walk to and from the landfill site with ease. They do not have to depend on public transport to access the landfill site. They walk to and from the landfill site as they wish. They go to work when children have already left for school and they know that children return from school at a certain time of the day when they go back home to open the locked rooms for the children. This was observed by the researcher during the focus group discussions. Focus groups used to commence at 13H00 to 15H00. Just before 15H00 most participants would start to be disruptive, whispering to each other, checking their time and showing signs of lack of concentration. When the researcher asked what the problem was, one participant said, "*enye into sekufike ixesha labantwana, abantwana bayabuya ngoku esikolweni, and ezindlini sitshixile, sidinga ukuya kubavulela"[The issue is that time has come for us to attend to our children, they are on their way back from school, and our houses are locked, we need to go and open for them]*

The location of the landfill site is also very convenient to waste collectors. It is convenient in the sense that it is near their households. One participant expressed her satisfaction with its location in the following words, *"Iyindawo e right ngoba siyakwazi noba sithi mhlawumbi emini siyobheka abantwana ukuthi bahleli kanjani siphinde sibuyele emsebenzini ngokuba*

ikufutshane."[It is a good place to work in, because sometimes we do go back home during the day to supervise children and thereafter we return back to work because the place is nearer our households.]

The proximity of the landfill site to the residential areas has been condemned by most sectors of the community, the business, the Provincial Department of Agriculture, Rural Development and Environmental Affairs and NGOs but the Bhambai community has not expressly condemned it because it is convenient for them.

2. Recovery of food.

Most of the research participants acknowledged the fact that they started working at the landfill site solely for recovery of food dumped in the landfill site. All of the participants reported that they were unemployed when they started at the landfill site. They have been staying at home for years without any employment opportunities. One of the research participants confirmed that they started at the landfill site as people who were in search of food. She remarks, "*Ngelo xesha kwakunzima sichola izinto ezityiwayo singasebenzi kungekho msebenzi esiwufumanayo."[When we started with recycling it was very difficult, we were picking up food from the landfill site, we were unemployed, we could not get any jobs]*

Another participant states *"ngelo xesha bekusadliwa ke sisidla phaya, hayi ngoku sesisiya ngoku sebenza, besisidla phaya tata. Sahamba sachola le nto yamasenti". [During that time we used to eat from the landfill site. Yes, we used to eat from the landfill site, not now that we only recover materials to sell"].* Searching for food according to the research participants was possible previously because the landfill site was not fenced and therefore not secured. There were no security guards. People used to come in and out as they wished. There was no control and that is why people got the opportunity to enter the landfill site and recover dumped food. Authorities, through legal enforcement, strive to combat this unlawful practice of recovering food from the landfill site. No government allows this activity and that is why landfill sites have been fenced and security guards employed to strengthen security provision (Draft Waste Sector Plan, 2011). Legislation has been developed to ensure that health risks through the eating of stale food have been minimized. What is commendable about these participants is that they have reportedly

ceased to recover food from the landfill site and are now involved in income generating activities in the landfill site.

3. Development of recycling activities

As has been mentioned previously, current waste collectors who are research participants were unemployed at the time recycling activities commenced. This is also true of the directors of SMMEs who were interviewed who were both unemployed when they started recycling. One waste recycling SMME remarked *"I had a spine operation and when I recovered I could not do my work anymore. So I sat down and thought about it, how do I get to live on."* This is a confirmation that indeed he was not employed when he started recycling. Another SMME stated "*I had a van, I was unemployed and just at home doing nothing and that is how I thought of doing it."*

The story of the research participants who were unemployed has just been aptly documented above and because of unemployment some participants were engaged in waste picking. How did they become involved in recycling? Their experiences regarding the small beginning that changed their lives vary and each participant has something different to tell. One participant contends that "*ndandifesa phaya ngase clinic, kwafika lo sisi efuna abantu. Waye wasithola ke sababini abanye bangathandi." [I was one of the job seekers near the clinic, on a certain day a lady came looking for job seekers. She managed to get only two of us and others refused]*

The account of one participant states *"lo msebenzi ndaqala ukuwubona apha e Shayamoya abantu bechola iintsimbi, nam ndaqalisa ke. Nam ndazichola iintsimbi ndababuza ukuba ingaba zithengiswa phi, bandibonisa. Kwacaca ukuba ke ngoku iintsimbi zinqabile apha e Shayamoya, ndazama ukuya apha e folly (landfill site) ukwenzela ukuba ndiye kuchola khona iintsimbi" [I first saw this kind of a job in Shayamoya (low cost residential area in Kokstad) where people were collecting steel, I also joined to collect steel. I asked them where they were selling this steel to, they showed me. After a while steel became exhausted in Shayamoya, and I went to the landfill site to collect steel there, and that is why I am still there].*

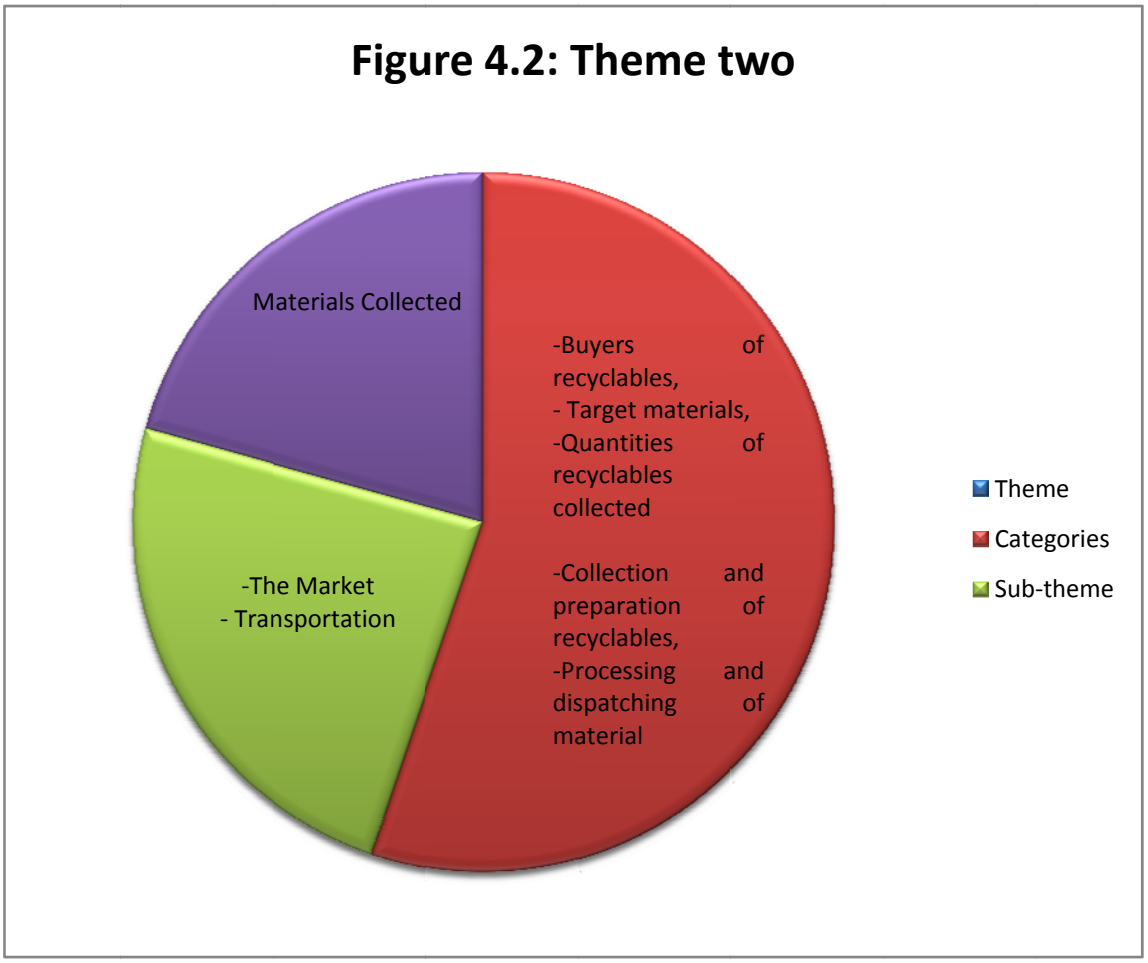
One of the participants comments "*Ndakhutshwa yinto endlwini. Kwacaca ukuba ngeke ndixakekile, ndaphuma ndahamba ndeva ukuba kuthiwa kukhona umlungu ophaya, abantu abasebenza kuye. Ndahamba ndaya nyani. Ndafika ndabopha amakhalibhodi umlungu*

engekafiki. Wafika ndaya kuye ke wafika wandiqasha ndaqalisa ndasebenza" [I was forced by severe bad living conditions in the house, and we were suffering from hunger, I went out. I heard that there are chances of employment at the landfill site. I was informed that there is an SMME who employs people. Indeed I went there. When I arrived I started to collect cardboards and the SMME was not yet there. When he arrived I went to him and he employed me. I then started to work formally for him].

What needs to be highlighted in this discussion is the fact that although the unemployment rate is high and job opportunities are limited, it is relatively simple and easy to get a job as a waste collector. The stories that have been narrated by participants indicate that job opportunities are readily available in the recycling sector. One participant states *"Ndaya phaya kwa SMME emveni kokuba ndive ngabantu ukuba uyavuma akanangxaki wafika wandithatha." [I went to the SMME's house after I was informed that he does employ people and he indeed employed me.]*

Although waste pickers refer to this as employment, actually this is not formal employment. Waste pickers in the landfill site are not employed by waste recycling SMMEs. They pick up recyclables and sell these to SMMEs. There is an informal understanding that certain waste pickers collect and sell to a particular SMME. There is nothing binding them to collect and sell to a particular SMME. In terms of the local arrangement with the GKM, waste recycling SMMEs need to acknowledge waste pickers in the landfill site and give them identification cards so that the municipality can be in a position to identify waste pickers.

4.2.2 Theme two: Materials collected



The second theme that was identified relates to materials collected or recyclables collected. It is a subject of interest as participants began to mention exactly what it is that they collect. This theme addresses a number of the objectives of this study namely (1) The experiences and challenges faced by waste pickers and recycling SMMEs (2) Reasons why a large volume of municipal waste is disposed of in the landfill site (3) Reasons why minimal business opportunities are created out of municipal waste (4) The volume of waste that is diverted from the landfill site and lastly (5) The types of recyclables collected from the waste stream. This theme is sub-divided into two sub-themes namely (1) The market and (2) Transportation. Each of these sub-themes is discussed separately.

4.2.2.1 The market

The market in the business of recycling is the same as any other business market. It changes and fluctuates with the changing environment and is regulated by trade patterns. The market as a sub-theme is also sub-divided into three categories which are (1) Buyers of recyclables (2) Target materials and (3) Quantities of recyclables collected. Each of these categories will be discussed individually.

1.Buyers of recyclables.

This category is discussed in relation to the objective of the study which focuses on the types of recyclables collected. It is the buyers of recyclables that created the market that was non-existent in this sector. Probably it is the social, economic and environmental factors that contributed to the market that has hitherto created job opportunities for people that would be regarded as having no income whatsoever were it not for the nascent and thriving recycling business. Those business individuals who displayed interest in various recyclable items and therefore introduced this business in Kokstad might have seen it operating elsewhere and decided to introduce it here. The buyers of recyclables make up a chain. The chain begins with the waste picker who collects and sells to the local SMME. The local SMME sorts, processes and transports the material to another buyer who is based in Durban in this case. The buyer in Durban also sells to his/her buyer until the product reaches the company that recycles. All these people in the chain are buyers. According to Machado (1999) these people are the target market. Factors that are critical in the target market are geographical area, demographics, lifestyle and consumer behavior (ibid). Marketing, according to Machado (1999), involves the following activities: locating the customer, transporting, storage, sorting, grading, financing, risk taking and selling. Pichtel (2005) contends that recycling activities fail most of the time because of lack of established markets. Bagchi (2004) believes that it is a difficult task to establish a market in recycling. According to Cheremisinoff and Ferrante (1992) it is absolutely critical to establish markets fairly early in the recycling business and an understanding of the specification of the consumer is important. This market started small and informally. One participant recalls that *"Ndaqala ngamaplastic mna, ndicotshela omnye umlungu amaplastic… esakhela abantwana oopopayi, nezinto ezingathi ngamahashe. Ndaqala apho ke ukungena kwade kwatshintshana izinto ke, abantu befuna izinto, bafike sikhona sibacotshele, kufike abamabhodlela, abentsimbi, yonke nje*

into ekhona. So sineminyaka sikhona apha. Kwehluka nje iinkampani ngeenkampani, batsho ukuba bafuna into ethile, sixhumane nabo sisebenzisana nabo, until nangoku ke."[I started with plastics where I was collecting for another businessman who was doing craft and craftwork. As time went on the business environment kept on changing. People who sell these recyclables came requiring various items and we were available to collect for them. Those who wanted bottles, steel, etc came here. We have a number of years doing this job but with different companies. They would come here with specific needs of specific items, we would communicate with them and provide accordingly until today.]

This extract conveys a lot of meaning about the dynamics and all the intricacies involved in the recycling business, particularly in Kokstad. It captures the manner in which the business is conducted from the point of view of the collectors, market, the sellers, the recyclables as well as the networks and communication that are part of any business transaction. First it was individuals who were business minded and who decided to come and exploit these valuables which were not regarded as valuable resources worthy of being exploited for business purposes. It developed to a stage where small companies were established to trade in waste recyclables. The two companies that were interviewed are both registered as Close Corporations (CCs). The CC is one of the main legal types of business that an entrepreneur can opt for in terms of business registration in South Africa (Sacks, 2001). Close Corporations are registered in terms of the Close Corporations Act of 1984 (ibid).

Buyers of waste recyclables select which material they require and this is solely determined by the market. There are various waste recyclable items available at the Kokstad landfill site but not all those items are collected. Both recyclers sell their steel products to RMB trading as AfroIndia and Industrial scrap metal based in Durban. Paper products are supplied to Mondi in Durban.

The market determines recyclable materials that are collected, their quantities, to whom they are sold and at what price. These are the factors that ultimately dictate and guide the direction of business.

2. Target materials

This category is also discussed in line with the objective of this study which is related to the types of recyclables collected. Most of the waste that is dumped in the landfill site is recyclable

but in Kokstad not many items are collected for recycling. There are a number of factors that need be considered before certain materials are targeted for recycling. These factors are the demand for recyclables, exact specification of the material required, how recyclables compete with virgin products, what the incentives and disincentives are that are associated with the use of products made with a recycled material and what the alternative uses of the recycled product are (Rhyner et al as cited in Pichtel 2005). As mentioned above, certain recyclable items are prioritized over others. This is primarily dictated by the market, the market forces and market fluctuation. For example, plastic is classified into seven categories and these categories are Polyethylene Terephthalate commonly known as (PET); High Density Polyethylene (HDPE); Low Density Polyethylene (LDPE); Polyvinyl Chloride (PVC); Polypropylene (PP); Polystyrene (PS); and other mostly mixed types which are usually not recyclable (Bagchi, 2004). Of all the seven categories, the plastic that is usually recyclable is PET, HDPE, and PVC. Plastic which is like a grocery bag is not targeted for recycling at all. It has no value in the market. One SMME said *"Some companies want this plastic loose, they do not want to bale it and to load a truck full of plastic that is not baled, there is no weight and the price is low and you lose."* He further stated that *"I used to do it and they did not pay, they rejected it, they told me that they do not want it.*" Unfortunately this is the kind of plastic that is problematic in Kokstad. It is easily blown away by wind and you find it hanging over the fence. Even in the Kokstad landfill site the plastic is hanging over the fence. It is unsightly and not manageable.

Even though the collectors target only very few items the recyclers target a number of the other items available in the site. There is a disparity between what is needed by the market and what actually gets collected especially at the landfill site. Recyclable materials found in the Kokstad landfill site are, inter alia, cardboard, two liter plastic bottles, steel, tins, aluminium, white paper, zinc, copper, brass. In spite of the many items needed by recyclers the waste pickers at the Kokstad landfill site collect one, two or three items at the most. There are very few who collect more than three items. When asked why they only focus on a few items many waste pickers mentioned that they are overwhelmed and overloaded by these items to such an extent that they do not cope. One participant stated that *"Ndichola amakhalibhodi nezigubhu, then abe sele efika u SMME ezithatha. Yena u SMME akafuni amakhalibhodi nezigubhu kuphela. Ufuna amakhalibhodi, izigubhu, amaplastics, amatina neebhotile. Qha ke ngoku ngenxa yamandla asingeke sikwazi ukusebenza izinto ezintlanu uwedwa. Siye sikhethe ezizinto zimbini kuphela,*

ezinye ke sibone ukuba ngeke sikwazi ukufikelela kuzo."[I only collect cardboards and two liter plastic bottles, then the SMME comes to fetch them. He does not only require cardboards and two liter plastic bottles. He requires cardboards, two liter plastic bottles, plastics, tins, and bottles. Because of work overload one cannot collect all these items. We just select the only two items, the others we cannot do.]

One SMME mentioned a list of items he recycles, he said *"I recycle cardboards, newspapers, magazines, white paper, clear plastic bottles, scrap metal, glass, copper, stainless steel and aluminium."* All these items are recyclable elsewhere but it appears as if he accepts whatever he can get from the pickers. Pichtel (2005) states that there is price volatility in the market regarding recycled products and that the prices follow the demand for the product concerned. This factor may be responsible for the selective nature of waste pickers where it was discovered that they only focus on a few recyclables instead of on a wide range of items. The selective nature of items targeted addresses one of the objectives of this study i.e. the exploration of the reasons why minimal business opportunities have been created out of the municipal waste. There is no SMME who can target for purchase from waste pickers recyclables that were not favoured by the market. According to Bagchi (2004) and Pichtel (2005) all the recyclables that are collected by waste collectors in Kokstad are also targeted by recyclers globally.

3. Quantities of recyclables collected.

One of the objectives of this study is to establish the volume of waste that is diverted from the landfill site and this category is discussed in relation to that objective. The actual quantities of waste recyclable materials collected in Kokstad vary greatly. This is due to the fact that recycling SMMEs only accept that which is delivered to them since waste pickers only target a few items. Waste quantities collected and recycled are very important because they determine market availability (Cheremisinoff & Ferrante, 1992). Since there are few recyclables targeted for collection and selling, this begins to highlight the reasons why so much waste is dumped in the landfill site. This means that all those items that are not targeted end up being discarded into the landfill site. Unfortunately there is no weighbridge at the Kokstad landfill site to get the exact quantities of waste discarded but recycling SMMEs use scales to measure the amount of waste they recover. Quantities of items collected by one SMME over a two months period are reflected on the tables below.

ITEM	QUANTITY
Aluminium	1.3 tons
Brass	0.1 tons
Copper	0.3 tons
Stainless Steel	0.1 tons
Newspapers	12.7 tons
Magazines	1.8 tons
Iron	76.3 tons
Zinc	11.1 tons
Cardboard	51.1 tons
TOTAL	**154.8 tons**

Table 4.1 Recyclables collected by E.G. Scrap n Steel in September 2011.

ITEM	QUANTITY
Aluminium	1.5 tons
Brass	0.1 tons
Copper	0.5 tons
Stainless Steel	0.3 tons
Newspapers	7.5 tons
Magazines	14.3 tons
Iron	73.0 tons
Zinc	6.0 tons
Cardboard	44.9 tons
Plastic (PET)	4.7 tons
White paper	6.4 tons
TOTAL	**159.2**

Table 4.2 Recyclables collected by E.G. Scrap n Steel in October 2011.

Statistics reflect a steady increase in the recycling of certain products in South Africa. Even in the Greater Kokstad Municipality there seems to be an increase in the recyclables collected each month. The total amount of recyclables collected each month appears to be insignificant but it is a great achievement. If there were baseline data one would be able to estimate with some degree of certainty the total quantities of waste diverted from the landfill site. The National Waste Management Strategy Implementation South Africa (Recycling), Waste Stream Analysis and prioritization for recycling (2005) reports recycling statistics as follows:

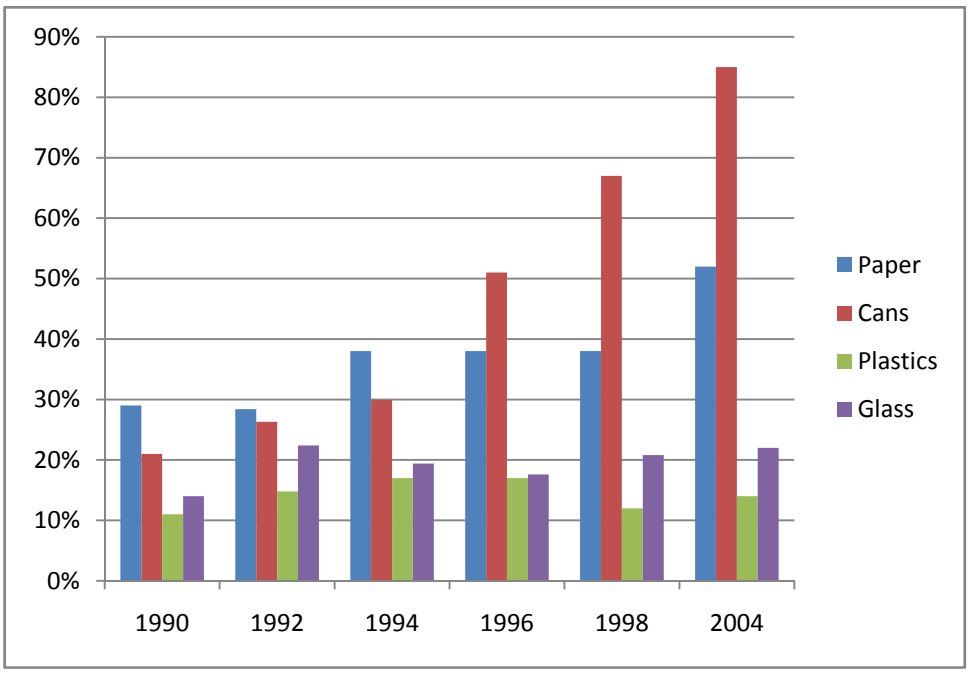


Figure 4.3 Recycling Statistics for South Africa (DEAT, 2005)

Figure 4.3 indicates the recycling rates of just a few items. The figures above are reflected in the Draft National Waste Management Strategy (2010) and the items are paper, cans, plastics and glass. The figures are for a period starting from 1990 to 2004. According to these statistics the recycling rate for cans surpasses all recyclables from 1996 to 2004 and before that period paper was leading in terms of the amount recovered. This means that there was a rapid increase in the market for cans. The recycling rate for plastics has been increasing from 1990 to 1994 and a slight decrease was observed in 1996 and 1998. In 2004 the market for plastics increased again. The figures indicate that the supply and demand varies like all other commodities.

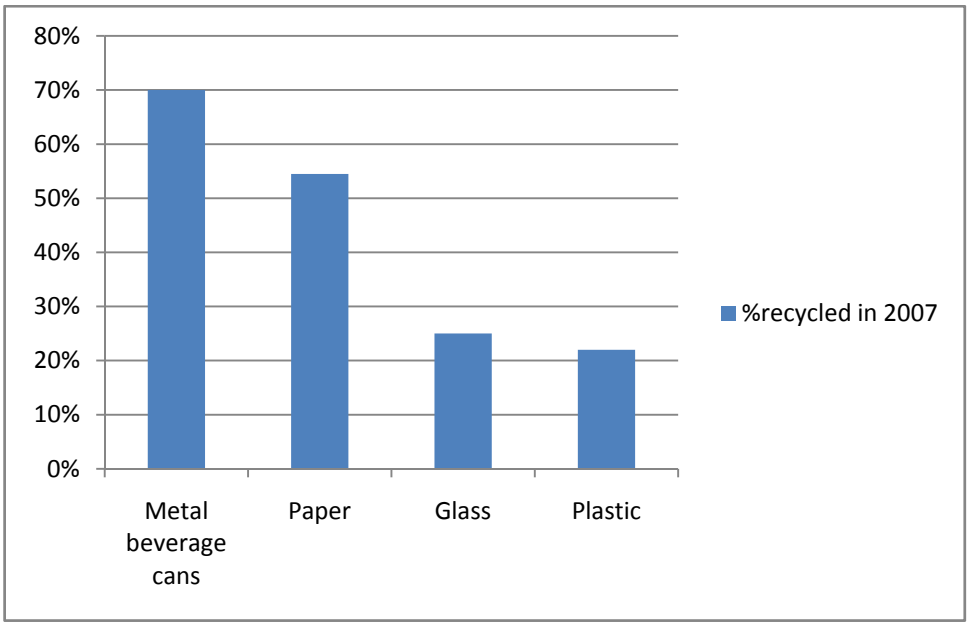


Figure 4.4 Recycling rates in South Africa, 2007 (DEA,2010)

Figure 4.4 is indicative of the recycling rate as captured in 2007. The demand for paper, glass and plastic has increased while that of cans has decreased. The rates are determined by the market and keep changing according to the supply and demand equation. This means that recyclables are a commodity whose supply and demand is determined by market forces.

4.2.2.2 Transportation

When dealing with recycling, transportation is a critical issue. This is due to the fact that recyclables need be collected, separated, classified, processed and transported to major recycling companies based in Durban. Transportation as a sub-theme is divided into two categories which are (1) Collection and separation of recyclables and (2) Processing and dispatching of materials. Each of the two categories will be dealt with separately.

1. Collection and separation of recyclables

Waste pickers at the landfill site are mainly responsible for collecting and separating waste recyclables. They collect for a number of days, separate the items (i.e. put each item separate from each other, e.g. cardboard, white paper, steel bundle pieces of cardboard together and fasten them, put two liter plastic bottles into bags). When sufficient material has been collected, equal to the size of vehicles that are used to fetch the recyclables away from the landfill site, pickers

contact the recycler or SMME concerned to come and weigh the materials. Recyclers have got scales that they use to weigh each waste picker's load. On the day of the removal of loads from the landfill site each waste picker has to be present to weigh his or her load. It is important that waste pickers be present when recyclables are weighed because they get paid in accordance with the quantity and weight of recyclables as determined by the scale. The correct quantities are recorded by the recycler and then the recyclables are removed from the landfill site to the recycler's depot. It is critical that each recycler must have the necessary vehicle available to transport material to his depot. There is no space in the landfill site and once there is enough material for a load it must be removed to create space for more recyclables to be collected. Recyclables are removed from the landfill site at least twice each week. Waste pickers have shared a lot of experience and the challenges they face in their work.

One participant said "*Siyaziqokelela esakeni intsimbi sizibeke ecaleni, sifake lide ligcwale isaka, kufike imoto ilayishe." [We collect steel and put it in a bag until the bag is full and once the bag is full the waste recycling SMME comes to fetch the load.]*

It has to be stressed that these recyclables have to be clean in order to have value. The collectors know what quality of each material is required. Both quantity and quality are of high significance. If the material is dirty the value drops or it is rejected. One recycler said *"The people that collect at the landfill site won't collect the dirty ones. The dirty ones are left behind."*

According to Cheremisinoff and Ferrante (1992) transportation of paper is expensive. It is estimated that about 90% of the cost of recycling paper is spent in collecting, sorting and transporting waste paper material.



Figure 4.5 (Recyclables at Kokstad landfill site ready to be weighed and loaded by recycling SMMEs)

2. Processing and dispatching of materials



Fig 4.6 Baled Recyclables ready to be dispatched at E.G. Scrap n Steel

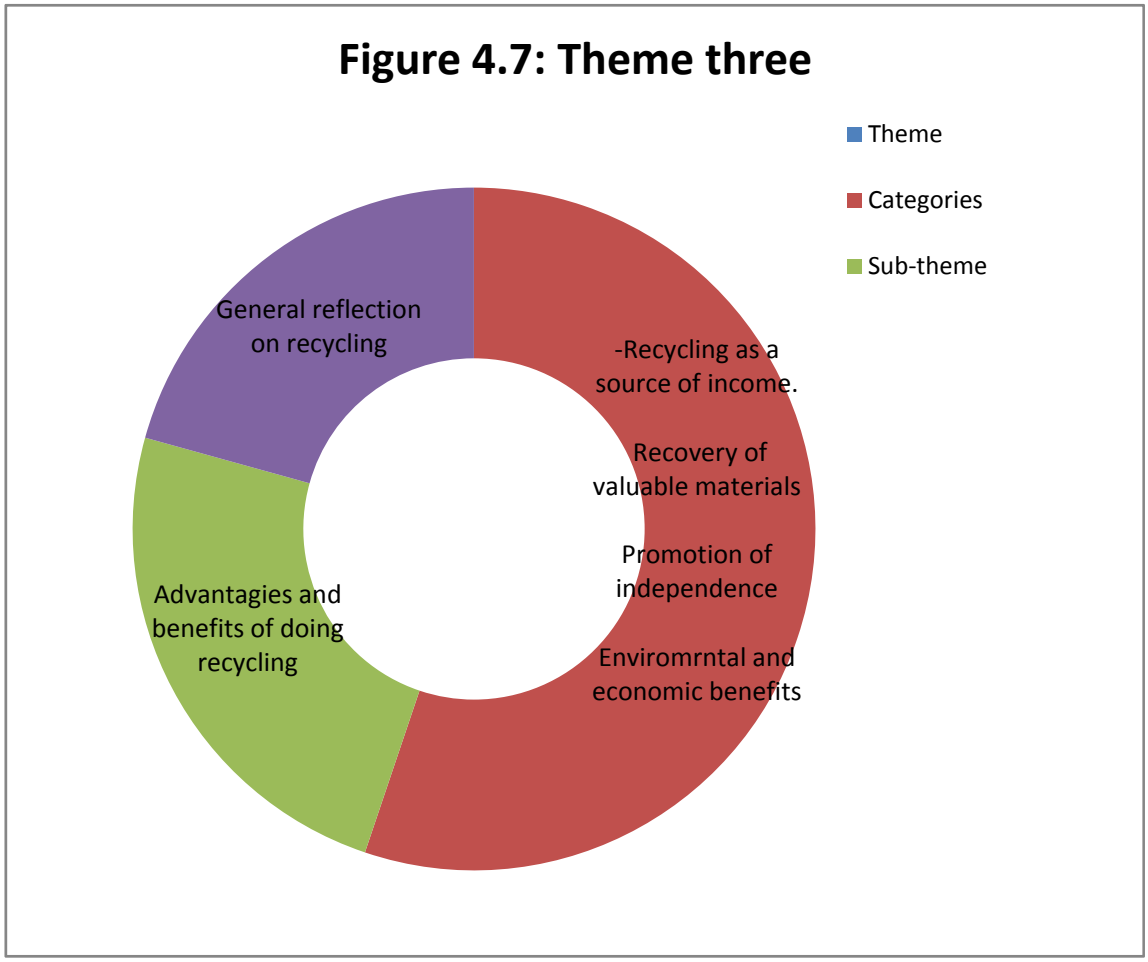
At the depot, further separation of material takes place. Besides the loads of materials that come from the landfill site, recycling SMMEs buy material from individuals who come to sell their stuff. Materials are separated again and put into the correct grades. One recycler states that *"We sort them out by hand and the same items will go into a separate bag until we have enough bags to bale and the same is done with plastic bottles. Cardboards will go directly into their building and from there it will be put into a compacting machine."*

Once processing is complete at the depot, the loads of recyclables are loaded onto trucks and dispatched to Durban. Kokstad is far away from the main centers where big recycling companies are based. Kokstad is nearer Durban which is more than 250km away. This means that apart from the fluctuating prices of recyclables in the market Kokstad recyclers have to grapple with transportation costs. The director of one SMME stated that *"I do 15 tons of steel per week to Durban and that means one trip of steel load to Durban each week."* This recycler further said *"We cart two loads of 15 tons of cardboards to Mondi in Durban each week…we cart 7 tons of plastics bottles once a month, then we do newspapers with magazines and white paper about 2*

loads per month." SMMEs have to organize their own transport because without transport it would be difficult to run a recycling company. The director of this SMME says *"Mondi won't come to fetch it, there is no company that fetch these things…but Mondi does give you something for transport."*

In processing and dispatching recyclables, SMMEs need to be well conversant with the specifications needs of recycling companies. According to Bagchi (2004) knowledge of the manufacturer's specification determines the acceptability of recyclables because if they are not correctly packaged and processed, loads of recyclable materials may be rejected. Once procedures for processing such as compaction have been followed, it becomes easier to weigh and get the correct tonnage. One recycling SMME, namely E.G. Scrap n Metal process and package their material and that is why they have been able to provide the researcher with exact figures of the amount of recyclables they process and transport to Durban.

4.2.3 Theme three: General reflection on recycling



Research participants expressed general views on how they feel about recycling. Based on this theme research participants have expressed their experiences regarding their recycling work. This theme comprises one sub-theme namely advantages and benefits of doing recycling.

4.2.3.1 Advantages and benefits of doing recycling

From the interviews conducted, participants shared some ideas around what they believe as the advantages and benefits of involvement in recycling initiatives. Under this sub-theme there are four categories that have been identified. These categories are (1) Recycling as a source of income (2) Recovery of valuable materials (3) Promotion of independence and (4) Environmental and economic benefits. These categories will be unpacked in the discussion that follows.

1. Recycling as a source of income

All research participants unanimously agreed that recycling activities transfer income to families that would not have any income if there was no recycling taking place. Waste collectors particularly narrated sad stories about what was happening in their lives before they were involved in these recycling activities. Some were scavenging in the landfill site picking up food from the landfill site, some had been actively and patiently seeking jobs for years and others had actually lost hope that they would ever earn an income again. Recycling has now become a source of livelihood. The NWMS (2010) reports that there are about 90 000 jobs that exist in the recycling sector in South Africa. These jobs exist primarily in the waste picking, collection and sorting of waste and if DEA records are constantly updated and inclusive enough, at least Kokstad can claim to have made its contribution to the statistics of people involved in recycling. Cheremisinoff and Ferrante (1992) confirm that recycling provides some form of employment to unemployed people. One participant believes that recycling is a very good initiative, she states *“Ndiyibona I right mna ngoba manje yiyona ndawo esizama kuyo kuba I most yethu sidinga umsebenzi, umsebenzi awukho,… kanti xa ndiphaya ndiyakwazi ukuchola imali ndithenge umgubo ndilale ndityile.”[I feel it is a right thing to do because it is where we earn a living since*

most of us are unemployed, there are no work opportunities, yet when I am at the landfill site doing waste picking I earn some money, buy maize meal and go to bed having had a meal.]

This is a statement that was echoed by almost all research participants. One participant said *"Mna ndiyibona I right kuba oko ndangena phaya ndiyakwazi ukuchola imali."[I view it as being very helpful because ever-since I started there I do get money.]* Another statement worthy of capturing says *"Siyibona kuyindawo e right, kuba nathi singabantu abangomama ungathola ukuthi satshonelwa ngamadoda, sinabantwana ngayi 6 endlwini. Abanye abantwana ufumanise ukuthi awusakwazi nokubafundisa. Ube unqwenela ukuthi abantwana bakho mabafunde. Xa uye phaya ufike uchole ukuthi abantwana balala bedlile. Nokuba uchole leyo senti kodwa akufani nokuba abantwana bakho balale bengadlanga."[We see waste picking at the landfill site as a right thing to do, some of us are widows and have about 6 children in our households to take care of. We struggle to send some of our children to school even if you want to send them to school. When you are doing waste picking, your children get a meal. Though it's a small amount of money its better because your children cannot go to bed without a meal.]*

The statements from all participants bear the same message. They all confidently state that recycling has meant a meal to them, they are able to buy groceries and other household necessities, they pay school fees, they buy clothing and are able to provide for their families as they should be able to. One recycler boasts that "*In the landfill site I have 18 people working, in the shops in Kokstad alone I have 6 people working, then I have a crew of 29 people working at the depot."* In total, this means that this SMME has created job opportunities out of waste recycling to 53 people. Another SMME interviewed revealed that "*I have 14 workers."* This is indeed a significant contribution to the economic development of this area, given the high rate of unemployment and also the fact that if these SMMEs can get sufficiently large premises, they have a potential to increase their workforce. Madsen (2006) concurs that waste picking does, indeed, transfer income to migrants from rural areas and makes the poorest citizens able to meet their basic needs. Research participants did not want to reveal the amount of money they get from waste picking, but in a separate research study one waste picker reported that he/she gets R190 per month and another one said he/she gets between R190 to R600 per month (Schenck & Blaauw, 2011).

2. Recovery of valuable materials

Middleton (2008, p.345) confirms that "something that is considered a waste today can become a resource tomorrow." Currently, and as a result of modern technologies, something that is regarded as waste is something that has not been used to its full potential (Dijkema et al as cited in Middleton, 2008). The Waste Act (2008, sec1) states that "any portion of waste, once re-used, recycled and recovered ceases to be waste." Middleton (2008) argues that waste collectors do not only recycle to sell but pick up valuable material for their own use in their households. Apart from the targeted materials that are collected as per the needs of recycling SMMEs, collectors also have access to other most valuable resources and assets from the landfill site. These are the items that are not necessarily sold to the recyclers whom they regard as their employers but are either sold somewhere else through another market or they are utilized by waste collectors at their households. One participant reports that she also collects two liter maas containers and boldly states that "*ndicela umlungu wam andincikisele ezi zipakupaku enzele ziphume ngaphandle ndizichole enzele ndithengisele abantu… ndifike ndizihlambe ndizise emizini yabo bafike bazithenge bandinike loo masenti eparaffini." [I ask the SMME to whom I sell my recyclables to take my containers out of the landfill site so that I may sell them to people in the community…when I arrive home I wash them and take them to the buyer's households, they buy them and give me some money.*]

Another waste picker reported his story as follows, *"Yona I right yiyona ndawo esiphilisayo … like thina siyakwazi ukuthola izitofu zogesi singenandlela yakuzithenga, usithole silahliwe, usilungise ngendlela owazi ngayo usi connecte sibuye sisebenze. Esinye uyakwazi ukuthi uhambe uye kusidayisa uthole imali ngaso… uyakwazi ukuthola into nje ese right like umculo ka nje i.e. old radio, hi fi. Noba ube ungena nto uyikhalisayo endlwini, ukwazi ukuyi connecta ivele ifike ikhale, uzithole sele une radio ubungenayo."[Waste picking is right because it is where we get our livelihood, we sometimes get old hot plates which we have no means to buy, you get it in the waste, you repair it until it works. Others we repair, sell and get money. We also get right things like old radios and hi-fi music system, sometimes we do not have these things, you just connect it and it starts to work, then you find yourself having something you did not have.]*

Participants reported that they also get clothes at the landfill site. So it is a place where they get useful material without having to buy because they have no money. In India, waste pickers

provide inexpensive goods made from recycled materials where, for instance, “shoes and old clothes are sold at a local market to shoe renovators who resole and make the old shoes look new and re-dye light coloured shoes” (Rogerson, 2001, p.251).

3. Promotion of independence

Since the waste pickers are self employed they enjoy a certain degree of independence. They are not controlled by anybody, they regulate their own work, their work depends on their energy, stamina and capabilities. In what they do they enjoy autonomy and freedom as entrepreneurs in their own right. Entrepreneurs appreciate the independence inherent in their work (Longenecker, Moore, Petty & Palich, 2006). Niemand (2006) states that the lack of innovation and an entrepreneurial mindset in people retards people’s growth and development. Waste collectors might be involved in waste collection by default but might be enjoying the sense of independence associated with it. One participant claims, *“Mna ndithi nyani isiphethe kahle, kuba noba siyagula uyafika umana ucothoza kancinci akakuhluphi umlungu wakho akakho mva kwakho wena kuxhomekeka ezandleni zakho ukuba usebenze kanjani, uthola leyo mali yomsebenzi wakho, yiyona nto mna ndiyincomayo, akakulandeli, ukuba imali incane andikhalazi ngoba zizandla zam. Ukuba ininzi ndizibonile ukuba ndisebenzile.”[Indeed I feel waste picking is very good, even if you are not feeling well you work as much as your health permits, your employer does not push you, he is not after you, you push yourself, your pay is determined by you, that is what I commend, you work independently, if I get little money I do not complain because its how I worked, if I get better payment I know I have worked hard for it.]*

One participant remarked that her work is rewarding because she gets what she expects. She said *“Izinto endizenzayo, ndiyaziqoqa ndiziqoqe xa sele ndizisa phaya zindikhuphela into e right…ndifumana imali ibe ninzi kanjalo.”[I do what I do earnestly, when I submit my hard work for selling, I get something pleasing… I get better payment*.] To sum up, Kao, Kao & Kao (2002, p.204) believe business is an activity where “many persons have made livings for themselves and their families and provided jobs and useful services for others.”

4. Environmental and economic benefits

The directors of both SMMEs that were interviewed felt that recycling is very good for the environment. It contributes to the general environmental cleanliness in the sense that all the

rubbish that is unsightly in our open spaces is removed and used for the economic development of the area. One SMME director said, "*Recycling is a good thing because it keeps your town clean and it keeps your landfill site low.*" By means of the New Growth Path, government intends to promote economic growth as well as environmental sustainability in line with the green economy (The New Growth Path). The new Growth Path (p.7) states that "over the short to medium term, it can support labour-absorbing activities especially in …light manufacturing and services to generate large-scale employment". Waste picking is recognized as playing a significant role in environmental and economic development especially in developing countries (Madsen, 2006).

4.2.4 Theme four: Reduction of waste dumped in the landfill site

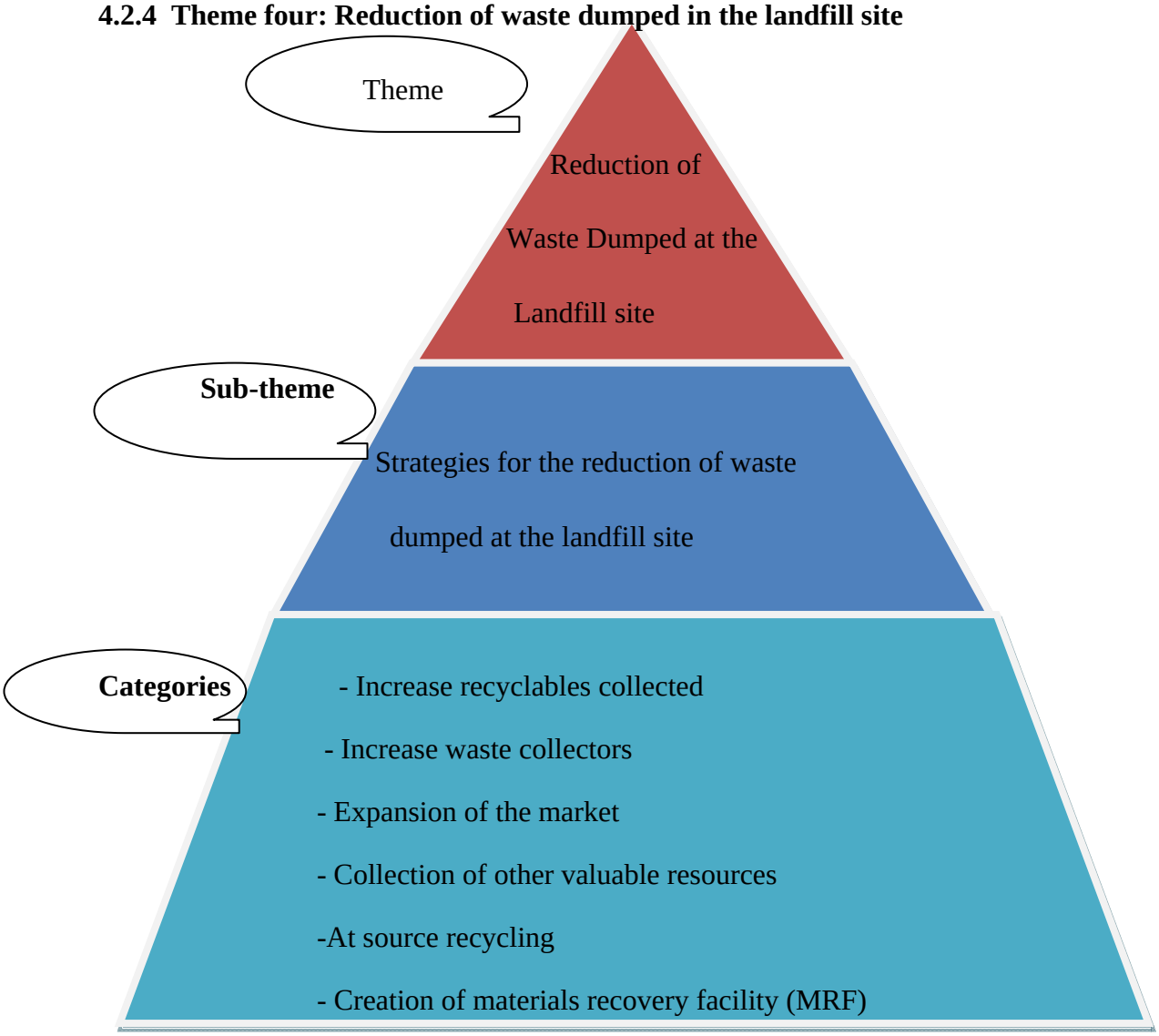


FIGURE 4.8: Theme four

Participants and SMMEs shared some ideas on how waste dumped in the landfill site can be reduced. This is one of the themes wherein research participants narrated their experiences regarding recycling since this is one of the objectives of the study. There was only one sub-theme identified from this theme namely (1) Strategies for the reduction of waste dumped in the landfill site.

4.2.4.1 Strategies for the reduction of waste dumped in the landfill site

In this sub-theme participants and directors of SMMEs interviewed suggested some strategies that can be used to reduce waste dumped in the landfill site. This sub-theme is further sub-divided into six categories which are, (1) Increase recyclables collected (2) Increase waste collectors (3) Expansion of the market (4) Collection of other valuable resources (5) At source recycling and (6) Creation of materials recovery facility (MRF). A detailed discussion of each category follows.

1. Increase recyclables collected

Both Participants and directors of SMMEs felt that one of the strategies to reduce waste dumped in the landfill site is to increase recyclables collected. The increase in the recyclables collected has a positive impact on the large volume of waste that is landfilled. One of the objectives of this study was to explore reasons why a large volume of waste is landfilled and the increase of recyclables helps to address that challenge. As has been highlighted earlier in the report, there are very few recyclable items that are actually collected. This is due to a number of factors which include, inter alia, lack of sufficient space within the area in which recycling takes place currently, lack of attractive markets, lack of equipment and other machinery and a shortage of waste collectors. These factors combined contribute to less recyclables being collected. Apart from the constraints faced by recyclers, recycling of any material depends on a number of factors: there must be a demand for the material recycled, materials recovered should meet the specification of the consumer, there must be enough supply of the product and the price of recycling must exceed the cost of collection, processing and transportation (Tchobanoglous et al, 1993). Recycling programs that collect a wide range of recyclables such as mixed paper, newspaper, cardboard, glass, metal, plastic bottles stand a better chance of growth and survival

than those collecting just a few items (Pichtel, 2005). The reason for this is that if a company recycles only one product and the market in that product is not good that company may struggle to survive, yet if there were other products the market would be better on those and the recycler would continue to make profit on the profitable product (ibid). Pichtel (2005) states that recycling of paper and cardboard is usually what is most demanded by the market at any given time. One recycling SMME said "*We would like to recycle cardboards and plastics as well but at the moment we do not have the machinery to do such, we have to compress it and we do not have the compressing machine."*Participants believe that if recyclables can be increased waste would be reduced, *"Kukuthi njengokuba sichola izigubhu, sengeze futhi siphinde sichole amaplastic, namabhodlela, nezinye, sithengise ungancipha ke udoti."[As we currently collect two liter plastic bottles, we should add others like plastics, bottles etc and sell all these in that way waste dumped can be reduced.]*

Participants further mentioned that there are items that are collected on ad hoc basis. These items are not collected regularly and there is no one specializing in their collection. These materials increase waste in the landfill site. These are items like tyres and timber. Some people do come occasionally to collect these but not as often as necessary. They mentioned that schools sometimes come to collect tyres and other people usually come to collect timber. If these, too, can be regularly collected, dumped waste could be reduced.

2. Increase waste pickers

One of the reasons cited by waste pickers for why so much waste gets deposited into the landfill site is that they are short staffed. They cannot cope with the amount and, as a result, some recyclables are not collected and therefore are buried under the soil. Waste pickers regard themselves as being overwhelmed by the huge volumes of waste dumped in the landfill site. On the other hand, Tchobanoglous et al, (1993) and Williams, (2005) believe that the collection of recyclables depends on the market. If the market is not available or not reliable it is difficult to increase the number of pickers. This is due to the fact that the recyclables collected must be transferred to a certain market and not be stockpiled. To a certain extent this is a limitation on increasing the collectors but in Kokstad the market is not a limitation. The only limiting factor is the business space according to the recycling SMMEs. One participant has observed that *"Kutsho ukuthi sithi esihlulekayo…nokuba mhlawumbi naye engeze abantu ngoba uthatha yonke*

into ephaya." [It means we cannot cope with this work, obviously he should add more people because he recycles almost everything there.] One participant further adds, *"okanye nomlungu wethu ongeze abantu, kubekhona I group yabantu abachola amabhodlela, amaplastic, amathina, amakhalibhodi, nezigubhu." [perhaps even the SMME to whom we sell our commodities should recruit more people, there must be a group of waste pickers responsible for collecting each item, for example, bottles, plastics, tins, cardboards and plastic bottles.]*

These comments by research participants indicate that most of them feel that the shortage of waste collectors has an impact on the volume of waste that is dumped. They all echo the same sentiment that there must be more waste collectors to deal with that waste.

3. Expansion of the market

Some research participants believe that the solution to this problem lies in the expansion of the market. They believe the market is limited and that is why other recyclables do not have a market and therefore cannot be collected. There must be a concerted effort to search for a new market and expand the existing market. All the recyclables must be recycled and diverted away from the landfill site. Only the non-recyclables should go to the landfill site. This limited market causes recyclers to be selective in choosing which items to recycle. One participant feels that the reason why markets shrink is because *"kungenxa yokuba apho nabo bazilayishela khona loo nto bangayicholiyo ayizi kubangenisela ngamali, bathatha ezi baziyo ukuthi zizakufika zibangenisele imali. Mhlawumbi imali yezinye incinci."[It may be due to the fact that recycling industries do not recycle other stuff because they will not get any profit, they only focus on those items which they know will give them profit, perhaps the prices for other goods are too little*.]

The National Waste Management Strategy Implementation South Africa (Recycling) Waste Stream Analysis and Prioritization for Recycling, later NWMSISA (2005), states that there are a number of strategies devised by the government in an effort to improve recycling rates in South Africa. These efforts include the establishment of specific organizations to be responsible for setting up recycling companies for each target waste stream, for example, paper and fibre recycling is done by Sappi, Mondi, Nampak and Swazi paper; cans and scrap metal are recycled by Collect-a-can; glass is handled by the Glass Recycling Association; plastics are recycled by Plastics Enviromark and there are other companies responsible for recycling other products. The

NWMSISA (2005) states that “the glass recycling business is well established in South Africa. In 2002, there were 143 agents collecting glass throughout South Africa”. The recycling companies interviewed in Kokstad do not collect glass. Recycling of glass could be targeted in Kokstad to expand the market.

Plastic recycling is also thriving in South Africa but only for PET, HDPE and PVC. Other types of plastics like LDPE, PP and PS are not profitable to recycle because excessive labour and services cost are forcing recyclers to stop dealing in these products (NWMSISA, 2005). Lastly the expansion of the market means that more recyclables will be collected and therefore less waste will be dumped in the landfill site. This will reduce the total waste discarded into landfill sites and therefore respond to the challenge posed by the dumping of more waste in the landfill as per the objective of exploring reasons for large volume of waste being deposited into the landfill site. Again if the market is expanded then more business opportunities in waste recycling will be created. This will address one of the objectives of the study which sought to establish reasons why minimal business opportunities have been created out of waste generated in GKM.

4. Collection of other valuable resources

Participants complain about the strict regulations and policies that govern the landfill site. They argue that security guards are too strict and that they deny them access to other valuables which, if also collected, have a potential to reduce the waste deposited in the landfill site. Participants maintain that security guards allow to be taken out only those items that are targeted by the two recycling companies. Anything that does not form part of the package collected by these companies is prohibited to be taken out of the landfill site even if it is recyclable. One participant states *“njenganee nkuni kanje … sizishiya phaya. Abasivumeli siphume nazo. Into nje oza kuyilungisa ekhaya abayivumeli iphume.”[Like firewood, we leave them at the landfill site, they do not allow us to take out firewood. Anything that you can repair and reuse at home they do not allow it to be taken out of the landfill site]*. Referring to milk containers, one participant said “*Ndiye ndizipakishe ecaleni, imoto eze kulayisha iintsimbi ndicele kuyo ukuba isose izithathe kuba oosecurity abafuni ukuba ziphume izinto ezinje nge zipakupaku.”[Regarding milk containers I pack them aside then I ask the vehicle coming to load steel to also load these milk containers for me because security guards prohibit the taking out of milk containers.]*

From the point of view of the research participants, it is not correct for items like firewood and milk containers to be prohibited from being taken out like other recyclables. This is why they argue that if other recyclables were to be allowed to be diverted from the landfill site the high volume of waste deposited in the landfill site could be reduced. Middleton (2008) argues that other recyclable resources from landfill sites are being recovered in other countries for use in small scale manufacturing industries to make other goods. This has led to many countries discouraging the generation of waste because actually waste is not waste but a resource (Middleton, 2008). For instance, there is no need for a person to cut branches off trees and treat that as waste worthy of being dumped into the landfill site because that is firewood, especially to communities without any other source of energy.

5. At Source recycling

Directors of SMMEs interviewed have strong feelings about at source recycling. They argue that recycling at source is helpful because you can get clean recyclable materials. When recyclables are clean their value is high and recycling companies reject dirty and contaminated material. The best idea is to separate recyclables at the source before they are contaminated. One director of the SMME states that what is needed is "*to educate the people about recycling where wet waste will go separate, glass will go separate, tins will go separate, paper will go separate and cardboards will go separate.*" He argues that only wet waste will go into the landfill site and all other recyclables will go straight to the recycling center. This will certainly reduce the amount of waste that is dumped into the landfill site.

According to Pichtel (2005, p.128) source separation is the "removal of potentially recyclable material from the waste stream, conducted by the individual consumer and commercial establishment." Source separation is the same as at source recycling. Source separation involves the separation of waste at the point of generation whereby different categories or waste types are placed in individual storage containers and when waste is removed on the day of collection, it is removed separately (Tchobanoglous et al, 1993). The advantage of separating waste at source is to promote recycling since waste that is separated at source is clean and therefore has high value at the recycling market (ibid). Waste that is contaminated is not recyclable because recyclers reject it.

6. Creation of Materials Recovery Facility (MRF)

Another idea brought up by SMME directors interviewed is that of a Materials Recovery Facility (MRF) where all waste can be separated before non-recyclable waste is taken into the landfill site. This could save all the waste resources that do not need to be land filled. A facility like this could reduce waste dumped into the landfill site. The interviewee suggests as follows "*if we can have a place where they can dump the stuff before pushing it with a bulldozer into the hole and we have a short time when we can sort all these things in a safe and protected building and what is not recyclable then goes into the landfill site."*

Bagchi (2004, p.131) provides the most basic and simple definition of a Materials Recovery Facility (MRF) as a "building or facility where the various recyclable items are housed for sorting and distribution." It is a facility that is linked to the source separation of waste. When the recyclables have been removed from the source, either a household or business site, the items are transported to the MRF for further separation, processing and final preparation for the market (Bagchi, 2004). This means that recyclables such as glass, cans, bottles, plastic are separated from each other and placed in various individual containers. Normally, sorting at the MRF is done by hand (Pichtel, 2005). When all the recyclable items are in separate containers they are further processed according to the specification of each recycler.

The development of MRF will assist the municipality to establish a facility that will facilitate waste recycling and also improve the quality of recyclables collected. The MRF is a significant facility in the waste management system of any local authority and since this facility does not exist the municipal waste management system is currently not favourable to recovering clean, valuable waste. At the moment all waste in the GKM is mixed and waste pickers are exposed to working conditions that are a health risk. If this facility is established it will expand the business opportunities around waste management and therefore respond to one of the objectives of this study which was to determine whether conditions in the municipal waste management system favour the development of business opportunities in waste management.

4.2.5 Theme five: Challenges faced by recycling SMMES and waste pickers

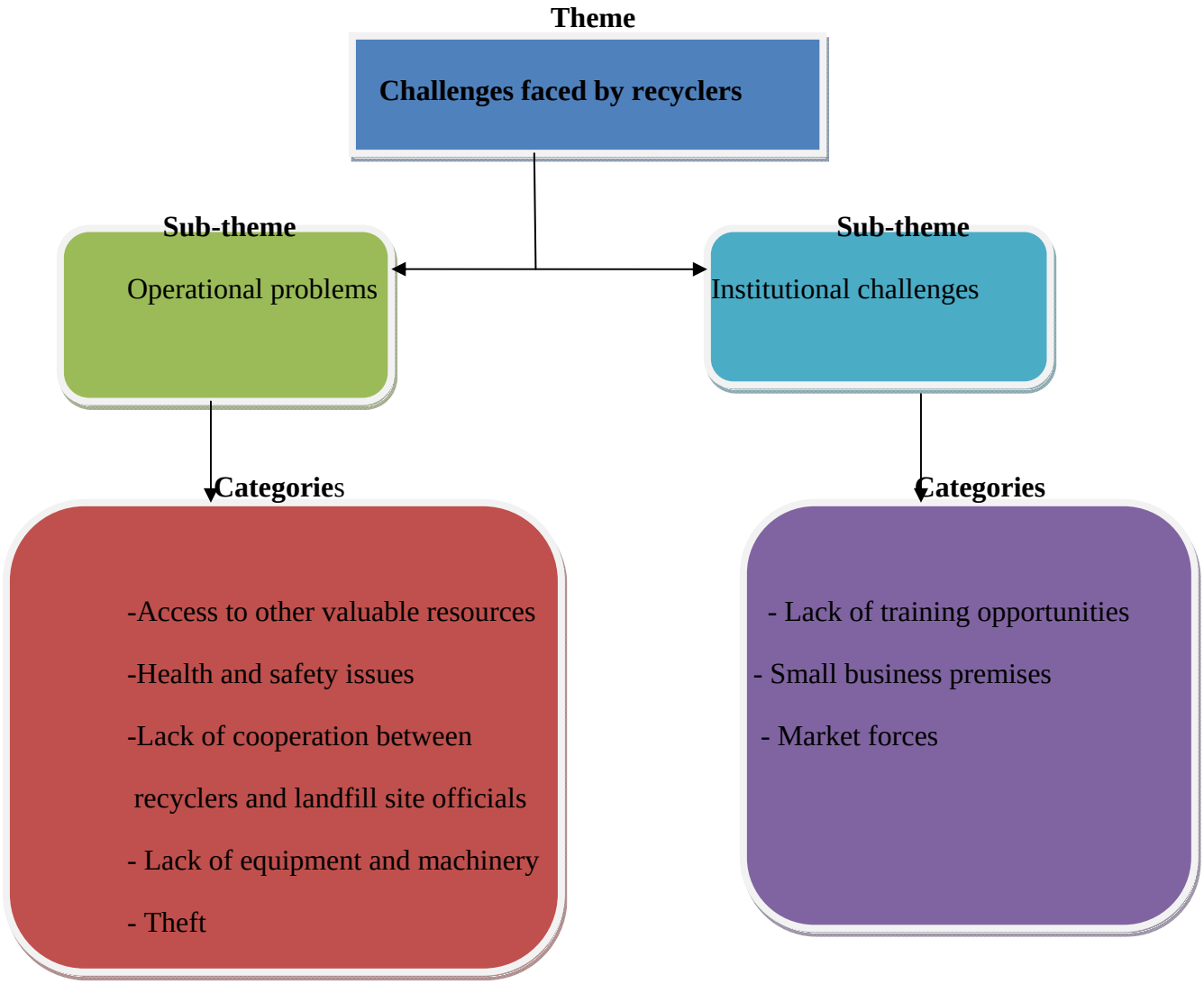


FIGURE 4.9: Theme five

Both SMMEs involved in recycling as well as waste collectors highlighted a number of challenges they are confronted with. This is one of the objectives of this study and all research participants expressed their challenges in more detail. The second objective of the study that was addressed through this theme was whether the conditions in the municipal waste management system favour the development of business opportunities in waste management. Their challenges were consolidated into two sub-themes which are (1) Operational problems and (2) Institutional challenges. Each of these sub-themes will be discussed separately.

4.2.5.1 Operational problems

The researcher clustered all those challenges that were more or less related to the operational issues of undertaking recycling. These challenges were then reduced into five categories. These categories are: (1) Access to other valuable resources, (2) Health and safety issues, (3) Lack of cooperation between waste collectors and landfill site officials, (4) Lack of equipment and machinery and, lastly, (5) Theft. These categories will be discussed individually.

1. Access to other valuable resources

Waste collectors felt that there are many valuables that are found in the landfill site and they have identified these valuables as not deserving to be in a landfill site. When they want to recover or retrieve these valuables, they are confronted with numerous regulations and policies which forbid them from retrieving these valuables. They regard these objects as being helpful to them either in their households or as resources they can sell and get income out of. One participant expresses her problem in the following extract, *"mna ndikhala kakhulu kweli cala lee nkuni ngoba thina sihlala e Bhambayi. Sihlala emikhukhwini kuyabanda ngeke uhlale emkhukhwini ungabasanga. Kutsho ukuthi xa ngaba abantwana besiya esikolweni kufuneka ubase endlwini ukwazi ukuthi ubahlambe. Ngoku kunzima kakhulu ngoba kaloku asinambane asinantoni siphila ngezinkuni ngoku asivumeleki ukuba sizithathe."[I am extremely concerned about firewood because we stay in Bhambayi (the informal shacks). We stay in informal settlements and it is very cold there, you can't stay without fire. When children have to go to school you need fire to provide warmth so that you can wash them. Now it is very difficult because we do not have any electricity, we depend on firewood but we are not allowed to take firewood from the landfill site.]*

Another research participant complained about the fact that they are not allowed to take out milk containers. She was arguing that they take out these containers, wash them and sell them. This is an additional income to them but the security guards at the landfill site forbid them from taking out these containers. One participant said "*Ndiye ndizipakishe ecaleni, imoto eze kulayisha iintsimbi ndicele kuyo ukuba isose izithathe kuba oosecurity abafuni ukuba ziphume izinto ezinje nge zipakupaku."[I pack my material aside then I ask the vehicle coming to load steel to load these milk containers for me because security guards prohibit the taking out of milk containers.]*

The White Paper for Local Government (as cited in The Local Government Turnaround Strategy, 2009, p.4) defines developmental local government as "local government committed to working with citizens and groups within the community to find sustainable ways to meet their social, economic and material needs and improve the quality of their lives." To improve the quality of lives of South Africans, local government has a responsibility to provide the following services: electricity, water, sanitation and refuse removal services (ibid). Because of the inequalities of the past there are huge backlogs in the provision of municipal services e.g. electricity. Greater Kokstad Municipality has a backlog in electricity provision of 60.7% (Local Government Turnaround Strategy, 2009, p.73). Lack of access to electricity as a basic service is another measure of poverty. Wilson and Ramphele (1989, p.43) state that "for millions of people around the world poverty means increasing difficulty in obtaining the basic energy necessary for cooking, heating, and lighting." Poverty stricken people, particularly women, collect firewood as an alternative energy source for cooking, heating and lighting. Waste collectors collect firewood from the landfill site for use as a household energy resource and that is why they complain when such access is restricted.

2. Health and safety issues

The issue of health and safety with reference to waste collectors is difficult to handle. These people are not formally employed by SMMEs. They are actually self-employed. They see other (especially municipal employees) workers with personal protective equipment (PPE) and they start to complain that they also need to get protective clothing from their employers. One participant said *"Enye into eyingxaki zizihlangu ezi sizinxibayo, ingathi singafumana izihlangu eziqinileyo ezingamaquze, kube ngamagloves, kube zizinto esingavala ngazo iimpumlo."[The other problem is with regard to protective clothing, like the shoes we use, it would be better if we can get strong boots, hand gloves and masks]*

According to Williams (2005) any materials recycling program involves occupational health risks for waste pickers which are often ignored. Waste pickers use their hands which are usually unprotected to pick up and sort waste at recycling facilities. This neglect exposes waste pickers to occupational health risks which should be avoided at all times. Madsen (2006, p.185) acknowledges the fact that waste pickers "lack awareness on how to handle waste and poor hygiene habits has made the work of collecting waste challenging as wastes are often combined

with solid, domestic, industrial, and hazardous waste". Waste pickers are also exposed to a number of infectious diseases such as respiratory, eye, skin, digestive system, nervous system and gynecological disorders (ibid). Women involved in waste picking are at risk of giving birth to children with congenital, physical, emotional and developmental disorders (ibid). According the Madsen (2006) waste pickers get injuries and accidents in their work places because of sharp objects and when they get injured they do not receive professional health care.

3. Lack of cooperation between waste pickers and landfill site officials

Waste pickers stated that they have a problem with the landfill site officials. Landfill site officials refer to security guards, municipal officials and any other contractors employed by the municipality to operate in the landfill site. They complain that they get little cooperation from these officials. They do not allow them or give them enough time to collect their materials from the waste. They argue that when vehicles have dumped waste they need time to collect their recyclables before the waste is pushed away by a bulldozer and gets covered. They further state that most of the material they would have recovered is pushed away by the bulldozer and ultimately gets covered. This problem is captured in the following extract *"Kuye kuthi xa kufika amakhalibhodi, mhlawumbi avela kwa Spargs Supermarket kuba awakwa Spargs eza abe maninzi ke wona, afike siwethule siwadilizele phantsi, eli xesha sisaqhaqhayo ibe isiza ibulldozer phaya ivele isuke phaya ibikhona ize apha kulamakhalibhodi ivele ifike iwadudule iye kuwaphosa lee sishiyeke ke thina umsebenzi ungekho sihambe siyohlala phantsi."[When cardboards arrive, for instance, from Spargs Supermarket because those from Spargs come in bulk, we take them out of the vehicle. When we are busy with these cardboards, a bulldozer would move from where it was parked, come to these cardboards and push them away, then we are left with no work, we go and sit down.]*

Lombard (1991) says cooperation involves the interaction of team members in order to achieve certain objectives. This means that team members support and complement each other in the process of working together in harmony. Ife and Tesoriero (2006) contrast cooperation with competition. They argue that cooperation has been eroded by a competitive ethic which seems to dominate our communities. This competitive ethic manifests itself even if there is no need for it. People are so preoccupied with competition that it has become a way of life even where competition is not necessary. One wants to win even if there is nothing winnable. This is what

seems to be happening among officials working in the landfill site. The treatment of waste pickers is similar to the trend that has been observed throughout the world. According to Rogerson (2001, p.254) waste pickers are treated with stigma, perceived as nuisance, deserving municipal repression as they are a "usually a source of embarrassment, a blot on the urban landscape, and officials frequently seek to block their activities especially when international delegations are visiting". They are also viewed as social outcasts who do not deserve any respect (Tevera as quoted by Rogerson, 2001). Because they lack recognition, waste pickers are never featured as significant role players in the municipal waste management system. Since they are unwelcome strangers, although they play a critical part in environmental protection and economic development, they reflect a condition in the municipal waste management system that does not favour the development of business opportunities in waste management which was one of the objectives of the study.

4. Lack of equipment and machinery

This is a problem that was mentioned by the directors of SMMEs who complained that the lack of proper equipment and machinery stalls their work. They state that in recycling equipment and machinery are critical because without them your business will never grow. These recyclables need proper machines with which to be compressed and baled. If the machines are not available and the materials are not compressed and baled the vehicles become full quickly and the load is light without any weight. When the load is taken to Durban the price becomes very low and the business is run at a loss. One director of an SMME said *"it's easy to do the stuff but when it comes to machines it's a problem, they cost a lot of money and I am not funded from anywhere. It's something I started on my own and I struggle to get to where I want to be."*

The same director of an SMME states that *"the cost of machines is very expensive… the plastics pelletizing machine costs about R700 000.00."*

Bullock and Salvador (1993) concur with the sentiments expressed by the directors of SMMEs. They argue that the initiation of a recycling program needs thorough planning because it requires a range of equipment and machines which are often not available. For any recycling program to succeed collection methods must be considered whether at source separation is the method or materials recovery facilities are used.

5. Theft

The issue of theft in the recycling business was raised by both the directors of SMMEs and the waste collectors. Waste collectors state that they collect their material, pack it and put it aside. When they come the following day some of their items are missing or the whole bag full of material is missing. When they ask each other no one has any information. They argue this theft is two-fold. On the one hand waste collectors steal others' material and secondly, when they go home thieves come in and steal their material. They take it and go and sell it. One participant reported "*siyantshontshelana tata. Naba baka SMME1 bake batsho bathi ndiyibonile into yam ibidayiswa ngu bani. Nakwa SMME2 uthi uyafika umntu uthi amasaka am akekho apha. Iyenzeka loo nto. Mhlawumbi ndithululе isaka lika somebody ndithululele kwelam ndibophe ngeyam intambo. Angeke athi nali isaka lam elibona liphantsi lingenalutho, ngoba ziyefana ezizinto."[There is too much stealing in the landfill site. Those from SMME1 sometimes say I have seen my items being sold by someone who also a waste picker. Those from SMME2 sometimes say my bag full of items is lost. That happens quite often. Sometimes someone would empty another's bag into her/his own and fasten with her/his strings, you can't say it is your bag because yours is empty now with nothing and moreover it's very difficult to differentiate your items]*. One director of an SMME said "*they cut the fence, get into the yard and steal iron and they come back and sell you again the same thing you have already paid for."*

According to Snyman (2002, p. 469) "A person commits theft if he/she unlawfully and intentionally appropriates movable, corporeal property which belongs to and is in the possession of another…provided that the intention to appropriate the property includes an intention permanently to deprive the person entitled to the possession of the property". The problem of the high crime rate in South Africa is well documented even in the media. It is a problem that the government still struggles to eradicate and it affects every South African at all levels socially and economically. Herrington, Kew and Kew (2008) cite government policies as being ineffective in terms of promoting business in South Africa. The crime rate is considered the second most problematic factor for doing business in this country (ibid). If material or business stock belonging to an SMME is stolen the director of that SMME is devastated because he/she will struggle to get capital to replace the stolen goods. In the case of waste collectors and small SMMEs the incidence of theft may discourage them from continuing with this business.

4.2.5.2 Institutional challenges

This is the second sub-theme where challenges that were more of an institutional nature were identified. These challenges were consolidated into six categories which are: (1) Lack of training opportunities, (2) Small business premises, (3) The market forces, (4) Inadequacy of waste collectors, (5) Lack of support networks and (6) SMME vs waste collector relationships. These categories will be discussed separately.

1. Lack of training opportunities

This was cited as a problem by SMME directors who said that when they started their business they were unemployed and were never before involved in any business let alone the recycling one. They had to fend for themselves and searched for everything on their own. They never received any assistance from anybody. One SMME director said *"I never had training done before, when I go to them I just observe how they do it and I pick up from there."* The same SMME director further explains *"When we go to deliver, we ask them questions and we see what they do and we ask them why you do it like this, and thus gain some knowledge to do the same."*

Lack of capacity building among waste collectors and SMMEs involved in recycling activities is a big challenge. Recycling is a specialized field which cannot be undertaken without proper training. Waste collectors should know what to collect and what not to collect. Lack of training results in people collecting and mixing items which should not be mixed. Recycling companies have strict specification of what they need and how it should be processed so that it does not get rejected at the market.

2. Small business premises

The issue of small business premises was a major problem cited by SMMEs. Their problem is that the space is small, they cannot accommodate all their material, they are forced to process and dispatch material in order to open more space for the incoming material. Though the premises are not large enough for the business they have to pay exorbitant rentals for these premises. This does not allow them to grow as businesses. They cannot expand the business if they want to recycle more materials or want to add other items to recycle. The SMME director

states *"the building I am using is very small and the yard. I think I need a bigger building and to get a bigger building in Kokstad is a challenge, the rent is too high and you can't afford it."*

For SMMEs the inadequate business premises retards their growth and development. They remain at the same level for many years and they keep moving from this business premise to the next in search of affordable and convenient premises.

3. The market forces

The recycling SMMEs are confronted by the same business challenges that other businesses have to grapple with. Market forces can sometimes push a business to a stage where it does not have any option but to close or diversify. There are times when business is not good and there are times when recyclables shrink. One SMME director said *"I started recycling with steel industry and it carried on until 2008 in June when the recession started hitting us. I thought there is too much cardboard to recover in the landfill site…so I started collecting cardboards and baling them and that is how I started my recycling."*

This SMME director was compelled by the market forces to diversify his business because business conditions were not favourable anymore. These are some of the decisions that businesses have to take in order to survive in the market. Another SMME director has this to say *"when prices drop for two weeks and when the rand/dollar was not good… we did not send any stuff away, that is why we have a stock pile now*."

4. Inadequacy of waste pickers

The issue of the inadequacy of waste pickers was raised by both the directors of SMMEs and waste pickers. SMME directors are of the view that they have few people collecting for them because of lack of resources and business premises. The waste pickers believe that their numbers are too low and therefore they cannot cope with the volume of waste they have to deal with. As a result of the inadequacy of waste collectors many recyclables are not collected and end up being buried in the landfill site. One participant said *"Icebo linye leli lokuba kwande abantu aba bachola izinto ezininzi."[There is only one solution and it is to increase the waste pickers so that more items can be collected]*. One SMME director mentioned that *"well I cannot cope with that number of people… I do not have enough people to collect for me."*

5. Lack of support networks

The SMME directors particularly feel that there is no support for them whatsoever. They believe that there is no effort from government to support them and assist them as they strive to grow their businesses. There is no financial support, there is no advice, there is no mentoring and there is no training. One SMME director said he would like to get a compressing machine and *"has approached a company in Durban called RS Scrap metal and trading as AfroIndia and they said they would help us provided we get a 50% deposit and the machine is quite expensive around R140 000 …I could not afford it. As soon as I get some help somewhere, I would invest in one machine."*

When commenting about the government support the same SMME director said *"the problem is we do not know the correct channels, and the procedures, we do not know where to go to, we don't know whether there is a branch in Kokstad."* Another SMME director said *"If I need to know something and I am dealing with Mondi who is not available, then I have to fend for myself how to go about it. There is no model who will give you advice."*

Support and network systems are a crucial factor in the small business sector. Le Roux and Strydom (2006, p.254) capture this challenge aptly when they state "all business need to have connections with the broader market and macro environment to assist them in gathering resources and marketing their products and services in order to survive. Networking is a useful tool in terms of 'know-how' and 'know-who' and allows the small business owner to benefit from external relationships, which is critical in terms of business success."

6. The SMMEs vs waste picker relationships

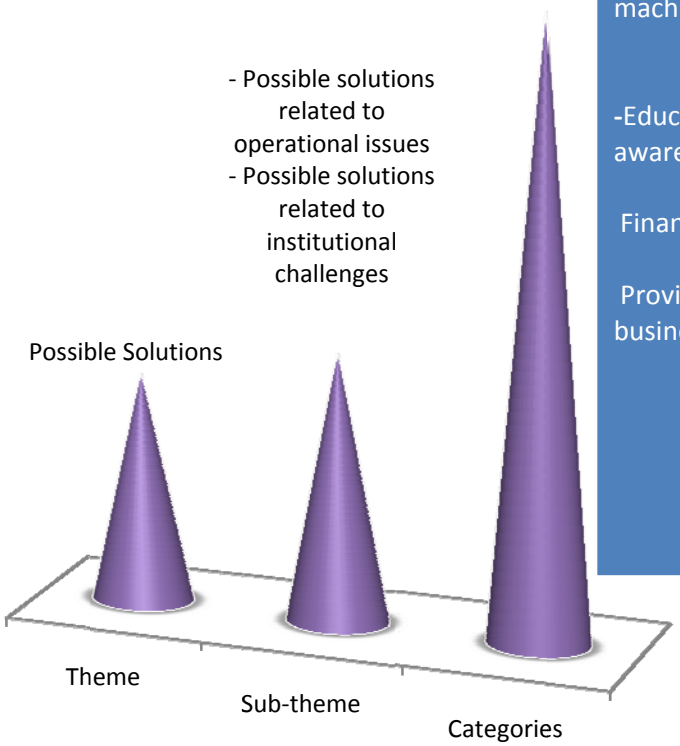
The relationship between the SMMEs and the waste pickers is not clear. Waste pickers regard themselves as being employed and the recycling companies are regarded as employers. They expect the same benefits that employees get from employers. That is why they suggest under 4.2.5.1 (2) that they should be provided with protective clothing like all other employees. The SMMEs on the other hand do not regard themselves as employers. They do not have employments contracts with waste pickers. Waste pickers are paid strictly on commission and as per quantities of recyclables collected. Waste pickers sell their recyclables to recycling SMMEs and get paid according to the quantities of recyclables sold. Waste pickers are not controlled and

managed by SMMEs in an employee-employer relationship. When waste pickers are not at work and therefore cannot sell any materials to the SMMEs on the day of the collection, the SMMEs cannot do anything. They (the SMMEs) accept whatever amount of work is produced and offered to them for sale.

SMME and waste picker relationships are not governed by the Basic Conditions of Employment Act (1997) or the Labour relations Act (1995). There are no employment contracts that regulate the pickers' relations with the SMMEs they purport to be their employees. The employment contracts, if they existed, could make provision for hours of work, the issue of overtime, meal intervals and rest periods, leave and other conditions of employment that are regulated by the Act. In reality they are the small SMMEs themselves that belong to the informal sector like the street traders.

4.2.6 Theme six: Possible solutions

Figure 4.10: Theme six



- Provision of health and safety procedures

Strengthen security measures

Construction of sheds

Community outreach programs

Acquisition of equipment and machinery

-Education and awareness programs

Financial support

Provision of suitable business premises

Under this theme, there were a number of possible solutions to challenges faced that were suggested. These possible solutions were consolidated into two sub-themes. These sub-themes are: (1) Possible solutions related to operational issues and (2) Possible solutions pertaining to institutional challenges. Both of these sub-themes will be unpacked in the discussion that follows.

4.2.6.1 Possible solutions related to operational issues

The focus of this sub-theme is on possible solutions that have been suggested to problems that were regarded as of an operational nature. These solutions were condensed into five categories which were as follows: (1) Provision of health and safety procedures, (2) Strengthen security measures, (3) Construction of sheds, (4) Community outreach programs and (5) Acquisition of equipment and machinery. These categories will now be discussed one by one.

1. Provision of health and safety procedures

Waste collectors are concerned about their safety. Because they want to ensure that they are safe in their work there are measures and safety precautions that they have taken. One participant reported that *"sithatha amaplastics sijijele esandleni ube sele uchola ke ngoku. Xa uhlala phantsi ukhulule. Uphinde uchole enye xa usiya enkunkumeni ufase." [We take plastics and wrap our hands and then pick up waste. When you stop working you unwrap your hands. When you start working again you pick up another plastic and wrap your hands again]*. Waste collectors are not happy about the fact that their health and safety issues have been neglected. They said they also want to be safe when at work. One participant said *"sifuna ukuthi sivikeleke xa siphaya e folly (landfill site). Singakwazi ukulimala ngamabhotile. Ukuthi singacholi izifo ezithile apha ezandleni."[We want to be protected when we are at the landfill site, so that we don't get injured by bottles, we also do not want to get diseases because we are exposed.]*

It is out of their concern with their health and safety matters that waste collectors are proposing that they be provided with protective clothing. One participant said *"ingathi singafumana izihlangu eziqinileyo ezingamaquze, kube ngamagloves, kube zizinto esingavala ngazo iimpumlo."[It would be better if we get strong boots, hand gloves and masks]*

Provision of occupational health and safety in South Africa is governed by the Act of Parliament known as Occupational Health and Safety Act no 85 of 1993. This Act is comprehensive enough to ensure that workers are safe at the work place. For example, section 9 of the Act makes provision for the general duties of employers and self-employed persons to persons other than their employees. This means that although waste collectors are not employees of any employer, because they work in an environment that requires personal protective clothing they should have protective clothing, and if they cannot get personal protective clothing they should not be allowed inside the landfill site. Personal protective clothing includes items like gloves, masks, overalls, rain suits, goggles, safety boots, and gumboots.

2. Strengthen security measures

This possible solution was suggested because of the theft of material both at the landfill site and also at the depots where SMMEs process the recyclables. One SMME director suggested that he is trying by all means to strengthen security at his yard. He also suggested that *"we are looking at employing people (the security guards) and we have just added some security lights in our premises."*

Waste pickers reported theft at the landfill site where they steal each other's materials. They have suggested that their employers could meet with them and try to resolve this issue through amicable discussion. One participant suggests that "*mna tata ndibona ukuba kungadityaniswa abantu kuhlaliwe phantsi. U SMME1 adibanise abakhe no SMME2 adibanise abakhe kuhlaliwe phantsi."[I feel it would be better if a meeting could be held and the matter is discussed by all involved. SMME1 could convene a meeting with his group and SMME2 could also convene a meeting with his group so as to resolve the matter.]* Waste pickers reported that their recyclables are stolen inside the landfill site. This should not have been the case since landfill sites have, by law, to be secured and well fenced. The Draft Municipal Waste Sector Plan (2011) again emphasizes the fact that landfill sites should be well secured. The Draft Municipal Waste Sector Plan (2011, p.17) stipulates that "Stricter access control to landfills and improved security measures must be instituted at landfills to discourage salvaging. The minimum requirements for landfills are clear on access control measures including gate control; operating hours and, fencing requirements."

3. Construction of sheds

In an effort to resolve the issue of theft of material at the landfill site, waste collectors have proposed that sheds should be built. These sheds should be built separately and this means there must be a shed for materials belonging to each company. If this is done material belonging to SMME1 will be locked in his shed and materials belonging to SMME2 should be locked separately in his shed. According to waste collectors this would solve the theft issue. One participant states *"Ndicinga ukuba mna xa kunokubakhona ished ibe nezikhiya. Akukho mntu unako ukungena phaya ngaphakathi."[I think if there can be a lockable shed with keys there can be no unauthorized person entering the locked shed]*. Although waste collectors proposed that a shed be constructed to keep their material safe, the purpose of this shed can be accommodated in the Materials Recovery Facility (MRF) discussed under 4.2.4.1 above.

4. Community outreach programs

One SMME director reported that there are times when recyclable materials become exhausted. This SMME specializes in recycling steel. He suggested that community outreach programs do help him when materials are scarce. He said he goes out through Kokstad in search of steel. He also reported that some community members know him and phone him to advise him that there is material that needs be fetched. He states *"We try and go to the community and get old cars and old stuff dumped and get our people to clear…whatever we can find to keep it going."*

5. Acquisition of equipment and machinery

The SMMEs are struggling to get the necessary equipment and machinery that they need to improve their businesses. One SMME director said he acquired other equipment and machinery through a bank loan and is now still paying off that loan. He cannot afford to negotiate another loan. He suggested that it would be better if the government would rescue them. He said *"It would not be bad if the government or municipality can fund us on things like equipment."*Another SMME director was confident that he can still make efforts to acquire the machines. He said *"We are trying to get the machine but the price of the machine is exorbitant and we still have an existing loan but we are trying to get it."* For any recycling program to function efficiently it requires some specialized equipment and machinery. Depending on the size and nature of recycling operations purchasing some machinery may be prioritized over

others. Pichtel (2005) and Tchobanoglous et al (1993) suggest that recycling companies need the following equipment and machines: bins; containers; forklifts; front-end loaders; manulifts; skid steer loader; steam cleaner; vacuum or sweeper or magnetic pickups; yard tractors; conveyors; scales; balers; shredders; and glass crusher. The equipment and machines are indeed very expensive and small SMMEs may not afford them without subsidies.

4.2.6.2 Possible solutions pertaining to institutional challenges

Research participants proposed some solutions related to institutional challenges. These solutions were reduced to three categories which were as follows: (1) Education and awareness programs, (2) Financial support and (3) Provision of suitable business premises. Each category will be discussed separately.

1. Education and awareness programs

Both SMMEs and waste collectors suggested that many of the problems encountered in the recycling industry can be solved by conducting education and awareness programs. These programs can focus on what recycling is all about, why is it important, how it can be improved. The major issue is how we can reduce the amount of waste that is dumped in the landfill site so that more and more recyclables are diverted from the landfill site. One SMME director suggested that the community needs be educated so that they can start to do at source recycling. This helps to prevent the generation of waste. The SMME director proposes "*starting to educate the people about recycling, separating the plastics, separating the cardboards, separating the bottles, and getting the people to learn about recycling. Other things do not necessarily have to be thrown away, that which cannot be recycled can be thrown away."* One research participant states that *"kuno doti obalulekileyo kuno doti ongabalulekanga… lo doti ungabalulekanga ungene phantsi emgodini, lo ubalulekileyo ube sezandleni zethu."[There is significant waste and there is insignificant waste. The insignificant waste is deposited into the landfill site and the significant waste is handled by us.]*

Education and awareness programs are of fundamental significance if recycling programs are going to be successful. Zarillo and Long (1993, p.9.2) express this education and awareness issue most clearly when they state that "encouraging the public to make informed solid waste management decisions helps solid waste managers overcome barriers to program

implementation, to mobilize communication networks within the community." According to Wolfe (1993) there is a need, in the process of designing community education and awareness programs, to identify effective communication strategies and community participation programs. The National Domestic Waste Collection Standards (2010) mandates municipalities to create awareness amongst households about (i) the types of waste collection services provided, (ii) separation at source - the removal of recyclables and re-usable waste from the general household waste as well as (iii) the potential for composting of some of the household waste and the benefit of such to the household.

2. Financial support

The SMME directors were concerned about lack of financial support. They indicated that they had received no financial support ever since they started their businesses. They managed to get loans through the banks but they cannot afford to increase those loans to satisfy more of their financial needs. The equipment and machines they need are very expensive and as a result of that they do not have these machines because they cannot afford them. They have pinned their hopes now on the government and the municipality to assist them to realize their financial obligations. One SMME director believes that *"it would not be bad if the government or municipality can fund us on things like equipment and the building."*

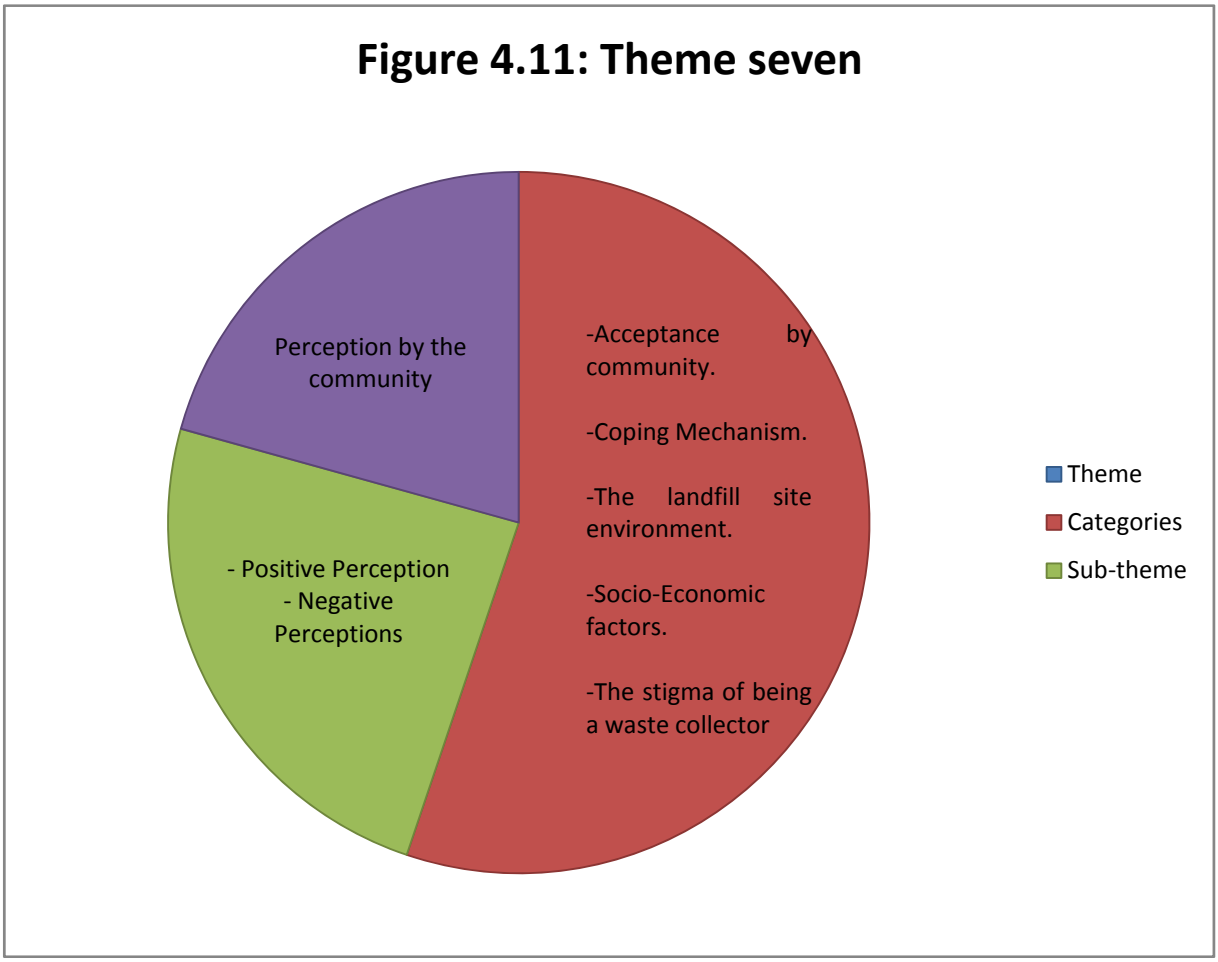
The need for financial support to SMMEs cannot be over-emphasized. The government is aware of these challenges and has developed a number of policies, plans, schemes and agencies to provide financial support to SMMEs. The Integrated Strategy on the Promotion of Entrepreneurship and Small Enterprises (2005) states that "the DTI offers a wide range of products and services comprising loans, and incentive grants that play an important role in enabling access to finance for small enterprises through the following institutions: the South African Micro-Finance Apex Fund (Samaf), Khula Enterprise Finance Limited, and the National Empowerment Fund (NEF)." But this financial assistance seems non-accessible to SMMEs. The Integrated Strategy on the Promotion of Entrepreneurship and Small Enterprises (2005) further states that "certain banks have partnered with Khula Enterprise Finance limited to provide small business finance under the Khula Credit Guarantee Scheme." In spite of all these policies and finance schemes the SMMEs still complain about lack of financial support from government.

3. Provision of suitable business premises

The issue of small business premises was raised by the SMME directors who stated that as a result of lack of business space they cannot develop their businesses. Before they can dispatch their materials they need to sort them into their different grades and then compress and bale others. The proposed solution is to enlist government support. One SMME director feels that *"with a bigger building, a lot of the problems can be solved, then we have more space to work in, that means you can do all the work that you want to do."*

The issue of business premises still haunts SMMEs in South Africa. Moolman (1998) mentions the issue of buildings and physical facilities as a serious challenge affecting SMMEs. In South Africa there is a great need for suitable, modern and appropriate business premises and buildings. This is a problem of black residential and remote areas where investors are still reluctant to invest in business infrastructure.

4.2.7 Theme seven: Perception by the community



Research participants as well as SMMEs expressed their views regarding the manner in which their involvement in recycling activities is being perceived by the community. There were both positive and negative perceptions displayed by the community. Mostly this theme covers the experiences of research participants since this was one of the objectives of the study. This theme has been divided in two components or sub-themes. The two sub-themes are (1) Positive perceptions and (2) Negative perceptions. The two sub-themes are unpacked below.

4.2.7.1 Positive perceptions

Apart from the negative perceptions, there were positive responses received from the community. Positive perceptions were consolidated into two categories. The two categories are (1) Acceptance by the community and (2) Coping mechanisms. These categories are discussed below.

1. Acceptance by the community

The work that is done by the recycling companies is welcome by the Kokstad community. Recycling is regarded as an act of cleaning the environment. One SMME has placed its waste collectors inside the premises of some businesses in Kokstad so that they can collect and pick up recyclables before these are taken to the landfill site. This promotes the idea of at source recycling. One SMME director states that "*they welcome me in all the shops, because they know instead of throwing the dirt away, the cardboards and plastic bottles, there is a company coming to collect them.*" The community has accepted the project and they are willing to assist recyclers to collect as much steel as possible. The director of one SMME said "*it helps them like if they do not have transport and would like to remove some dirt, they phone us and ask us to come and remove it.*"

2. Coping mechanisms

Coping mechanism has been included under positive perceptions because when waste collectors are being stigmatized because of their work they find positive ways of coping with the situation. They do not become despondent, hopeless and helpless but they find strength and power to handle the matter. They do not respond by hatred but by conciliation and a positive attitude. One participant said "*into enjalo ndiye ndingayithathi ndiyifake entliziyweni ngoba ndizixelela ukuthi*

andidli efolly (landfill site). Mna ndiyayazi into endiye kuyenza phaya. Ndibaxelele nabanye ndithi musani ukuphatheka kabi."[I do not keep negative remarks in my heart because I know I do not eat at the landfill site. I am fully aware of why I am at the landfill site. I also advise others never to feel bad about negative remarks.]

4.2.7.2 Negative perceptions

In this sub-theme participants particularly expressed their experiences of negative perceptions by the community. There are three categories that have been identified under this sub-theme. These categories are: (1) The landfill site environment, (2) Socio-economic factors and (3) The stigma of being a waste collector. The following discussion will focus on each of the categories.

1. The landfill site environment

Participants have attributed some of the negative perceptions they have received to the landfill site environment. The landfill site is an unclean environment and it is always smelling. Because of the environment in which they work, participants feel that the community (especially the Shayamoya community) undermines them. They are treated as mentally disturbed. One participant feels *"ngokuthi naku sisedotini, basithatha ngokuthi sihlala edotini. Kanti bake badlule naphaya emgwaqweni bathi naba abantu balapha efolly."[Now that we work with waste, they treat us as if we live in the landfill site. Others pass nearby this place and they say here are the people belonging to the landfill site.]*

The Kokstad landfill site is old and was established before 1989 when the first legislation dealing with landfill site permits was promulgated. Since then this landfill site is still not legally permitted to operate. The conditions at the landfill site attest to the fact that it is still not legal and therefore does not meet all the requirements. The landfill site is associated with a filthy environment and a place where rotten food and other rubbish are dumped. Bad conditions such as bad smells, uncovered waste and plastics hung over the fence still prevail. Another factor is that scavengers used to enter the landfill site and pick up food for household consumption before control measures were instituted. These conditions seemingly are still the basis on which community members form their perceptions of waste collectors.

2. The socio-economic factors

Participants associate some of the negativity with the fact that they stay in Bhambai which is the informal settlement. They argue that Shayamoya residents are the ones humiliating them and they are being humiliated because they stay in Bhambai which is an informal settlement and Shayamoya is a low cost housing residential area. Not all residents of Bhambai work at the landfill site but those Bhambai residents who do not work in the landfill site do not humiliate landfill site workers. That is why participants attribute this negativity to the fact that they reside in Bhambai. One participant said *"Nemisebenzi le isetyenzwayo xa ungowase Bhambayi bavele bakuxelele ukuba hamba uyokusebenza efolly. Ngeke ulunge apha uhlangane nathi. Abantu base Shayamoya xa usithi ungowase Bhambai hayi uyimoshile. Ungade utshintshe nendawo ohlala kuyo uthi ungowase lokishini."[Even when it comes to jobs, when you are from Bhambayi, they just tell you to go and work at the landfill site because they associate Bhambayi with landfill site. They tell you that they cannot mix with you. To the Shayamoya people when you say you live in Bhambai you are stigmatized and nothing positive will come your way. You can even lie to them and change your place of residence and say you live in the township.]*

The socio-economic status of the Bhambai community generally determines how other communities perceive them. Since Bhambai is an informal settlement without basic services like water, water born sanitation, electricity and housing other communities regard them as belonging to a lower social class and scavenging, even if it is done for income generation purposes, is still associated with lower socio-economic groups. Those who live in residential areas with basic services regard themselves as better than those living in an informal settlement. Middleton (2008) states that scavenging of municipal waste is usually done by people belonging to the poorest sectors of the economy.

3. The stigma of being a waste picker

Participants reported very sad stories about the manner in which they are treated by other communities. They also cite Shayamoya High School learners as being amongst those residents that humiliate them. They are objects of ridicule. Sometimes they feel they are regarded as psychotics. They are people that should be avoided, people should not mix with them, their children should not play with others children from other areas. One participant states that *"Mna*

ndihlala apha e Shayamoya, ndivele ndithi ndiza babe bendibheka ezinyaweni, bethufa, kangangoba nje ngoku nendlela sendide ndiyayilahla ndiphuma ngabo potshot ngoba kaloku ndiyesaba. Babodwa abathi nanku lo udla efolly. Ayikho nje into abangayithethi. Nabantwana bam nje sebethathwa nje. Noba mhlawumbi bayadlala nabanye abantwana kuthiwe hayi wena suka apha umama wakho uyafotsha phaya, udla lee efolly umama wakho."[I stay in Shayamoya (a low cost residential area not far from the landfill site), when they see me coming, they look at my feet, spitting down, to such an extent that I now change my route, because I am afraid of the community members. Others say here is this one who gets food from the landfill site. They say all nasty remarks. Even my children get this humiliation. Even if they are just playing with other children, they just say no go away your mother is scavenging and your mother eats from the landfill site.]. One participant said *"abanye bayasithuka. Bedlula nje ngendlela. Abanye nje basithuke ngaphandle kwesizathu. Babize nentlamba engafuneki."[Others just insult us, when they pass the landfill site, others insult us without any reason, just throwing insults.]*

Another participant has this to say *"Abantwana besikolo baye bakhwaze bathi masibajulele amathambo abolileyo, nekhaphetshu ebolileyo bazozidla, babize igama lomntu ke kuloo nto."[When school learners pass nearby the landfill site they just shout at us saying throw me rotten bones and rotten cabbage I want to eat them and they just call people by their names]*

Viewing it from the perspective of HIV/AIDS, van Dyk (2008, p.131) contends that "stigma and discrimination increase people's vulnerability, isolate them, deprive them of their basic human rights…and worsen the impact of infection." Stigma and discrimination emanating from waste collection are the main reasons why waste collectors are humiliated, despised and insulted thereby violating their human rights (ibid). van Dyk (2008) also mention the fact that stigma and discrimination 'emerge from and reinforce other stereotypes, prejudices and social inequalities.' Something be needs done, particularly by community leaders and the municipality, because these attitudes violate others' basic human rights. No South African should experience this repugnant violation of his/her human rights solely on the basis of his/her lower socio-economic status that is not his/her own creation. Concerted efforts should be made by both community leaders and the municipality to create more awareness about issues of human rights violations especially now that this matter has surfaced.

As has been mentioned earlier, waste picking is viewed with hostility and a desire for repression (Medina, 2007). Waste picking is regarded as inhuman and waste pickers are stigmatized, perceived as a nuisance to society and as not deserving any respect (ibid). This is due to the fact that waste pickers are usually people with low status is society, poor, unemployed, dirty, very low educational levels, living in squatter conditions or on the street (Medina, 2007). Waste pickers are often exploited by waste recyclers paying them very low prices for their recyclables. Very low wages make their conditions deteriorate rather than improve.

4.3 CONCLUSION

Basically this chapter dealt with the discussion of themes, sub-themes and categories as identified from the analysis of the interviews. There were seven themes that were unpacked and these themes were entry into recycling, materials collected, general reflection on recycling, reduction of waste dumped at the landfill site, challenges faced by recyclers, possible solutions and lastly perception by the community. Sub-themes were also identified for each theme. The sub-themes were also discussed in relation to their categories. Verbatim narratives were included to substantiate the claims made. Xhosa verbatim narratives were interpreted into English to enable non-Xhosa readers to understand the discussion. Themes, sub-themes and categories were presented in the form of charts.

CHAPTER 5

MAIN FINDINGS, RECOMMENDATIONS AND CONCLUSION

5.1 MAIN FINDINGS

The discussion of the themes, sub-themes and categories in the previous chapter led to the identification of a number of findings summarized below:

- Waste pickers experience non-cooperation from the landfill site officials. These officials include the security guards, machine operators and other municipal officials assisting in the operation. While pickers are still busy picking up their recyclables machine operators move their machines to the same waste and push it away thereby dispossessing waste pickers of their recyclables. This action leads to more recyclables being buried into the soil instead of being recovered for recycling purposes. Non-cooperation means that team members are unable to support and complement each other for the achievement of a specific objective (Lombard, 1991). The result becomes competitive with a win-lose situation.

- Apart from the usual recyclables that are targeted by waste pickers, they (waste pickers) identify other valuable resources which to them become attractive either to be sold in a separate market or to be used for personal household needs. These are, inter alia, firewood, two liter milk bottles, clothes and other commodities. The most critical resource they complained about was firewood. They said since they live in an informal settlement without basic services like electricity, they use firewood as an energy resource. Two liter bottles were sold in another separate market and the collectors get an additional income from them while clothing and other items were used for personal household needs. Recycling programs recover a wide range of valuable products. This practice helps because when the market declines in one product, another more profitable product can be used to keep the business operating (Pichtel, 2005). Crafts can also be made from recycled materials and these initiatives have the potential to stimulate small business development in general (The Waste Sector Plan, 2011).

- Waste collectors do not use any personal protective equipment (PPE) and are therefore exposed to health and safety risks. This is due to the fact that no one, between the Greater Kokstad Municipality and the recycling SMMEs for whom they collect, regards him/herself as being responsible for providing waste collectors with PPE. The health and safety of landfill site workers is very critical because workers are likely to get injured or catch some illnesses while in the landfill site (Holmes, Singh & Theodore, 1993). PPE includes protection for the eyes, feet, hands, hearing, respiratory systems and from falls and slips within the work environment (ibid). The Occupational Health and Safety Act (1993) states that the employer shall ensure that persons (including those that are not his/her employees) who may be affected by his operations are not exposed to health and safety hazards.

- Both waste pickers and recycling SMMEs reported a serious problem of theft of their recyclables. Waste pickers collect for some days and pack and leave their material in the landfill site until the day of loading by the relevant SMME. When they have left for home thieves steal some of their recyclables and sell them. One SMME director, the one whose premises were not properly fenced, complained about the theft of his steel at and about people coming to sell to him the steel he had already paid for.

- SMMEs fend for themselves. There is no support of whatever nature coming from government or the private sector. There is no training provided, they lack operating equipment and critical machines, they do not have proper, spacious business premises and lastly there is no financial support to sustain their businesses. One SMME director reported that he is on his own in his business. The worst part of it is that they have not sought any assistance because they have no networks and they have no idea who to contact for whatever assistance they need. They do not know that there is a Local Economic Development office in the Greater Kokstad Municipality which they can approach for advice. But they have managed to secure some loans from the bank which they are still paying off. Herrington, Kew and Kew (2008) acknowledge the fact that government still has challenges regarding the provision of financial support, education and training, business advice as well as the necessary infrastructure to small businesses.

- Waste pickers concentrate on just a few of the recyclables while others are left behind because the collectors are overwhelmed by the amount of recyclables they have to deal with. There is so much to collect yet there are so few pickers and therefore they do not cope with the recyclables that they have to recover. They go as far as their energy and strength allows and leave behind whatever they cannot afford to collect. The main recyclables they collect are steel, cans, plastic bottles, cardboards, paper, copper and aluminum. Previously, waste pickers and recycling SMMEs identified a number of challenges that hamper their recycling initiatives. Bagchi (2004) and Pichtel (2005) state that most of the materials that are part of the waste stream are recyclables and, obviously, when challenges such as the shortage of waste collectors, lack of equipment and machinery and small business premises exist, recyclables are still bound to be dumped in the landfill site.

- Waste pickers as well as recycling SMME directors started recycling activities while they were unemployed. Some waste pickers started by being collectors and as time went on recycling SMMEs recruited them to collect recyclables on their behalf. This was the time when they began to get involved in income generating activities in the landfill site. Waste picking in landfill sites is a global phenomenon (McMillen, 1993). It is a primary means of recovering valuable resources from the landfill site. The Draft Municipal Waste Sector Plan (2011) contends that the problem of scavenging in landfill sites can only be resolved once all recyclables are removed from the waste stream. The Waste Sector Plan (2011) further states that scavengers should assist in the waste management process but they need to be organized, supported and trained so that the recovery of recyclables can be properly controlled and coordinated.

- Recycling activities serve as a source of income to waste pickers. They expressed their happiness and joy at the work they do since it offers them an income after a long period of unemployment. They acknowledged that it is not a satisfactory income but provides them with a livelihood since they are able to buy household commodities including groceries and school needs for children. They overwhelmingly said that it is better than being unemployed. According to Cheremisinoff and Ferrante (1992) recycling creates employment opportunities for people who are unemployed. The (NWMS, 2010) reports

that there are about 90 000 jobs which exist in the recycling industry. The NWMSISA (2005) recognizes that waste collection is an income generation activity for the poor people in South Africa. A number of unemployed families make a living through waste recovery in landfill sites (ibid).

- Waste pickers are being stigmatized and discriminated against as a result of the work they do. Community members, including school learners from neighbouring residential areas, undermine, humiliate, ridicule and insult them by making derogatory remarks reminiscent of the stigma and discrimination directed to people of a certain group. This may be due to the fact that almost all waste collectors reside at Bhambai which is an informal area lacking basic services such as electricity, water, housing and others. Stigma and discrimination are a product of certain stereotypes and prejudices which make people look down upon others (van Dyk, 2008).

- Both directors of SMMEs interviewed support the idea of at source recycling because it is more likely to lead to the collection of recyclables that are not contaminated. Sometimes recyclable materials get contaminated when they are not separated at source. Once they are contaminated, recyclables are useless since they are rejected by recyclers. SMMEs favour at source separation. At source separation means separating waste at the point of generation, placing it in different containers and removing it separately so as to avoid contamination (Tchobanoglous et al, 1993). Separated waste can be transported to the drop-off center, or buy-back center or the Materials Recovery Facility (MRF) for further sorting into various items.

5.2 RECOMMENDATIONS

There are some recommendations which can be drawn from the study as a whole and these recommendations are as follows:

- That the Greater Kokstad Municipality should strengthen its Local Economic Development unit (LED) so that it can provide business support and advice to all its SMMEs. The challenge of lack of business support and advice to small businesses in South Africa is common and is well documented even by government itself. Small businesses are, to a large extent, not prioritized in spite of the fact that they provide a

large percentage of the employment opportunities and in turn contribute to economic growth.

- Linked to the above, since these recycling SMMEs provide employment to unemployed people, the municipality should provide them with the needed support be it in the form of a subsidy or the identification of suitable business premises at an affordable price.

- Waste pickers should be registered as part of an informal economy and they should form a cooperative with a formal structure. This will help them to bargain for better benefits from the SMMEs they collect for as well as to gain more recognition from the government especially the local municipality. When the formal structure like the cooperative is in place, coordination of recycling in GKM will improve. Proper coordination will also ensure that waste pickers get their personal protective equipment which they should use whenever they are in the landfill site because it is a legal requirement that workers in the landfill site environment should be protected from occupational risks.

- The feasibility of introducing at source separation should be assessed first. This is because there are serious dynamics and implications that need be explored first before this program is introduced. The modus operandi should be ascertained prior to the commencement of this significant program which should be introduced as per government policy and regulations. The feasibility study proposed should also include Materials Recovery Facility (MRF). There are various options which include buy-back centers or drop-off centers. The exact methodology to be used should be determined by a study.

- An education and awareness program should be introduced focusing on three issues. Firstly it must focus on source separation to educate households about the importance of source separation and how to implement source separation. Secondly it should focus on recycling in general and what is involved in recycling programs as well as who can recycle and how. Thirdly the program should target all GKM communities and the focus should be on waste management in general, the do’s and don’ts and how communities behave in response to waste management challenges.

- Other valuable resources should also be recovered from the waste stream. Waste collectors were not happy about restrictions placed on the waste resources that could be recovered. The idea is to recover as much of the resources as possible from the waste stream so as to reduce the amount of waste that goes into the landfill site. However there should be restrictions placed on the removal of material or items that will expose waste pickers, their households and the community to health and safety risks.

- The Greater Kokstad municipality should strengthen security at the landfill site. Waste collectors reported that their recyclables are stolen but there is a security company on site. This means that the issue of security in the landfill site is still a challenge that needs be attended to. If fencing is the challenge, the municipality should refurbish fencing around the landfill site to ensure stricter access control to the landfill.

- There are still recyclable materials that are not recovered from the waste stream. Reasons should be explored as to why these are not collected. If the current waste pickers or the recycling SMMEs do not possess the necessary capacity to recover these items, alternative measures should be taken to ensure that all recyclables are recovered. If the market is non-existent, assistance should be given to recycling SMMEs to identify a reliable market for as many recyclables as possible.

- The Greater Kokstad Municipality should ensure that government policy, legislation and regulations concerning waste management and the landfill site are adhered to in order to ensure compliance.

5.3 CONCLUSION

In conclusion this research study provided vital information regarding the practice of waste recycling within the Greater Kokstad Municipality. Waste recycling exists albeit in a small, fragmented manner and is fraught with numerous problems that need urgent attention if this business venture is to make any significant contribution to absorbing many unemployed people in the Greater Kokstad municipality. The government, including local government, needs to make concerted efforts to promote this sector of the economy. Lack of access to critical services like financial and business support, advice and mentoring continue to hamper the development

and economic growth of SMMEs. There is also an urgent need for educational and awareness programs on waste management and recycling in particular, targeting the community at large.

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