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UNIVERSITY OF THE WITWATERSRAND
FACULTY OF SCIENCE

SCHOOL OF GEOGRAPHY, ARCHAEOLOGY AND ENVIRONMENTAL STUDIES

DOCTOR OF PHILOSOPHY

ASSESSING THE IMPACTS OF URBANISATION ON LAND USE CHANGE IN ZAMBIA: A STUDY OF LUSAKA URBAN DISTRICT

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JUNE 2024

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ABSTRACT

Urbanisation is a multifaceted, transformative process and a significant global trend that has impacted societies, economies and the biophysical environment. The process of urbanisation results in various challenges as it comes with profound positive and negative effects especially for developing countries. Most countries face insurmountable urbanisation challenges as their governance processes, systems and institutions are ideally not designed to deal and cope with urbanisation processes. Lusaka urban district has been urbanising at a fast pace and, just like many developing cities in Sub-Saharan Africa, has faced various challenges. Urbanisation in Lusaka has led to shifts in urban land use, consequently posing both challenges and opportunities to urban residents. Hence, this study was an assessment of the impacts of urbanisation on land use change in Zambia, a study that was conducted in Lusaka urban district. The aim of the study was to assess the impacts of urbanisation and land use change on the urban poor and vulnerable people in Lusaka whose livelihoods have been historically dependent on land. The study further sought to establish how the urban poor and vulnerable people negotiate their rights to the city in socially and economically productive ways considering the government's policy on the economic growth and development of the city.

This study was guided by pragmatism, which is concerned with what works in solving the problem and, the solution to the problem. Pragmatism posits that the nature of knowledge is not static while knowledge generation is achieved using various methods. Mixed methods research approach was used to assess the impacts of urbanisation and land use change on urban residents in Lusaka district. Both qualitative and quantitative methods were used to collect, analyse, and interpret the study findings simultaneously. Remote sensing (from 1990-2020 for selected areas of Lusaka urban), document analysis, questionnaires, and semi-structured interviews were used as data collection tools. Probability sampling was used to come up with households while non-probability sampling was used for key respondents. A total of 922 households were drawn from the selected residential areas and 12 key respondents from ministries and agencies, Non-Governmental and Civil Society Organisations.

Qualitative data were analysed using themes and regular patterns derived from the study's naturally occurring and emerging themes to derive meaning and interpretation expressed using words and not numbers. To generate frequencies and percentages, quantitative data were analysed using excel and the Statistical Package for Social Sciences (SPSS). Remote sensed

imagery was analysed using ArcGIS 10.5. Documents such as maps, and policy documents were analysed for interpretation and meaning as they provided information on land use trends, management, and the regulations guiding the use and management of land in Zambia.

Theoretically, the study employed the Hoyt Sector model of urban growth and expansion to explain the outward expansion of Lusaka district along the major transportation arteries of the city. The Hoyt sector model explains land use patterns from independence (1964) up to recent times. Lusaka's initial development was along the major transportation artery, the British South African railway line and later, the major roads of the city. The Hoyt model also helps in explaining the location of residential areas and why industries are found in defined areas plus the role of the city's major transportation arteries. The critical urban theory was used to explain the rapid urbanisation of Lusaka city, the emerging shifts in urban land use, and the resultant impacts on urban citizens and their livelihoods. This theory does not conform to mainstream urbanisation theory that explains urbanisation in relation to urban population growth. It emphasises that urbanisation is multifaceted and dynamic, a continuous construction of urban knowledge made up of political, cultural, historical, environmental and economic organisation of any given city. Most importantly, this theory advocates for understanding and explaining of urbanisation in socially inclusive, sustainable and democratic ways.

The study findings revealed that Lusaka's urbanisation has been characterised by the expansion of the built-up area at the expense of other land use and land cover classes. This has resulted in the mushrooming and expansion of informal settlements, diminishing agricultural land, the conversion of grass, crop, and bare land into mixed urban land uses particularly settlements and commercial use. The changes in urban land use are driven by urban population growth, economic growth and development policies and processes, rural-urban migration and the consumerism behaviour characterising most urban residents. The findings further indicate that urbanisation has brought about opportunities and challenges for urban residents. Urbanisation has come with various economic opportunities such as the creation and improved access to various goods and services, employment opportunities, the global exchange and fusion of ideas, cultures, food, and entertainment. Negatively, urbanisation has exacerbated corruption, social injustice and inequality consequently affecting the urban poor who have historically depended on land for agriculture and livelihoods. It has also created the urban divide in urban areas where Lusaka is now composed of the haves and have not, the poor and affluent, informal and overcrowded settlements, and gated communities. Various forms of pollution are now rampant,

there's widespread environmental degradation resulting in environmental ills such as deforestation, climate change, and shortage of resources. These have presented insurmountable challenges for the achievement of sustainable urban development. Furthermore, the diminishing agricultural land is a huge challenge impacting urban food security and urban livelihoods. This is further making it difficult to achieve Sustainable Development Goals particularly SDG no.11 on sustainable and inclusive cities and Africa's Agenda 2063.

The study concludes that significant changes in land use have occurred to urban land in the Lusaka district attributed mainly to urbanisation processes and urban population increase. The changes have mainly been from bare, crop, and grassland to built-up for settlements and commercial purposes, and various ecosystem goods and services have been lost in the process. This has greatly affected the urban poor and vulnerable whose livelihoods depended on agriculture and as such, are struggling to cope with the developments. The study concludes that human settlements are a key driver of urban land use change in Lusaka district. The study recommends that policy formulation, implementation, monitoring, and evaluation be prioritised to sustainably develop the district and manage its land use. The study also recommends the need to involve all stakeholders in the entire process so that policies reflect their various needs. All these challenges pose as infringements to urban livelihoods that are particularly felt by the urban poor and vulnerable people living in Lusaka urban district.

The study contributes to the body of knowledge by providing insights into the impacts of urbanisation, land use change and management, urban population growth, urban food security, and urban livelihoods. These are all prerequisites to the achievement of SDGs particularly no.11 on sustainable cities and Africa's Agenda 2063, the blueprint for the continent's sustainable development. The study will provide insights that will help policy and decision makers and all concerned stakeholders in the re-planning of land use change in Lusaka district to allocate resources to where they are most needed. The study will help policy and decision makers to come up with environmentally sustainable land use and management policies that do not degrade the environment, expose and leave urban livelihoods vulnerable particularly the urban poor and vulnerable groups not just in Lusaka but in other Sub-Saharan African cities with similar but complex urban spatial landscapes.

KEY WORDS: Urbanisation, Land Use Change, Urban Population Growth, Urban Poor and Vulnerable, Land Power Relations, Rights to the City, Coping Strategies.

DECLARATION

I declare that *'Assessing the Impacts of Urbanisation on Land Use Change in Zambia: A Study of Lusaka Urban District'* is my own Work. It has not previously been submitted to the University of the Witwatersrand or any other University for any degree qualification or examination. This work has not plagiarised any published and unpublished works or materials and all sources and citations used in the text have been duly acknowledged as full references.

Full Name: Steriah Monica Simooya

Signed: _____ Date: 24.10.2024

DEDICATION

This work is dedicated to:

My dear friend and husband, Steven Bili Mudenda for his steadfast love and support throughout my academic journey and my life. May God bless you always.

My four beloved boys Maluba, Maleele, Mazuba, and Maimbo. This is my greatest sermon to you on the value of hard work in life. Tell you what? You can reach for the stars provided you work hard and smart. As long as you aim higher and stretch yourself to the limits, it is possible. Sorry for my absence and the pain it caused, I deeply share your pain. I love you and always will.

My late father Mr Geoffrey H. Simooya, thank you for believing in me and for urging me to reach for the stars. It's a pity you did not live to see this one come to pass. My mother, Kelina Violet Hamatanga, my brothers Taylor Simooya, Owen, and Winford Chamucisa and my two sisters Susan and Peggy Chamucisa.

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ACRONYMS

CBD	Central Business District
CBD	Convention on Biological Diversity
CSO	Central Statistics Office
CSO	Civil Society Organisations
CZM	Concentric Zone Model
CUT	Critical Urban Theory
GIS	Geographic Information System
GRZ	Government of the Republic of Zambia
KR	Key Respondents
LCC	Lusaka City Council
LPPA	Lusaka Provincial Planning Authority
LULCC	Land Use and Land Cover Change
LU/LUC	Land Use/Land Use Change
LWSC	Lusaka Water and Sewerage Company
MNM	Multiple Nuclei Model
NHIMA	National Health Insurance Scheme
NGOs	Non-Governmental Organisations
NRDC	Natural Resources Development College
RN	Respondent Number
RttC	Rights to the City
SDGs	Sustainable Development Goals
SSA	Sub-Saharan Africa
UN	United Nations
UN DESA	United Nations Department of Economic and Social Affairs
UNEP	United Nations Environmental Program
UNFCCC	United Nations Framework Convention on Climate Change
UNILUS	University of Lusaka
UNZA	The University of Zambia
UTH	University Teaching Hospital
ZAMSTATS	Zambia Statistics Agency
ZEMA	Zambia Environmental Management Agency

CHAPTER ONE

FRAMES OF REFERENCE

1.1 Background to the Study

Urbanisation, a transformative process, is a significant and multi-faceted global trend with profound impacts on societies, economies, and the environment (Brenner, 2018). According to (Nuissl & Siedentop, 2021), urbanisation has for a long time now, been a challenge for many countries around the world as the urbanisation process comes with and results in a lot of challenges and problems especially for the developing countries. Challenges arise because the governance processes, institutions and, systems that are in place are not designed and tailored to cope with the current urbanisation processes and the consequent challenges (Godfrey & Julien, 2005; Schmid, 2018).

Some of the major challenges that come with the urbanisation of cities include rapid urban population growth, exacerbation of social and economic inequalities within and between cities, increased energy consumption, pollution, waste generation, and pressure on natural resources such as land (Nuissl & Siedentop, 2021). Being a transformative process that shapes economies, societies, and environments, urbanisation equally offers opportunities and the potential to drive economic growth, improve living standards, foster cultural exchange, and address pressing urban challenges through sustainable and inclusive development (Oswin, 2018).

World over, cities are rapidly urbanising while urban populations are growing unprecedentedly, inevitably placing tremendous pressure on natural resources such as land (Steel, Van Noorloos, & Otsuki, 2019; Zoomers, Van Noorloos, Otsuki, Steel, & Van Westen, 2017). In the next decade, all regions world over are expected to become more urbanised with the United Nations (UN) projecting a further global urbanisation of cities from 56.2 percent to 60.4 percent by 2063 (UN-Habitat, 2020). Most urbanisation is expected to take place in the least developed regions of the world (OECD/UNECA/AfDB, 2022). Africa experiences the highest rate of urbanisation at 3.5 percent per annum, a rate that is expected to remain constant until 2050 (OECD/SWAC, 2020; OECD/UNECA/AfDB, 2022). Particularly, Zambia is experiencing rapid urbanisation where Lusaka city for instance, recorded an urbanisation rate of 4.7 percent between 2000 and 2010 (Hampwaye, Membele, & Namakando, 2020). More recent statistics

suggest that Zambia's urbanisation rate is at 58 percent, higher than that of Sub Saharan Africa at 55 percent (Chiwele, Lamson-Hall, & Wani, 2022).

Urbanisation, a significant global trend that has been accelerating over the past century, is closely linked to growing urban population and changes in urban land use (Nuissl & Siedentop, 2021). It is a process characterised by the conversion of land from its natural or rural or peri-urban state to urban uses such as residential, commercial, industrial, and infrastructure development. This process often leads to the loss of fertile agricultural land, deforestation, and changes in natural ecosystems (Hampwaye, Membele, & Namakando, 2020; Monde, Muchanga, & Mweemba, 2023; Monde, 2023). The expansion of urban areas often occurs through urban sprawl, characterized by low-density, decentralized development that consumes vast amounts of land (Simwanda, Murayama, & Ranagalage, 2020). Urbanization has been occurring throughout history, but its pace has significantly increased since the Industrial Revolution in the 18th and 19th centuries (Brenner, 2018; Brenner & Schmid, 2015).

Urbanisation, which makes up the crux of any structural organisation of a country's social and economic development, always involves the conversion of land use from non-urban to urban uses (Venables, 2018). While urbanisation is taking place everywhere, different regions and areas have experienced different outcomes or impacts (Collier & Venables, 2017). Notable impacts of urbanisation include social, cultural, economic, and environmental outcomes that range from rapid urban population growth, economic development, urban sprawl, the demand for more and better requisite services all the way to environmental degradation and disruption of the ecosystem (African Union Commission, 2011; Goonewardena, 2018; Hassan et al., 2016; Heimlich & Anderson, 2001; Hua, 2017; Lubowski, Plantinga, & Stavins, 2008; Nuissl & Siedentop, 2021).

Urbanization has social, cultural, and economic implications on urban residents around the world that are both positive and negative in nature (Foley et al., 2005; Harris & Ullman, 2020; Nuissl & Siedentop, 2021). Positive impacts of urbanisation include the provision of employment opportunities, better access to quality education, healthcare, and social services, cultural diversity, and improved living standards for many individuals (Monde, 2023). On the flipside however, rapid urbanization can also lead to challenges such as the depletion of agricultural land and forest encroachment, development of informal settlements, overcrowding and crime, inadequate housing, inequality, social exclusion, and strains on infrastructure and public services provision and delivery and, vulnerability of the urban poor people (Hampwaye et al., 2020; Lambin et al., 2001; Mekara, 2020; Moretti, 2014).

Monde et al. (2023) argue that urbanisation and the resultant urban land use changes have significant environmental consequences. The growing urban population and the conversion of land for urban use and development needs for instance can result in habitat loss, fragmentation of ecosystems, biodiversity loss, and disruption of natural water systems (Chungu & Dittgen, 2021; Collier & Venables, 2017; Hassan et al., 2016; Hunt, 2004). It also contributes to increased energy consumption due to increased demand by the growing urban population, pollution in its various forms (air, water, and soil), waste generation, and greenhouse gas emissions (Foley et al., 2005; Frélichová, 2014; Monde et al., 2023). According to Lambin, Geist, and Lepers (2003); Wang, Li, Zhang, Li, and Zhou (2018); Lambin et al. (2001), urbanisation and urban land use change can also to lead to global climate change and adverse weather conditions, droughts, heat waves, floods and, resource scarcity that can in turn lead to conflict and wars. The more people there are residing in a given locality, the higher the occurrence of these incidences and events.

Currently, over 55% of the world's population live in cities, with the United Nations further projecting a 10% increase by 2063 (UN, 2015). By 2050, an estimated 10.7 billion (i.e., more than 66 percent) of the global population is expected to live in cities (UN-DESA, 2018). According to UN-DESA (2018), the estimated three (3) billion people that were living in urban areas in 2003 *are expected* to rise to 5 billion by 2063. Arguably, the global urban population is growing at a faster pace than the total world population while cities are urbanising at unprecedented rates (UN-Habitat, 2020). This growth is exerting pressure on governments world over, to accommodate and provide requisite services to the emerging urban residents (Foley et al., 2005).

Urban population growth and urbanization, along with other factors such as economic development, rural-urban migration, and internal displacements, are putting pressure on the urban land ecosystem through various land use changes (Wang et al., 2018). Urbanisation and urban LUC activities may have long-term implications affecting urban residents especially the urban poor and vulnerable, urbanisation prospects, and urban areas' ability to support their growing populations (Camacho, Ruiz-Luna, & Berlanga-Robles, 2016; Foley et al., 2005). Shifts in urban land use, despite their immediate or short-term positive impacts on the local, regional and global economy, introduce the risk of undermining urban livelihoods and long-term sustainability thereby making urban residents particularly the poor, vulnerable to urban LUC (Camacho et al., 2016; Foley et al., 2005; Jew, 2016; Rockström et al., 2009).

With rapid urbanisation and the rise in human population, human-induced land use and land cover changes have subsequently formed an important aspect of the urban agenda (Home, 2021; Manda, Tallontire, & Dougill, 2019). As already mentioned, the growth in urbanisation and urban populations has contributed to urban injustices that foster various problems such as poverty, overcrowding in peri-urban areas, development of informal settlements or slums, massive urban land use changes, failure of governments to provide requisite services, and the reducing environmental quality. Much of contemporary urbanisation has been characterised as urban sprawl with social, economic and environmentally adverse effects (Brenner, 2018). The challenges of urbanisation are likely to grow thereby affecting the integrity and functioning of the land ecosystem at a global level (Camacho et al., 2016; Rockström et al., 2009).

Urbanisation, growing and increasing urban populations and, urban land use have become a subject of continued academic debates world over especially for the developing nations (Hampwaye et al., 2020; Hersperger, Grădinaru, & Siedentop, 2020; Home, 2021; Jehling & Thomas, 2016; Kironde, 2009). It is a huge concern globally thus leading to an increased demand for studies in urbanisation, urban land use change and the urban poor and vulnerable people's rights to the city (Brenner, 2016; Brenner, 2018; Collier & Venables, 2017). Empirical evidence suggests that the urbanisation process including the commodification of land is not unique to many of the cities around the world (Alemayehu, 2016; Cahya, Martini, & Kasikoen, 2018; Lombard & Rakodi, 2016; Nuissl & Siedentop, 2021). Aguda, Farinde, Adegboyega, and Olawole (2013) is of the view that world over, land has undergone tremendous transformations attributed mainly to urbanisation, industrialisation, and agriculturalisation sprawls. These transformations affect and undermine the socio-economic and cultural livelihoods of urban residents, the biophysical environment, and any sustainable urbanisation and economic development efforts.

1.1.1 Urbanisation and Urban Land Use Change in Africa and the Sub-Saharan Region.

According to UN-Habitat (2020); UN-DESA (2018), Africa, particularly SSA has one of the fastest-growing populations in the world. High fertility rates, declining mortality rates, and improvements in healthcare have contributed to the region's population growth (Venables, 2018). Additionally, rural-urban migration continues to play a crucial role in the urbanisation of cities as people move from rural areas to cities in search of better economic opportunities, education, and improved living standards. Swerts, Denis, and Mukhopadhyay (2018) argue that

in SSA, people move to urban areas that serve as hubs for economic activities and opportunities with the ultimate hope of better livelihoods. Cities attract investments, provide access to markets, and offer various and diverse job prospects in various sectors such as manufacturing, services such as telecommunications, education, health, and the informal economy (Bird, Montebruno, & Regan, 2017; Glaeser & Xiong, 2017). Rural dwellers mostly migrate to cities in hopes of finding employment and economic advancement for themselves and their extended families. All these factors when put together, contribute massively to urban population growth.

Africa's projected urbanisation is startling as the urban population is expected to triple in the next 30 years or so (Collier & Venables, 2017). The projected increase is equivalent to Europe and the USA's urban population combined. Venables (2018) also provides projections of the developing world's urban populations increase in the next 40 years at 2 billion people with largest proportion being in Africa and Asia. Countries across the Sub-Saharan African region are going through a period of rapid urbanisation while their urban landscapes are undergoing massive transformation necessitated by various land use changes (Olorunfemi, Olufayo, Fasinmirin, & Komolafe, 2022). Unfortunately, the Sub-Saharan African region's rapid urbanisation and urban population growth have come at a cost to the urbanites. An understanding of the urban population growth figures across the African landscape is imperative in any discourse of urbanisation and land use change in SSA countries.

Africa's urban population is growing rapidly; it increased from 27% in 1950 to 40% in 2015 (Hampwaye et al., 2020). According to the UN-Habitat (2020), Africa's urban populations are growing by an annual average of 3.6 percent. UN-DESA (2018) further projects a 66% increase by the year 2050 with rural-urban migrations accounting for most cities' urban population increase. Collier and Venables (2017) assert that by the year 2050, Asian and African cities will have an addition of one billion and, eight hundred million people to their urban populations respectively. In the actual sense, growing urban populations come with the increased demand for requisite goods and services including food, health and housing (Zoomers et al., 2017). This, in turn, places a demand on forestland resources that end up being cleared and converted to either agricultural or residential land in a bid to accommodate the urbanising and spatially extending city plus its growing population. Urbanisation has forced a large amount of forest and formerly agricultural land to be converted into urban use ,especially built-up spaces (Tacoli, McGranahan, & Satterthwaite, 2015). According to Hampwaye, Nel, and Rogerson (2007); Thuo (2013); OECD/UNECA/AfDB (2022), the reduction in agricultural land poses a serious threat to urban food security in the SSA cities especially.

Empirical evidence suggests that the development of SSA urban areas and cities plus the associated changes in urban land use are to a large extent driven by urbanisation (Kombe, 2005; Mujeyi, 2021; Ogechi, 2014; Simwanda et al., 2020; Tsheola & Makhudu, 2019; Van Leeuwen, Van de Kerkhof, & Van Leynseele, 2018). Various scholars have argued that the uncontrolled and mostly unplanned urbanisation and population growth have been major factors driving the growth of Africa's cities (Bird et al., 2017; Collier & Venables, 2017; Monde et al., 2023; Robinson, 2013; Roy, 2011; Simwanda et al., 2020; Tacoli et al., 2015). UN-Habitat (2020) also argues that the rapid urban population growth coupled with the uncontrolled and unplanned urbanisation of SSA cities has created social, economic, and environmental problems. This has further led to the development and proliferation of various social ills and problems including informal settlements, various forms of pollution, urban poverty and unemployment, limited access to basic public services, and land use changes (Rugadya, Obaikol, & Kamusiime, 2004; Simwanda, 2018; Southall, 2005; Tacoli et al., 2015; Thuo, 2013).

The rapid influx of people into cities puts significant strain on public services and utilities. According to Collier and Venables (2017), the increased demand for housing, water, sanitation, healthcare, and education services in SSA has exceeded the capacity of the existing infrastructure and institutions. As a result, service delivery in most of these urban areas is lagging behind population growth, leading to inadequate provision of essential services in many urban areas (Chungu & Dittgen, 2021; Kombe, 2005; Li & Siame, 2020; Monde, 2023). Urbanization of cities has furthermore contributed to increased motorization, leading to traffic congestion and air pollution. Monde (2023) further argues that the rise in the number of vehicles, coupled with inadequate urban planning and public transportation systems has resulted in gridlock and long commuting times. This not only affects the productivity and quality of life for residents but also contributes to air pollution and associated health issues.

Various studies conducted have further confirmed that the rapid urbanisation of Sub-Saharan cities has also given way to other socioeconomic and environmental problems (Kombe, 2005; Lombard & Rakodi, 2016; Mamabolo & Tsheola, 2017; Mandhu, Mulenga, & Mushinge, 2019; Muchadenyika, 2015; Simwanda & Murayama, 2018; Simwanda et al., 2020). These include environment degradation and the reduction in environmental quality overall, the threat to urban food security, climate change, internal displacements, the irreversible conversion of formerly agricultural and forest land into various urban uses such as industrial, commercial, and residential purposes. Simwanda and Murayama (2017) argue that all these have resulted in

human vulnerability emanating from poor environmental practices like indiscriminate waste disposal, land, air and water pollution, street vending, and most importantly, improper use of land for various unsuitable urban uses and purposes such as informal or unplanned settlements.

According to Chungu and Dittgen (2021) and Li and Siame (2020), there is a very close relationship between a country and or city's socioeconomic dynamics, its ecological environment, and the land use changes taking place. As cities urbanise, the construction of new infrastructure such as roads, bridges, utilities, and transportation networks becomes inevitable (Nuissl & Siedentop, 2021). These developments consume land and can lead to the displacement of communities, especially in cases where urban renewal projects are implemented. Infrastructure expansion can also have environmental impacts, including deforestation, soil erosion, and water pollution. The urbanisation and subsequent expansion of urban areas in SSA has left natural landscapes and ecosystems fragmented (Monde, 2023). As cities grow, they encroach upon forests, wetlands, and other natural habitats, resulting in habitat loss and fragmentation. This has negative implications for biodiversity as it, for instance, disrupts wildlife corridors and reduces the overall ecological resilience of the region (Monde et al., 2023).

1.1.2 Urbanisation, Population Growth and Urban Land Use Change in Zambia.

Zambia has been urbanising rapidly and has equally recorded a steady increase in its urban population (Simwanda & Murayama, 2018). Particularly, Zambia's population increased from 7,759,117 in 1990 to 9,885,591 in 2000, 13,046,508 in 2010 (Central Statistics Office, 2012) to 19,610,769 in 2023 (ZAMSTATS, 2023; Monde, 2023). Zambia's urban population grew by 39% in 2010 and, with a 4.2% urban population growth per annum, a 50% growth is expected by the year 2063 (Ministry of Local Government and Housing, 2014). Zambia's urban population density further increased from 40.6% in 2011 and is projected to rise to 46.1% by 2035 (Central Statistics Office, 2012; Central Statistics Office, 2018). According to Hampwaye et al. (2020) over 44% of Zambia's population lived in urban areas in 2020. The UN further projects a 58% increase by the year 2050, indicating a five-fold growth in the number of urban residents in Zambia (UN-Habitat, 2020). It is safe to therefore state that Zambia is experiencing a significant rate of urbanization, driven by factors such as rural-urban migration, population growth, and economic opportunities in urban areas (Li & Siame, 2020; Simwanda et al., 2020).

With Zambia's total urban population predicted to increase by 6.1% between 2011 and 2035, a significant proportion of this rapid population growth is mainly concentrated in the urban

areas (GRZ., 2015; UN-Habitat, 2016). Worth noting is the fact that most of the urban population are poor, vulnerable, and live in informal settlements (Simwanda, Murayama, Phiri, Nyirenda, & Ranagalage, 2021). Urbanisation, rural-urban migration, and the growing urban population have consequently caused massive urban LUC and, the proliferation of informal and unplanned settlements some of which border low-density areas (Mubanga, 2019). Some of the settlements have now been gazetted and provided with some basic social amenities such as health, education, waste management, water, and sanitation.

Rural-urban migration plays a significant role in Zambia's urbanization process. According to Li and Siame (2020), people continue to migrate from rural areas to cities in search of better employment opportunities, improved access to education and healthcare, and a higher standard of living as promised by the glittering urban areas. Chiwele et al. (2022) noted that the allure of urban areas, coupled with limited economic prospects in rural areas has contributed to the steady influx of people into cities. With rural-urban migration, Zambia's urban population has been steadily growing, consequently adding to the pressure on urban areas The country's population is predominantly young, a demographic trend that is further contributing to the urbanisation process (Zambia Statistics Agency, 2022). The youth are always seeking for various opportunities such as employment, education and a better livelihood in urban areas, something that has contributed to increased urbanisation rates. Urban areas in Zambia offer various economic opportunities, including formal employment, entrepreneurship, and access to markets that draw the masses to them. Cities serve as hubs for commercial activities, industries, and services, attracting people from rural areas in search of better economic prospects (Monde, 2023).

Rapid urbanization in Zambia has resulted in the emergence of informal settlements on the outskirts of cities as noted by Li and Siame (2020). These settlements often lack proper infrastructure, the provision of basic services, and tenure security (Mandhu et al., 2019). Informal settlements contribute to changes in land use, as people settle on land without formal authorization. Economic factors such as mining, manufacturing, and service sectors, have contributed to urban growth and land use changes while the construction of infrastructure such as roads, bridges, schools, hospitals, and utilities to accommodate the growing urban population has contributed to the urbanisation of Zambian cities (Masumbu, 2018).

Infrastructure projects, however, require the acquisition and utilisation of land which ultimately leads to changes in urban land use patterns. The conversion of land for urban development can lead to deforestation, habitat loss, and increased pressure on natural resources such as water

and minerals (Monde, 2023). Furthermore, Zambia's land tenure system and governance play a role in urban land use changes although land ownership and tenure can be complex at times (Mandhu et al., 2019; Mulolwa, 2016; Munshifwa, 2018). Land tenure in Zambia involves customary, state, and private land.

Designed in 1935 as a garden city, Lusaka has over the years, witnessed rapid urbanisation and a steep rise in its urban population that has led to various LUCs (Simwanda, 2018; Simwanda & Murayama, 2018; UN-Habitat, 2016). Lusaka city has the fastest growing urban population in Zambia with an estimated 4.9% urban growth rate as opposed to 3.2% for Kitwe, 3.1% for Livingstone, 1.9% for Ndola and 4.2% for the national annum (CSO MOH and ICF, 2019; Mubanga, 2019, p. 1). According to Masumbu (2018), Lusaka city has been the most prominent where population growth, urbanisation, and economic activities are concerned in Zambia. As evidenced by the 2010 Census of Population and Housing, Lusaka was the only city that had breached the one million population threshold. Its population hit a record high of one million and seven hundred thousand people indicating a 61% growth during the 1990-2000 decade (Masumbu, 2018).

Lusaka's unprecedented urbanisation and the surge in urban population have had a number of economic, socio-cultural, and environmental implications (Thuo, 2013). These include urban expansion, diminishing urban agricultural land and a threat to food security, demand for decent and affordable housing, increase in informal/illegal and slum settlements, and environmental degradation (Chitonge & Mfune, 2015; Hampwaye et al., 2007; Simwanda, 2018; Simwanda & Murayama, 2018; Thuo, 2013). Most importantly, the shifts in Lusaka's land use have come with massive land commodification (Mweemba & Monde, 2018; Simwanda et al., 2021). Mubanga (2019); Lupale and Hampwaye (2019), attribute the commodification of land to urbanisation, the massive influx of foreign nationals especially the Chinese, poor land management, administration plus policies. These have further resulted in land power relations where the powerful, urban elites and affluent benefit from urban land use change at the expense of the urban poor and vulnerable (Mubanga, 2019; Munshifwa, 2018).

Chiwele, Lamson-Hall, and Wani (2022); Chungu and Dittgen (2021); Li and Siame (2020); Simwanda and Murayama (2018) all note that Lusaka still faces rapid urban LUCs that are sometimes unplanned due to nominal land use planning, land administration and management, the political economy of land, urban expansion, economic development activities, urbanisation, and rapid urban population growth. Forest 27 (Lusaka's major groundwater recharge zone) could be a good example of the impacts of Lusaka's growing urban population and

urbanisation, poor land use policy, and management. The previous (Patriotic Front) government gazetted the forest for urban extension and development, but the current (under the United Party for National Development) government has halted all construction works in readiness for demolition. However, this has not been actualised due to the land politics surrounding the degazetting of the forest in the first place. In peri-urban areas such as Kalingalinga, land especially on the road frontage, is being sold rapidly and being converted to mostly urban and commercial use. According to Mubanga (2019); Li and Siame (2020); Hampwaye et al. (2020); Chiwele et al. (2022); Chungu and Dittgen (2021), it is undeniable that both urbanisation and urban LUC have had implications on urban residents particularly, the urban poor and vulnerable groups.

Lusaka has become a hub of social economic activities as well as the centre of the inflow of people from other spaces within and outside Zambia. For instance; Lusaka has had the highest urbanisation growth rate of 4.7% between 2000 and 2010 and, an estimated 4.9% growth rate by 2018 compared to other major cities (Mubanga, 2019). The result of this growth has been the transformation of land from its initial use of mostly forest and agricultural land into urban uses that include commercial and residential use. Consequently, various LUCs have over time taken place ranging from the conversion of water recharge forest areas into affluent urban settlements and multi-facility economic zones (for example forest 26 – Lusaka Multi-Facility Economic Zone (MFEZ) and recently, forest 27 to the conversion of agricultural land to settlements. This has consequently, resulted in the high demand for land by multinationals, local investors, urban elites, local bureaucrats and politicians, and the middle class (Hampwaye et al., 2020; Simwanda & Murayama, 2018). This has further affected the urban poor and vulnerable who have either been displaced and pushed to the urban fringes and city peripherals or clamped up in informal settlements where overcrowding has become the order of the day (Simwanda, 2018).

Most studies on this subject in Zambia have focused on urbanisation trends, and changes in land use and cover leading to the realisation of rapid urban land use and land cover change (Mandhu et al., 2019; Mubanga, 2019; Murayama, Estoque, Subasinghe, Hou, & Gong, 2015; Mweemba & Monde, 2018; Simwanda, 2018; Simwanda & Murayama, 2018; Simwanda et al., 2021). There is however, limited empirical evidence of studies undertaken in urbanisation, urban land use change, the political economy of land, and how the urban poor and vulnerable residents negotiate their rights to the city in the context of the evolving and urbanising Lusaka urban district. The urban poor, especially women and children who have historically depended

on their land for their survival and livelihood have been left vulnerable by the impacts of urbanisation and land use changes.

1.2 Thematic Considerations

Over the last two decades, Lusaka has rapidly grown with its total urban spatial extent more than doubling to 41, 490 hectares in 2020 from the initial 17, 992 hectares in 2000 (Chiwele et al., 2022, p. 8). Within this urban spatial extent, the built-up area equally increased from 63% to 70% during the same period (Chiwele et al., 2022, p. 8). While the urban population has been growing, urbanisation and LUC have been taking place too, consequently out scaling Lusaka's socio-economic and environmental carrying capacity (Simwanda & Murayama, 2018). The impacts are manifesting in the marginalisation of the poor and vulnerable urban residents. Urban LUCs are particularly, increasingly affecting the urban poor and vulnerable (women, aged, children and differently abled) who have no control over LUC.

Lusaka's urban population growth has led to the increased demand for requisite services such as residential housing consequently putting more pressure on urban land resources (Chiwele et al., 2022; Hampwaye et al., 2020). This pressure is being manifested through competition for land for various uses including residential, commercial, industrial, and agricultural purposes. These developments have further pushed the urban poor and vulnerable who have historically depended on open spaces for agriculture to have no space for food production (Hampwaye et al., 2020; Hampwaye et al., 2007). Furthermore, Lusaka has been opened as an economic centre with internal and mostly, external investments (Chungu & Dittgen, 2021; Li & Siame, 2020; Wragg & Lim, 2015). External investments are being promoted as having an economic outreach to transform and contribute to national economic development (Li & Siame, 2020). This is evidenced by the increased Chinese and South African investments and the massive displacement of the poor from the spaces they previously owned thereby impacting their rights to the city too. Furthermore, the government and city of Lusaka have prioritised urbanisation and LUC that enhance economic development (Chungu & Dittgen, 2021).

In this context, access to land in Lusaka is contested and the emergent result is the displacement of the poor and vulnerable to the city peripherals or overcrowding them in informal settlements within the city (Chiwele et al., 2022; Chungu & Dittgen, 2021). In most cases, these people have no control over land, lack resources and reproductive capital or the political power to negotiate nor compete for these resources, and, do not understand the land power relations at play (Chungu & Dittgen, 2021; Li & Siame, 2020; Mubanga, 2019). While literature has been

focusing on the impact of urbanisation in Zambian cities, it does not focus on the contestation of urban space especially for Lusaka's urban residents with less political and economic powers hence the context of this study.

In view of the above observations and arguments, this study was interested in ***investigating how the urban poor and vulnerable groups particularly women, are negotiating the highly commercialised urban land space to meet their livelihoods requirements and contribute to the socio-economic growth and development of Lusaka urban district.*** It is important to note that Lusaka, as the capital of Zambia, has dualistic functions and many different contestations for land, either for commercial or domestic purposes. These are manifested at the expense of the poor and vulnerable urban dwellers who in most cases have no financial and economic power or access to political instruments with which to influence urban processes let alone access to urban land resources.

In the context of these changes, the study was further interested in understanding how the process of urbanisation coupled with changes in urban land use have resulted in the displacement of poor and vulnerable households from land which they previously owned and or occupied. In the context of this framing, the study was interested in creating an inventory of the myriad ways in which the poor renegotiate their rights to the city in order to have access to productive capital.

1.2.1 Research Questions

In view of the above considerations, the following questions guided the entire research process.

a) In what ways has urbanisation impacted land use changes in Lusaka urban district from 1990 - 2020?
b) How are the urban poor and vulnerable renegotiating their right to the city and urban citizenship within the rapidly urbanising city of Lusaka?
c) In the context of a highly commercialised urban space, in what ways do the urban poor and vulnerable groups of people, meet their livelihoods and incomes in ways that are sustainable for socio-economic growth and development of the Lusaka urban district?
d) What are the implications of the findings of this study in a wider context, particularly in Sub-Saharan African cities?

1.3 Aim and Objectives of the Study

The aim of the study was to assess the impacts of urbanisation on urban LUC in Zambia using Lusaka urban district as a case study. The study further sought to establish how the urban poor and vulnerable who have historically depended on land for sustenace renegotiate their space (right to the city) in terms of having access to urban space and remain socially and economically productive considering that government policy has embarked on economic growth and development of the city and country at large.

In view of this, the objectives of this study were to:

a) Create an inventory of urbanisation induced LUC in Lusaka urban district (from 1990 - 2020),
b) Assess how the urban poor and vulnerable groups negotiate their right to the city and urban citizenship within the rapidly urbanising city,
c) Establish how the urban poor and vulnerable groups meet their livelihood requirements and incomes in ways that are sustainable for socio-economic growth and development of the Lusaka urban district,
d) Examine the implications of the findings of this study in a wider context particularly, that of Sub-Saharan African cities.

1.4 A Concise Literature Review

Urbanization and urban land use and land cover changes have significant and wide-ranging impacts on urban livelihoods particularly the urban poor and vulnerable. Urbanisation and urban LUC affect the urban poor's living conditions, food security, access to resources, and overall well-being (Bodo, 2019; Collier & Venables, 2017; Godfrey & Julien, 2005; Nuissl & Siedentop, 2021). Empirical evidence suggests that urbanisation has a number of impacts at the global, regional, and local levels (Akubia, 2019; Brenner & Schmid, 2015; Li & Siame, 2020). These include among others, internal displacements of the urban poor and vulnerable (Tacoli, Mcgranahan, & Satterthwaite, 2014), increase in rural-urban migrations (Tacoli et al., 2015), change in urban land use (Simwanda & Murayama, 2018), land power relations (Kombe, 2005; Mubanga, 2019), increasing urban population numbers (UN-Habitat, 2020), land fragmentation (Monde, 2023), deforestation (Rudel, 2013), expansion and change in the spatial extent of cities see (Brenner, 2018; Glaeser & Xiong, 2017; Kuddus, Tynan, & McBryde, 2020; Li & Siame, 2020).

According to Izakovičová, Mederly, and Petrovič (2017); Swerts et al. (2018), rural urban migration coupled with the natural urban population increase accounts for most of the urban population. In India, about 30% of the urban population comes from rural-urban migration Swerts et al. (2018) while Yogi, Samudro, Soesilo, and Pratama (2022) found that Indonesian urban areas recorded a higher number of urbanites stemming from rural-urban migration compared to the ones that were already living in the cities. This was equally revealed in China by different scholars see (Song et al., 2018; Wang, Chen, Shao, Zhang, & Cao, 2012; Wu, Lin, Xing, Song, & Li, 2021; Zhang, 2016). For much of SSA, the situation is similar as was found out by Bird et al. (2017) and Thuo (2013) in Kenya, Hunt (2004) in Uganda, Kombe (2005) in Tanzania, Mujeyi (2021) in Zimbabwe, Tsheola and Makhudu (2019) in South Africa among others. Simwanda and Murayama (2018) found out that, rural urban migration accounts for a good number of people living in Zambia's urban areas. It is worth noting however that rural-urban migration is more pronounced in developing than developed countries.

UN-Habitat (2020) argues that urbanisation has led to swelling urban population numbers. Urban population increase is a key driver of urbanisation and urban LUC globally, regionally and locally as it comes with the demand for land for various urban uses such as settlements and agriculture see (Alemayehu, 2016; Chigudu & Chavunduka, 2021; Collier & Venables, 2017; Gitau, 2018; Hua, 2017; Olorunfemi et al., 2022). In his study of land use land cover changes in the detection of water quality based on remote sensing and multivariate statistics Hua (2017) found out that the increasing urban populations have led to spatial expansions of urban areas resulting from the conversion of land from forest and formerly agricultural land to urban use especially in SSA. Mweemba and Monde (2018) further noted that land in Zambia Lusaka in particular is being converted into a concrete jungle leading to changes in ecosystems, biodiversity loss, and a disturbance in ecological resilience. Li and Siame (2020); Chungu and Dittgen (2021) on the other hand found out that the growing urban population in Lusaka lead to internal displacements that affect mostly the urban poor and vulnerable who lack financial and political muscle to navigate the urban landscape.

According to Glaeser and Xiong (2017), economic development, infrastructure development and technological advancements are key drivers of urban LUC. Remote sensing and GIS for instance have transformed how land is assessed, monitored and planned (Membele, Naidu, & Mutanga, 2022). Various scholars have argued that these tools have enhanced the manipulation and conversion of formerly forests and agricultural land to various urban uses (Masumbu, 2018; Mekara, 2020; Meyfroidt, Lambin, Erb, & Hertel, 2013; Olorunfemi et al., 2022). Major

urban land use categories include built-up space and commercial agriculture which accounts for about 70% of total forest cover loss in SSA (Jew, 2016; Kassouri & Alola, 2022; Li et al., 2017).

Nuissl and Siedentop (2021) point out that globalisation and the global demand for food has revolutionised the way in which land use changes take place not only in SSA but globally. Masumbu (2018); Li and Siame (2020); Chungu and Dittgen (2021); Olorunfemi et al. (2022) found out that urban and economic development activities such as mining, urban construction and expansion lead to urban land use change in Zambia. More often than not, urbanisation and urban LUC leave the urban poor vulnerable as their livelihoods are characterised by mostly lack of access to proper housing, water and sanitation, provision of basic social amenities to internal displacements that force them out of their comfort zones (Chiwele et al., 2022).

Empirical evidence suggests that modifications to the spatial extent of the urban land ecosystem have significant outcomes including climate change, changes in the hydrological and biochemical cycles at the local, regional and global levels (Lambin & Meyfroidt, 2011; Li et al., 2017; Ross et al., 2021). These environmental problems increase the occurrence and frequency of extreme weather events that further result in the loss of productive land (Foley et al., 2005). In SSA, farmers often move to urban centres in search of better livelihoods according to the findings by (Henry, Maniatis, Gitz, Huberman, & Valentini, 2011; Olorunfemi, Fasinmirin, Olufayo, & Komolafe, 2020; Olorunfemi et al., 2022). In her study whose major findings were that natural ecosystems have been taken up by settlements and infrastructure development, Monde (2023) found out that farmers and the poor people end up settling in ecologically compromised zones that consequently renders them more vulnerable.

In parallel studies conducted by Côté-Roy and Moser (2019); Erb, Krausmann, Lucht, and Haberl (2009), serious global, regional, and local concerns ranging from the threat to food security, socio-cultural instability, and a surge in ecological imbalances due to urbanisation and urban land use change were noted. These and many other similar issues have caught the attention of scholars worldwide as they have far-reaching impacts on both human and animal livelihoods including the wellbeing of the environment which is the basis of all forms of life.

Various urbanisation scholars have cited weak or inadequate land governance policies and or poorly enforced/inconsistent land tenure policies in the context of SSA and Zambia see (Allsobrook, 2019; Chitonge et al., 2017; Collier & Venables, 2017; Deininger, Selod, & Burns, 2012; Dickovick, 2011; Hilhorst, 2010; Jehling & Thomas, 2016; Mamabolo & Tsheola,

2017; Mandhu et al., 2019; Mujeyi, 2021; Müller & Munroe, 2014). There is need for scholars to understand that urbanisation and urban LUC have far-reaching impacts on urban residents specifically, the urban poor and vulnerable whose very existence is dependent on the land resource. Understanding these dynamics is crucial for developing effective policies and interventions that promote inclusive and sustainable urban development (Home, 2021; Lavigne Delville, 2010; Lupale & Hampwaye, 2019; Mubanga, 2019; Tsheola & Makhudu, 2019; Van Leeuwen et al., 2018).

1.5 Significance of the Study

Some existing and current urbanisation and land use models are unsustainable as they put urban residents at risk and degrade the wider environment. The study will generate knowledge that will enable the understanding of the current models better as that will help in coming up with sustainable urbanisation and land use-replanning models that will be responsive to the changing needs and challenges of our times. The study will present a comprehensive understanding of urbanisation, land administration and management, and, LUC plus their impacts on Lusaka urban residents particularly the urban poor and vulnerable groups who do not wield any reasonable political power or financial muscle (Mubanga, 2019). A better understanding and availability of data on the spatial and temporal variations of urban land use in Lusaka will be vital in the formulation of future predictive models of urban land use management, LUC, and urbanisation in Lusaka and other SSA cities with similar but complex urban landscapes (Murayama et al., 2015).

Land use management must be site-specific if it is to be meaningful. This study will contribute towards localizing land administration and management to allow for sustainable urban expansion and allocation of land between competing uses whilst minimizing the effects on urban residents and protecting the wider environment. The study may help policy and decision-makers and all the concerned stakeholders in re-planning of Lusaka's urban land use to allocate resources to where they are most needed. The findings may help policy and decision-makers in coming up with environmentally sustainable urban land use policies that do not threaten urban residents in particular, their food needs and security. This will ensure sustainable urban expansion, the achievement of SDGs particularly SDG number 11 (sustainable cities) and Agenda 2063, and urbanisation and LUCs that do not expose poor and vulnerable urban residents to vulnerability.

Academically, the study will provide new contemporary insights on urbanisation processes and urban land administration system and policy, urban land use planning, urban population growth and food security and sustainable urban expansion nexus. Through the political economy of land, the study will highlight the power relations unfolding in Lusaka urban thereby adding on to the academic discourse and existing debates on urbanisation and the land question in SSA and beyond. The study will generate essential knowledge that will help to ascertain the serious impacts of urbanisation, urban LUC, land administration and management on urban residents, their livelihoods, and the urban development agenda. These are all pre-requisites to the achievement of the SDGs and, Africa's Agenda 2063 alongside retaining peace and security of all human beings and life forms (UN-Habitat, 2020).

1.6 Some Methodological Underpinnings.

The philosophical orientation that guided this study's strategies and methods is pragmatism. It is concerned with the application of what works in solving a problem and ultimately, the solution to the problem (Patton, 1990). This study employed pragmatism to help shed light on how both qualitative and quantitative, can be mixed fruitfully in trying to solve a research problem and arrive at the best answer to a research question (Hesse-Biber, 2010). Pragmatism posits that the nature of knowledge (ontology) is not static while knowledge generation (epistemology) is achieved using various methods hence the use of mixed methods.

The Mixed Methods (MM) research approach was used to assess the impacts of urbanisation and land use change in the Lusaka urban district of Zambia because they provide both the story and the numbers simultaneously (Saunders, Lewis, & Thornhill, 2012). Both the qualitative and quantitative methods were used to collect, analyse, and interpret the findings of this study all at the same time. The mixing of the two methods worked well as the inherent weaknesses, biases, and limitations of one method were covered by the other and vice versa (Creswell & Clark, 2017; Teddlie & Tashakkori, 2009). The use of MM provided a better comprehension of the research problem and further enhanced the research findings' credibility and offered the best chance of answering the research question (Hesse-Biber, 2010).

The embedded, specifically, the concurrent embedded research design was used. Both quantitative and qualitative data were collected at the same time, analysed concurrently while addressing different research questions (Creswell, 2009; Creswell & Clark, 2017). For the objective questions, GIS and remotely sensed imagery were used. Semi-structured interview schedules were used for the various government ministries, NGOs, and government

departments such as the LPPA and the LCC for the subjective question. For the collection of data from urban residents in the selected residential areas of Lusaka urban, questionnaires used were used for both the pilot and main study. This tool provided the best alternative to assessing the impacts of urbanisation and urban LUC on residents in the Lusaka Urban district.

The study population were all individuals in Lusaka urban district who had lived and or worked in Lusaka urban for a period of not less than five years. The target population included all Lusaka urban residents, government institutions and organisations managing, taking care of, or are in charge of land use changes, selected NGOs, and all other relevant stakeholders. Lusaka residents were targeted to provide information on land use changes and effects on urban residents especially the urban poor and vulnerable people.

The sample size was 929 households drawn from the selected residential areas of Lusaka urban district, an official or two from the selected government departments/institutions, NGOs, and Civil Society Organisations. Probability and non-probability sampling were used in this study. Participants from the various organisations/institutions, government departments and the NGO sector were selected using purposive sampling. Households were selected using systematic sampling and household heads were interviewed using pre-tested questionnaires.

Both primary and secondary data were collected to address the study's set objectives. Data were gathered using remote sensing and Geographical Information Systems (GIS), questionnaires, semi-structured interview guide schedules, and unstructured observations. Document analysis was also conducted to produce secondary data for the study. Data were analysed using themes derived from the study's naturally occurring and emerging themes to derive meaning and interpretation of qualitative data expressed using words and not numbers (Patton & Cochran, 2002). Quantitative Data were analysed using Statistical Package for Social Sciences (SPSS) and Excel while GIS images were analysed using ArcGIS 10.5.

1.7 The Scope of the Study

The scope of the study defines what a study will or not do. In this case, the spatial extent of this study was limited to the Lusaka urban district and not the entire Lusaka province. Within this geographical setting, the thematic focus was on urbanisation, urban land management and policy, urban land use change, rights to the city, land power relations, and urban livelihoods, particularly the urban poor and vulnerable groups.

1.8 Ethical Discussions and Considerations

Research ethics refers to the moral principles guiding research from its inception through to its completion and the publication of results (Knight, 2019). No research involving human subjects should take place without ethical considerations as that involves a variety of target populations some of which are vulnerable, lack full competence to consent or are otherwise associated with heightened risks (Knight, 2019; O'Neill, 2003). Research ethics ensure maximum benefit from the study whilst minimising the risk of potential or actual harm to participants. Ethical considerations binding to this study revolved around the issues of informed consent, vulnerability, privacy, confidentiality, and risk since any study that involves human participants delves into their social and private lives (Knight, 2019).

This study was committed to reducing the above-stated issues through firstly, seeking informed consent from all the study participants. This was done and achieved through explaining in simple language or terms, the aim of the study, benefits, methods employed as well as the possible risks. Further, participants were notified that they did not have to participate in the study if they did not want to and that they therefore, had the right to withdraw their participation at any time. Participants were made to understand in the simplest language possible that their participation in the study was entirely voluntary. All participants were, furthermore, provided with written consent forms where they were required to sign as a sign of their voluntary participation in the study. Those who agreed to participate in the study after being explained to, were made to sign the consent forms before the commencement of the interviews or their responding to the researcher administered questionnaire.

During the study period, privacy and confidentiality were upheld. To this end, there were no names mentioned or written down anywhere throughout the course of this study. Instead, codes and or numbers were used to identify the study participants. For all the interviews that were conducted and recorded, permission was sought from the participants to record the interviews and further, no names were mentioned or recorded even in the researcher's notebook during the interview process. Pursuant to the principles of privacy and confidentiality, the research findings will strictly be used for academic purposes only as this will ensure the protection of all vulnerable participants. Suffice to mention, the study was classified as a minimal risk one by the With University Ethics Committee, meaning that the harm to research participants if at all any, was very minimal.

Risk was equally minimised. This was done by ensuring that study participants were not exposed to more stress for the duration of the study than they experienced in their everyday lives. To ensure their maximum comfort and reduced risk, all the study participants were engaged either within their own homes or places of work. Furthermore, data collected from this research will be presented in its real form.

Adhering to ethical principles was cardinal as it also guaranteed the study's independence and impartiality thereby avoiding any prejudiced or discriminatory practices (World Medical Association, 2001). In this regard and before any Data were collected, ethical clearance was sought from the Wits University Ethics Committee. Furthermore, gate-keeper's letters were sought from all the institutions and organizations that participated in the study. Further, all Covid – 19 guidelines and restrictions were adhered to considering the times that we are living in to protect all the study participants. It would have been unethical for this study to have deliberately exposed its participants to the deadly pandemic hence the observance of all legally binding guidelines, rules, and restrictions in the areas of study.

1.9 Limitations of the Study

The study was conducted using data and statistics from the 2010 census of population and housing, which were quite old. This greatly limited the study where numbers and figures were concerned. Ideally, Zambia conducts its census of housing and population every ten (10) years. This means that from the 2010 census of population and housing, the next census should have been conducted in the year 2020. That would have provided this study with recent and up-to-date numbers and figures to work with. As a mitigation measure to this limitation, the 2010 census of population and housing Data were combined with the 2016/2018 Zambia Demographic and Health Surveys results that provided some recent figures. Even if the Zambian census of population and housing was eventually conducted in the last quarter of 2022, the census Data were not yet ready for public consumption at the time of field data collection for this study.

Participants' apathy towards research or study was experienced. Participants' lack of willingness to participate in the study was a limitation as some participants were not willing to participate for their own reasons. Some of the reasons that were cited included among others, the fear of ending up in the news media or being accused of leaking private or confidential documents and or information to third parties. Others were scared of losing their jobs if they opened up to the information that was being sought by the study.

As a mitigation measure, a participant information sheet was provided, explained and shared with all the participants. Further, informed consent was sought from all the respondents and all those who volunteered to participate were made to sign the consent form that was provided to each one of them. Equally, all the participants were assured of privacy and confidentiality which were upheld throughout the research process. Furthermore, all ethical considerations that were binding to the study during the research period were upheld.

The Covid-19 pandemic was another limitation to the study as it made movements and physical meetings somehow tricky. However, all binding Covid-19 rules and regulations as per each institution visited were observed to protect the study participants and the offices that were visited for the interviews. For the households, care and caution such as hand washing, regularly sanitising and masking up at all times were observed by the researcher and the research assistants in the field.

In certain instances, institutional officials were not readily available as certain situations in different workplaces dictate that workers operate on a rotational basis or work away from the office since the advent of the Covid-19 pandemic. This really proved to be a challenge and limitation especially with the seeking of gatekeeper's or permission letters prior to the ethical clearance certificate application. To mitigate the effects of the pandemic, the study used electronic means such as telephone & google form interviews, google & zoom meetings and, the observation of all legally binding covid -19 regulations to minimise risk and vulnerability of all the study participants.

1.10 Structure of the Thesis

This thesis is made up of six chapters that are presented as follows.

Chapter One is made up of the frames of reference for the entire study. Chapter One presents the background to the study, the aims and objectives of the study, the research questions, a synopsis of the methodological considerations and literature informing the study and, thematic considerations or problem statement. Chapter one also covers the ethical considerations that were binding to the study, the scope of the study and the limitations that were encountered during the study.

Chapter Two is composed of the theoretical framework and a review of relevant literature. The various literature on studies that are related to this study on assessing the impacts of urbanisation on urban land use change, and how these two variables interact and result in the

marginalisation of the poor and vulnerable in Lusaka were reviewed. This chapter assessed various studies conducted in the areas of urbanisation, land use change and the urban poor's rights to the city from the global, regional, and local levels. It shows the gaps in literature that were identified at the time of the study and how they were bridged by this study. Chapter two also covers the theoretical considerations that were used in this study and presents the key concepts of the study which were urbanisation, land use change and human vulnerability to urban land use change.

Chapter Three presents the methodological considerations of this study. It outlines pragmatism as the research paradigm that guided this study. It also presents the study design, data collection instruments, sampling techniques and the sample size of the study. Chapter three also gives the description of the study area including its location, physical, socioeconomic, and demographic characteristics of the area and the justification for the choice of Lusaka as a study site for urbanisation, land use change, and the urban poor people's rights to the city. Issues of data validation and trustworthiness are also covered in this chapter.

Chapter Four presents the findings of this study. The findings of the study were based on the study's four objectives. The first objective was to make an inventory of urbanisation-induced LUC in the Lusaka urban district (from 1990 - 2020) using remotely sensed imagery and GIS. Land use change was detected for Lusaka urban district particularly, the seven areas under study using GIS and Remote Sensing (RS). This chapter presents the LUCs findings using choropleth maps and bar charts. Objective number two was to assess how the urban poor and vulnerable groups negotiate their right to the city and urban citizenship within the rapidly urbanising city of Lusaka.

The third objective of the study was to establish how the urban poor and vulnerable groups meet their livelihood requirements and incomes in ways that are sustainable for socio-economic growth and the development of the Lusaka urban district. This chapter presents the findings of these two objectives using tables and themes. The fourth objective was to examine the implications of the findings of this study in a wider context particularly, Zambian and Sub-Saharan African cities. The findings of this objective are presented in this chapter.

Chapter Five presents the discussion of the findings of this study based on the four objectives outlined earlier. The findings of the study are discussed in this chapter. Chapter six is composed of the conclusion of the study and gives recommendations of the study. This chapter further gives suggestions for further study on urbanisation, land use change, and urban poor people's

rights to the city that promotes sustainable urban livelihoods, urbanisation and long-term prospects and urban developments.

CHAPTER TWO

THEORETICAL CONSIDERATIONS AND LITERATURE REVIEW.

2.1 Overview

This chapter is dedicated to discussing some theoretical perspectives and the literature review of some of the arguments that have been presented on the topic of urbanisation and urban land use change. The chapter is made up of two major themes: Literature review and theoretical perspectives/underpinnings of the study. This chapter identifies limitations and gaps in existing studies on the topic thereby helping to determine this study's contribution to the body of knowledge and the formulation of the methodology for similar studies in the future. This chapter is relevant as it also helps in the establishment of the theoretical framework that shapes the study and further situates this study in a broader context of established theories and concepts, building upon existing theories or the formulation of entirely new theories to guide similar studies in the future. This chapter further helps to justify the importance of this study by explaining how the study will contribute to filling the gaps identified in the body of knowledge.

2.2 Definition of Key Concepts

This section presents the key concepts that have been used in this study. These concepts have been used throughout the study as they help in the understanding of the study in its entirety. The key concepts used in this study are *urbanisation, land use change, Rights to the City, and vulnerability.* These four terms are the core building blocks of this study and, they were used throughout the study hence their definitions according to various scholars and their implied meaning in the context of this study.

2.2.1 Urbanisation

There is no universally agreed-upon definition of urbanisation. Different scholars have defined urbanisation differently depending on the context and discipline although certain variables such as the urban population and spatial expansion have remained constant. Demographers for instance, define urbanisation as the increase in the share of the population living in urban areas (Kamete, Tostensen, & Tvedten, 2001; Poston Jr & Bouvier, 2010, p. 307). Kuddus et al. (2020) define urbanisation as the mass movement of populations from rural to urban areas coupled with the resultant physical changes to urban areas.

McGranahan and Satterthwaite (2014) refer to urbanisation as a broad-based population transition from rural-to-urban areas that involves land use, economic activity, and culture. Watson (1993) also defines urbanisation as a political process that is often a repercussion and sometimes the cause of political change and even conflict. Potts (2012) on the other hand defines urbanisation as a proportion of a country's urban population, that is, the population residing in urban centres. Warr (2020) describes urbanisation as a shift of more than half of the rural population dependent on farming, to urban areas that are dependent on manufacturing and services industries.

From the definitions above, technically, an area becomes urbanised when its growing population increases and surpasses a certain or defined population threshold (Masumbu, 2018). An area is considered urban according to Kamete et al. (2001), when most of its socio-economic activities cease to be predominantly manual and agrarian but have been mechanised or industrialised and further classified as non-extractive. Tacoli et al. (2015) also qualify an area as urban when its settled areas are denser and more populous compared to their rural counterparts. Besides, such an area is equally considered urban when it becomes the most suitable for the location of most of the administrative facilities and functions.

In the context of this study, a place becomes urban when its increasing population, concentrated in a limited administrative and geographical area keeps growing and increases beyond a defined threshold. The administrative and geographical growth of an area must be accompanied by the corresponding expansion in the spatial extent of the defined physical boundaries. Furthermore, there must be a change of land use from non-urban uses such as forestry to urban land uses that include the expansion of the built-up space commonly referred to as a concrete jungle.

From these definitions, what is generally accepted as urbanisation within/among scholarly conversations and across disciplines encompasses the mass movement of populations from rural areas to urban centres. Thus, an area is deemed urban when it is generally more populous, denser, and suitable for hosting administrative functions and facilities (Kuddus et al., 2020; Potts, 2012; Wadduwange & Millington, 2019). Tacoli et al. (2015); Tacoli et al. (2014); Collier and Venables (2017) all argue that urbanisation is intertwined with economic growth since it takes place when an area's employment and a large share of the Gross Domestic Product transition from being mainly agricultural to industry and services sectors and benefit from urban centres agglomeration.

McGranahan and Satterthwaite (2014) argue that urbanisation results from an interplay of various factors. These are rural-urban drift, the natural increase in the urban population, reclassification of urban boundaries due to the outward spatial expansion, and the growth of small population centres that are consequently identified and pronounced as urban areas (McGranahan & Satterthwaite, 2014). According to Kuddus et al. (2020) urbanisation is used in reference to land use changes in specific areas mostly on the city periphery. This is where land on the city fringes and in the peri-urban areas ends up urbanized by being sold and developed for various urban uses such as commercial, residential, and industrial.

Wadduwange and Millington (2019); Venables (2018); Nuissl and Siedentop (2021) equally agree and point out that urbanisation takes place through the outward expansion of urban areas from the CBD and convention of the surrounding non-urban land to urban developments such as residential or commercial uses. This consequently increases the spatial extent of the urban areas mostly at the expense of the peri-urban and rural areas (Tacoli et al., 2015). Geographical boundaries are further extended to include the converted land housing urban developments.

In the context of this study, urbanisation is the transformation of rural agrarian communities into modern industrialised communities. These are characterised by a growth and increase in the urban population and the provision of basic social amenities and services accessible to all urban dwellers. Urbanisation in this study refers to the increase in the urban population due to various factors and, the increase in the spatial extent of urban areas such that the conversion of land in the city peripherals and urban fringes is inevitable (Hampwaye et al., 2020; Onyebueke, Walker, Lipietz, Ujah, & Ibezim-Ohaeri, 2020; Potts, 2012; Simatele, Binns, & Simatele, 2012).

In a bid to accommodate the growing urban population and provide space for various urban uses, urban land undergoes a change of use from mostly, agricultural and forest land (Zoomers et al., 2017). On the other hand, land on the city fringes is equally transformed into increasing urban functions that include residential, commercial, and industrial (Simwanda et al., 2020). Inevitably, this calls for the conversion of non-urban land to urban land use to accommodate the growing urban population and its diverse needs. According to Li and Siame (2020), this process consequently gives birth to urban centres that are more industrialized and mechanised, economic development oriented while rendering the urban poor more and more vulnerable.

2.2.2 Land Use Change and Land Cover Change.

Land Use Land Cover (LULC) are often used interchangeably but they mean two different things (Butt, Shabbir, Ahmad, & Aziz, 2015; Hua, 2017; Rawat & Kumar, 2015). Rawat and Kumar (2015, p. 78) define Land Cover as the physical characteristics of the earth's surface which involve vegetation, water, soil, and other physical features created through human activities like settlements, while Land Use refers to land used by humans for habitats and related functions such as diverse economic activities.

Foley et al. (2005) define Land Use and Land Cover Change as the modification of the earth's surface through anthropogenic activities such as urban expansion, cropland, pasture and plantation intensification world over in a bid to accommodate the growing human population. Hua (2017) defines Land use and land cover change (LULCC) as the anthropogenic modification of the earth's surface. According to Lambin et al. (2003); Jew (2016), LCC refers to the alteration of the biophysical attributes of the earth's surface while LUC is the human resolve applied to these attributes.

Alemayehu (2016) defines land use change as the way in which human beings utilise land and its resources while Ahmed (2011) defines land use as the utilisation of land as a resource for various purposes like settlements, agriculture, forests and wildlife habitat. LULCC both depend on how over time; human beings utilise the land for developmental purposes such as socio-cultural and economic. In her study of LULCC in the Watamu Mida Creek in Kenya, Alemayehu (2016) notes that land use changes have an impact on land cover changes and the opposite is also true. According to Alemayehu (2016); Lambin and Meyfroidt (2011), historical and contemporary LUC and LCC have been a consequence of the changing size and pattern of human population growth coupled with anthropogenic activities such as urbanisation, technological advancements and economic developments.

Various scholars; see (Foley et al., 2005; Frélichová, 2014; Hua, 2017; Hudak, 2022; Lambin et al., 2003; Lambin & Meyfroidt, 2011; Lambin et al., 2001; Li et al., 2017; Limpitlaw & Woldai, 2000; Lubowski, Plantinga, & Stavins, 2003; Mekara, 2020) all argue that the magnitude of all of these changes significantly affects the normal functioning of the global ecosystem. This consequently results in many different vices such as global climate change, undermining ecosystem goods and services provision, biodiversity loss, various forms of pollution, among others.

Wright and Wimberly (2013) single out population growth as being the number one culprit responsible for all these changes. The authors further argue that population growth contributes to LUC and LCC directly and indirectly through the increased demand for living space and agricultural produce necessitated by the high demand for food (Wright & Wimberly, 2013). Hua (2017) argues that these demands have stressed the ecosystem to levels never experienced before in the history of mankind which is a current source of concern among the scholarly circles globally. On a positive note, Rawat and Kumar (2015) point out that land use change has been identified as the backbone and foundation of economic development as it provides economic and social benefits for billions of people worldwide.

Land use change in the context of this study refers to the use of land by human beings for various purposes such as settlements, agricultural activities, forests, mining activities and urbanisation. Land cover change on the other hand refers to the modifications of the earth's surface by human beings. These changes involve modifying not only the physical characteristics of the earth's surface but also the functions of land from the three basic functions of the environment. According to the Millennium Ecosystem Assessment (2005), the environment (biophysical) serves three basic functions which are; a supply depot/sustenance base, waste repository and living space. It is worth noting that the environment can only serve one of the three functions at any given time. Suffice to mention, human modifications of the earth's surface have got global, regional and local impacts that call for an understanding of the various LULCC to make informed decisions at the global, regional and local levels that will enable us to manage our biggest natural resource, land.

2.2.3 The Nomenclature of Vulnerability.

Vulnerability tends to mean different things to different scholarly fields. Its definition largely depends on several aspects including policy relevance, and the concepts under consideration but mostly, the disciplinary focus (Wisner, Blaikie, Blaikie, Cannon, & Davis, 2004). Vulnerability is defined in relation to specific hazards or interactions where it is seen to have two basic elements: exposure and susceptibility to harm where exposure is determined by where and how people live relative to a hazard (Blaikie, Cannon, Davis, & Wisner, 2014). Susceptibility, on the other hand, has to do with the social, economic, political, psychological and environmental variables that interact in producing different impacts amongst people with similar levels of exposure (White et al., 2005). Vulnerability represents the interface between

exposure to physical threats to human well-being and the capacity of those people and communities to cope with those threats (UNEP, 2002).

Vulnerability is defined as the exposure of individuals or groups of people to livelihood stress as a result of changes in the biophysical environmental (Lipton & Ahmed, 1997). Moser, McIlwaine, and Holland (1998, p. 2) define vulnerability as "the insecurity of the well-being of individuals, households, or communities in the face of a changing environment". On the other hand, Ecology-based environmental literature defines vulnerability in the context of the vulnerability of species or ecosystems vulnerability to damage (Millennium Ecosystem Assessment, 2005). In this case, species are vulnerable to extinction while ecosystems tend to be vulnerable to irreversible damage induced by anthropogenic activities (Alwang, Siegel, & Jorgensen, 2001; Millennium Ecosystem Assessment, 2005).

Vulnerability has to do with some sort of exposure of individuals and groupings to something unpleasant which they either have to adapt to or cope with (Blaikie et al., 2014). According to Kelly and Adger (2000); White et al. (2005), there is some susceptibility to harm or danger when the people or communities involved have to put up some coping mechanism of some sort. In the context of this study, vulnerability refers to the urban poor's lack of economic and financial resources and the political powers associated with land access, ownership and change of use. This, coupled with their state of poverty predisposes them to susceptibility to unfair land deals that see them selling their pieces of land to the highest bidder. This scenario has consequently led to gentrification and the birth of the urban divide as is the case in many developing countries' urban areas such as Lusaka in Zambia.

Blaikie et al. (2014) posits that individuals and communities can have different levels of vulnerability to the same threat or hazard. When individuals, groups of individuals and entire communities are faced with the same threat or exposed to the same hazard, their vulnerability levels will vary significantly (Adger, 1999; Adger, 2006; Bankoff, Frerks, & Hilhorst, 2013). Blaikie et al. (2014) argue that there are highly vulnerable households and individuals within the same community. According to Kelly and Adger (2000), high vulnerability households and individuals are those faced with the highest exposure to the threat or hazard but with the least capacity to cope such that even their recovery rate in the face of a disaster is usually slow or non-existent where there is no external help.

In this study, vulnerability is used to examine a combination of physical, social, economic, and political factors that influence the degree to which an individual, community, or system is

threatened by a particular event, as well as their ability to mitigate these threats and recover when the event occurs (Cutter, 2012). In this case, the urban poor and vulnerable people's rights to the city have constantly been threatened by urbanisation and the subsequent LUC that have characterised the Lusaka urban district. According to Kelly and Adger (2000), the vulnerability of the urban poor to urbanisation and LUC has a historical and time dimension which is related to economic aspects and urban land use with an emphasis on power and political institutions and dimensions that shape them. Li and Siame (2020) point out some factors that enhance the urban poor's vulnerability to urban LUC and urbanisation. These include social, economic and political characteristics of the area and the people involved (Kelly & Adger, 2000).

According to Simwanda et al. (2020), people sometimes render themselves vulnerable knowingly and unknowingly. Kombe (2005) further notes that people knowingly put themselves in harm's way through, for instance, deciding to settle in areas that are less suitable for human habitation and settlements such as ecologically sensitive areas. Blaikie et al. (2014) also agree as they postulate that people are also increasingly vulnerable by living in places that are not entirely safe for human habitation without even knowing it. Furthermore, Chungu and Dittgen (2021) argue that the risks of settling in such areas will outweigh the benefits although such people will not think beyond their immediate needs, which blinds their need to their increased vulnerability.

2.2.4 Rights to the City

> *"To take rights seriously means to be aware*
> *of what is distinctive and controversial about*
> *a claim of a right . . ."* (Waldron, 1987).

According to Kuymulu (2013), the concept of 'rights to the city' (RttC) has recently gained traction with various groups including grassroots urban justice activists and radical theorists. The rights to the city concept has equally attracted considerable attention of the UN agencies and other international NGOs. Kuymulu (2013) further argues that while activists and theorists have embraced the RttC notion as a way of analysing and consequently challenging neoliberal urbanism, the UN agencies have used meetings and policies to fuse it into their political agendas.

The RttC concept is a socio-political notion that places emphasis on the rights of individuals and communities (Pierce, Williams, & Martin, 2016). RttC calls for the need for individuals and communities' active participation in defining, shaping and the conscious administration of

their own urban environments. The understanding in this context is that the city and its residents are inextricably intertwined hence, a city cannot go on urbanising and experiencing shifts in LU whilst its residents are excluded in the entire process the whole time. The core idea behind the RttC notion is that cities or urban areas must always reflect the needs and aspirations of their own residents. In this context, Amin and Thrift (2002) argue that cities must not be defined and driven by nor serve the powerful political and economic interests solely. Simone (2005) equally argues that the RttC must not ultimately be reduced to living in the city nor be serviced but that they must include urban residents' right to utilise their cities as spheres of mutable aspirations. This entails that cities must not only act as living spaces but as all-encompassing environments that provide residents with the very essence of their livelihoods.

In the context of this study, RttC refers to the notion whose central idea is that city residents (particularly the marginalised such as the urban poor and vulnerable people) must possess fundamental rights and privileges over the spaces in which they live (Amin & Thrift, 2002). These rights include among others, the active engagement and participation in the formulation of urban policies. This entails that urban residents have the right to participate in making decisions and coming up with policies that affect their cities and consequently, their very livelihoods. Rights also include access to good and affordable housing, provision of public services and amenities (including education, urban transportation and communication networks/facilities, healthcare, green spaces, and access to resources among others), a clean and safe environment (Simwanda, 2018).

The notion of RttC calls for deliberate urbanisation, LUC and industrialisation policies and economic development activities that do not discriminate, increase inequality, and create social exclusion thereby perpetuating and increasing the rich-poor urban divide within cities. Instead, RttC calls for a just city for all residents regardless of their socio-economic status. RttC also addresses issues of gentrification, land speculation, urbanisation, and urban LUC.

2.3 Theoretical Framework.

According to Nuissl and Siedentop (2021); Meyfroidt et al. (2018); Turner, Meyfroidt, Kuemmerle, Müller, and Roy Chowdhury (2020), there is no single and comprehensive theory that thoroughly explains the urbanisation of cities, urbanisation processes and urban LUC comprehensively. Scholars further argue that there is no single theory that provides an interpretation and explanation of actual observations of occurrences on the ground. Instead, urbanisation and urban LUC have been explained using various theories from the fields of

economics and social sciences to help interpret and explain actual observations and occurrences on the ground (Turner et al., 2020). Theories help to explain how urbanisation and urban LUC happen, why they happen, how they affect urban residents and, who benefits and or loses in the process (Briassoulis, 2019).

Several theoretical frameworks have been advanced about how cities grow or how urbanisation takes place. The bid-rent theory suggests that the primary influence of land use change patterns are the urban households and also businesses' willingness to pay for land available at different distances from the CBD or city centre (Narvaez, Penn, & Griffiths, 2013; Wheaton, 1974). According to Narvaez et al. (2013), the bid-rent theory's assertion on urban LUC is that wealthier households together with businesses prefer being located as close to the CBD as much as possible. This is the primary reason for their willingness to pay higher rents for being located close to the CBD. McMillen and McDonald (1998) argue that this leaves the CBD and surrounding areas servicing higher intensity land uses such as high-density residential, industrial and commercial developments.

The Land Rent theory, like the Bid-Rent theory, is an extension of Bid-Rent theory. According to Jäger (2009), the land rent theory was ideally used to explain agricultural rent but was later used to analyse spatial occurrences, urban structures and developments like gentrification, suburbanisation and, the location decisions of individuals and businesses within the urban context. The Land Rent theory argues that there is a relationship between uses of urban land and land rent and that, land use patterns change over time (Jäger, 2009). Park (2014) postulates that the change in LU patterns over time is dependent on various factors including the location of land, its accessibility, and the demand for distinct uses of land.

The Multiple Nuclei Model (MNM), proposed by geographers Chauncy Harris and Edward Ullman in 1945, argues that the growth of cities does not revolve around the CBD (Delaney, 1993; Evans & Evans, 1973). Instead, cities develop around nuclei or multiple centres where each nucleus serves as a specialised node for different land uses that ultimately form defined subcentres within the city (Harris, 1997; Schwirian, 2007). Cities have multiple growth points that guide the growth of the city and the resultant LUC patterns.

According to Graham and Marvin (2002); Pacione (2009), Harvey Molotch's Urban Growth Machine theory argues that urban LUC is shaped by a number of different interest groups including politicians, urban developers and, business organisations. Although serving different and mostly their own interests, these groups work in harmony to promote the city's growth and

development resulting in the displacement of communities and urban land uses (Pacione, 2009). According to Ward (2010), this ultimately shapes up the city's land use change and the consequent patterns of urban land use.

Other scholars have explained urban LUC using the Concentric Zone Model proposed in 1925 by a sociologist named Ernest Burgess (Ford, 1972; Schwirian, 2007). According to Reiffenstein (2017), urban land changes use through a series of concentric zones spreading out from the CBD (Schwirian, 2007). The CZM points out that city growth and land use change emanate from the core which is the CBD, followed by the distinct industrial, residential and finally, the suburban concentric zones of urban land use (Maradin, 1990). Thus, cities expand from inside out with older concentric zones giving way to newer zones as the city's spatial extent grows (Schwirian, 2007).

Many theories have been put forward to try and explain urbanisation, urban LUC, their impacts on urban residents and their livelihoods especially. To investigate urbanisation and urban LUC in Lusaka, spatial patterns were processed systematically. The study's urbanisation was discerned using the critical urban theory while LUC was studied using Hoyt's sector model (Zhang, 2016) theory which is a modification of the concentric zone pattern or model of urban land use due to transportation networks.

2.3.1 The Sector Theory of Urban Growth and Land Use.

The sector theory, also known as the Hoyt model, was propounded by an American economist Homer Hoyt in 1939 as an alternative explanation to the 1925 concentric zone theory of land use by sociologist Ernest Burgess (Adams, 2005; Harris & Ullman, 2020). In this model, Hoyt suggested that urban land use developed in zones that expanded outwards from the central business district (CBD) along the major transportation routes i.e., the rivers, roads, and railway lines (Adams, 2005; Dekolo, Oduwaye, & Nwokoro, 2016; Hoyt, 1964; Mekara, 2020; Meyer, 2000). Hoyt premised his theory on the residential rent pattern and transportation development impacts resulting from a study of 34 American cities (Harris & Ullman, 2020). The study's main finding was that rent patterns changed regardless of the concentric zones (Fyfe & Kenny, 2005). Furthermore, high rent areas were in more than one sector of the city (Burgess, 2011; Hoyt, 1964; Mekara, 2020).

Hoyt argued that urban land use change activities grew in the form of sectors radiating along the major transportation arteries from the CBD (Burgess, 2011; Hoyt, 1964; Mekara, 2020). Activities throughout each sector were considered similar and land use would remain the same

due to the attraction of similar activities. For instance, industries remained in the same sector that expanded outwards as the demand for land increased because they were located along transportation routes (Mekara, 2020). Equally, high class low density residential areas would remain like that as expansion took place because only the rich would afford to live there (Hoyt, 1964; Mekara, 2020).

The Hoyt sector model explains Lusaka urban's land use pattern from independence up to recent times when the land use pattern changed. Initially, the eastern part of the city was for low-density residential areas such as Kabulonga, Rhodespark, Longacres and Thornpark (along the Great East Road) while industries were located on the western side of the city adjacent medium-density areas such as Matero township and high-density areas such as Kanyama, Misisi and John Laing (along the rail line, the Livingstone and, Great North Roads).

Hoyt's model explains the reasons for industrial location and the role of the major transportation arteries in urban LUC and the effects on the socioeconomic and spatial attributes of urbanising cities. The concept of economic rent coupled with ecological factors also explain urban LUC in the context of urbanising cities (Hoyt, 1964). As contemporary urban scholars (Brenner, 2009; Brenner, 2016; Brenner, 2018; Brenner, Madden, & Wachsmuth, 2011; Derickson, 2015; Goonewardena, 2018; Habermas, 1987; Hersperger et al., 2020; Nuissl & Siedentop, 2021; Oswin, 2018; Oswin & Pratt, 2021; Ramachandra, Aithal, & Sanna, 2012; Ranagalage, Morimoto, Simwanda, & Murayama, 2021) argue, urbanisation is more than changes in socioeconomic and spatial characteristics of a given city. It encompasses a host of other aspects including ecological, political, and administrative processes.

Hoyt's theory also tends to explain the outward expansion of affluent neighbourhoods as they tend to expand towards places with scenic views, high and safer grounds, and more open views regardless of the distance to the CBD, major transportation routes and the provision and location of basic social amenities (Hoyt, 1964; Mekara, 2020). Affluent neighbourhoods tend to expand outwards as transportation is not an issue as well as basic social amenities. The affluent urbanites can drive themselves to the CBD for instance, as they can afford and maintain private transportation arrangements. A good example would be neighbourhoods such as New Kasama and Meanwood Ibex Hill in Lusaka whose affluent families typically work from the CBD and take their children to schools as far as Rhodespark and the Lusaka International schools using their own transport without relying on the major transportation routes dotted around the city.

Hoyt's theory is, however, deficient. To begin with, private transport which is what most people living in urban areas use to commute between their residential areas, basic social amenities, and the CBD was overlooked. The theory does not account for multiple business centres, the case in today's rapidly urbanising cities around the world, making it a monocentric representation of cities (Meyer, 2000; Murphy, 2017). The model does not account for out-of-town developments such as multiple shopping centres and office space locations which have become a common urban land use scenario in the 21st century where people use their private transport to get around (Mekara, 2020; Zhang, 2016). One cannot talk about land use change and urbanisation without factoring in the role of private transportation systems and networks within the confines of a given city.

According to Zhang (2016), Hoyt's theory ignores other factors that might account for urban LUC such as physical features that can restrict development along those sectors. Besides, as argued by Boal (2007), every city is geographically and historically unique as locations are not shared and each city is an expression of its own rich collection and representation of life over the years unique to that city. No two cities are the same regardless of their status and description of being developed or developing country cities. It would be folly to use a *'one size fits all'* [emphasis supplied] approach to urban land use change as that overlooks the peculiarity of each given city including Lusaka.

2.3.1.1 Application of the Sector Theory of Urban Growth and Land Use to this Study

The Hoyt sector theory of urban growth suggests that cities grow and develop in a series of sectors or wedges that radiate outward from the central business district also known as the city centre (Hoyt, 1964). The theory suggests that as cities grow and expand outwards, land use and development patterns are influenced by transportation routes and other factors such as industrial location (Adams, 2005; Hoyt, 1964). According to Harris and Ullman (2020), Hoyt's sector model suggests that city growth favours certain areas/sectors along transportation lines as they tend to be more desirable for both residential and commercial purposes attributed mainly to accessibility and land value. The application and use of the Hoyt model in this study on urbanization and urban land use change provided insights into Lusaka city's historical and contemporary transformation and development.

An analysis of Lusaka city's major transportation routes suggests that the Hoyt sector model applies to the study's understanding of the city's major transportation routes such as roads and railway lines. Various scholars point out that Lusaka urban district's major roads and railway

line were constructed decades ago (Chigudu & Chavunduka, 2021; Chileshe, 2018; Chiwele et al., 2022; Hall, 1965). According to Mulenga (2003); Monde (2023); Chileshe (2018), the city first developed along the major transportation arteries radiating outwards from the CBD. As noted by Mulenga (2003), Lusaka was initially a small narrow village of the Soli people that later developed along the line of rail running from South Africa to the Congo DR. Chungu and Dittgen (2021), equally note that the growth and development of the city has to a large extent been influenced `by the presence of the major transportation lines running through the city as suggested by the Hoyt model. Even today, development patterns of the city of Lusaka have mainly been characterised by the existence of the major transportation routes and public transportation routes.

An analysis of the layout of the city, its residential areas and patterns of urban land use changes conform with the sector model of urban growth and land use change. As the city took shape and form, the initial settlers settled in distinct high and low-density areas, a trend that has continued to date but with the addition of the middle class (Mulenga, 2003; Williams, 1986). The eastern part of the city was for low-density white settlers while the western part of the city was designated for industrial location, a trend that can still be observed today albeit with a few isolated industries located elsewhere in the city (Li & Siame, 2020; Mulenga, 2003; Williams, 1986).

Li and Siame (2020) further argue that certain areas or sectors of Lusaka city attract higher rent as the value of land is deemed high and of more value as compared to other areas. For instance, it is well-known factor that upmarket areas fetch more than certain peri-urban or high-density areas in Lusaka. The cost of rent and land is more expensive in Meanwood Ibex Hill and Roma Park compared to similar pieces of land/houses located in Garden Chilulu or Mtendere East thereby proving the theory right (Chiwele et al., 2022; Chungu & Dittgen, 2021). Furthermore, the cost of land and rent decreases as one moves away from the CBD. This has further led to gentrification and the urban divide where you have the affluent in gated communities while the urban poor are internally displaced and further pushed to substandard areas that are sometimes not fit for human habitation (Simwanda & Murayama, 2018; Simwanda et al., 2020). Further, public transportation and market availability has also influenced the creation of high-density areas including informal settlements around the city (Mekara, 2020; Mulenga, 2003).

The model was also applicable to the study as it helped the study to understand and appreciate industrial location and why industries are located where they are located (Mekara, 2020). The

theory also helped to explain why commercial centres and industrial centres are concentrated where they are. According to Hoyt (1964) and Burgess (2011), major infrastructure and amenities are equally located along the major transportation line e.g. the University of Zambia, the University Teaching Hospital and some of the earliest schools that were built around the city. The study, through the Hoyt sector model lens, revealed that Lusaka has undergone massive shifts in land use owing to the changing economic, social, cultural, political and environmental factors.

It is, however, worth noting that the Hoyt model, as much as it offers valuable insights into the growth and development of the city, is somehow flawed. Its major flaw is that it oversimplifies complex urban realities (Murphy, 2017; Zhang, 2016). As Boal (2007) argues, the growth and development of any given city is a combination of factors (such as its historical context, environmental and ecological factors, socio-economic and political dynamics) that work in harmony, over time, to weave and produce the fabric of its uniqueness. Other contemporary factors account for the urbanisation of cities and shifts in urban land use that play a significant role in the narrative of each city (Murphy, 2017). Suffice to mention, the Hoyt model was used as a tool that was applicable to the analysis of urbanisation and urban growth, development, and LUC in Lusaka. The following paragraphs are dedicated to the discussion of the CUT that will equally be used to explain the study's findings in Chapter 5.

2.3.2 The Critical Urban Theory

Critical urban theory refers to the writings of radical and contemporary urban scholars post the 1968 period (Brenner, 2009). According to Brenner (2009), the term *'critical theory'* was first coined by Max Horkheimer in New York city in 1937 and was later developed and popularised by his associates Theodor Adorno, Herbert Marcuse, and later, Jürgen Habermas in the 1980s. Critical theory emerged as a break from the orthodox forms of Marxism that were prevailing at the conception of the Frankfurt School (Bohman, 2003; Habermas, 1987). In the mid-1960s, Herbert Marcuse, who considered the critical theory as a critique of capitalist society, arguably presented the critical theory's most charged vision in 1964 in his classic book, *One-Dimensional Man* (Brenner, 2009). Prominent radical urban scholars included Henri Lefebvre, David Harvey, Manuel Castells, and Peter Marcuse, while contemporary critical urban scholars include Neil Brenner and Christian Schmid (Ruddick, Peake, Tanyildiz, & Patrick, 2018; Wilson & Jonas, 2018).

Various contemporary theories have been advanced by scholars in trying to explain the urbanisation of cities worldwide. Brenner and Schmid (2015) argue on planetary urbanisation theory that cities must now be considered as one entity as more than 70% of the world's population will be living in built-up areas by the year 2050. Further, cities now lack boundaries conceptually and empirically and, they now form an important agenda of the global urbanisation process (Storper & Scott, 2016). According to Robinson (2011), Roy (2011) Storper and Scott (2016), new urban theory suffers from intellectual parochialism besides being a global north-oriented explanation of the urbanisation of cities.

The new urban theory cannot claim universality while the assemblage theory portrays the urbanisation of cities as a complex network of interrelated urban contents and relationships but does not adequately address the urban question (Rankin, 2011). Scholars have argued that most urban theories are deep-rooted in the global north, based on a handful of sample cities, and mostly assume that *all* cities are homogenous when not (Brenner, 2018; Goonewardena, 2018; Rossi, 2019; Schmid et al., 2018).

This study will adopt the critical urban theory as it best explains the urbanisation of Lusaka and the subsequent shifts in urban land use. This theory does not conform to the common theory of urban knowledge or mainstream urban theory (Brenner, 2009; Brenner, 2016; Brenner et al., 2011; Schmid, 2018). On average, most urban theories or mainstream urban theories are rooted in the inherited disciplinary divisions of market driven and market oriented, technocratic, division of labour forms of urban knowledge (Brenner, 2009; Brenner et al., 2011; Oswin, 2018; Ruddick et al., 2018; Schmid, 2018). The critical urban theory does not conform to the mainstream urban theory's affirmation that, urbanisation reflects historical social organisation, economic efficiency, and administrative rationality (Brenner et al., 2011; Goonewardena, 2018; Wilson, Boodram, & Smith, 2019).

The critical urban theory instead, emphasises that urbanisation and urban processes are multifaceted (Goonewardena, 2018; Rossi, 2019; Schmid, 2018). This is where urbanisation is a continuous construction of urban knowledge, political and social ideologies, historical social-cultural organisation, and the dynamic nature of urban space (Wilson & Jonas, 2018). The reasons advanced are that the world is now moving towards global urbanisation and not just urbanisation of individual cities in various parts of the world (Brenner et al., 2011; Ruddick et al., 2018; Wilson et al., 2019; Wilson & Jonas, 2018). CUT further argues for the existence of alternative ways of understanding and explaining urbanisation, alternative ways that are socially inclusive, sustainable, and democratic. Alternatives ways involve the critique of

existing ideologies (theories), inequalities, exploitation, power, and injustices (Brenner, 2009; Simone, 2020; Wilson et al., 2019).

The world is moving towards a global 'urban transition' as cities are urbanising at unprecedented rates where over half of the world's current population lives in urban areas or cities (Brenner, 2009; Brenner et al., 2011; Simone, 2020; Wilson et al., 2019). CUT argues that the inherited urbanisation theories do not even begin to explain or help us to understand the complexities associated with the new urban transition (Brenner et al., 2011) hence the study's use of the critical urban theory.

Urbanisation theories of the 20th century remain inadequate (Brenner & Schmid, 2015). This is owed to the unprecedented, dynamic, and volatile nature of contemporary global urbanisation that renders the inherited methods and concepts for understanding the transformation of cities in the 21st century inadequate (Goonewardena, 2018; Leitner & Sheppard, 2015; Oswin, 2018; Rossi, 2019). Particularly, Roy (2011), Scott and Storper (2015) and, Robinson (2016) argue that the current urban theory surfers from intellectual parochialism attributed to overwhelmingly being rooted in the global north. It would be absurd to claim universality when the theory does not entirely suit the African urbanisation context hence the need to question its applicability to the Lusaka context of urbanisation. Moreover, most urban theories are built on limited or weak data sets that may even be outdated at times (Brenner, 2016; Brenner et al., 2011; Schmid, 2018).

While urban theories' narrative is mainly premised on the idea that cities are now urbanised because half of the world's population lives in cities, the critical urbanisation theory instead, captures the complexities of contemporary urbanisation in a modest intellectual metanarrative (Brenner, 2009; Goonewardena, 2018; Roy, 2009; Scott & Storper, 2015). As Swyngedouw (2006, p. 35) rightly put it, urbanization itself is retheorized as;

"a metabolic circulatory process that materializes as an implosion of socio-natural relations, a process which is organized through socially articulated networks and conduits".

and the critical urban theory embraces the substantial rethinking of existing urban theories (Brenner et al., 2011). Besides that, most scholars (Brenner, 2009; Brenner et al., 2011; Derickson, 2015; Oswin & Pratt, 2021; Ruddick et al., 2018; Schmid, 2018; Wilson & Jonas, 2018) agree with the assertion that the critical urban theory offers some core building blocks or basis upon which to refine urbanisation theory.

Some inherent weaknesses of the critical urban theory have however been noted. In its current form, it lacks readily available analytical tools to explain and interpret the rapid urbanisation and transformation of urban areas worldwide (Brenner, 2009; Brenner et al., 2011; Schmid, 2018). It is equally devoid of a satisfactory explanation of urbanisation processes just like urban theories. Besides the failure to decipher the contemporary urbanisation of cities worldwide, CUT is more of a western or global north theory of urbanisation built on ideas that do not mostly fit the global south narrative of urbanisation and urbanisation processes.

As Oswin (2018) rightly put it, the critical urban theory emanates a western-centric bias as it is based on a sample of limited western world cities at the expense of the rest of the world (Robinson & Roy, 2016) and, it tends to be totalising (Derickson, 2015; Ruddick et al., 2018). It is further, based on similar defined characteristics of urbanisation determined by patterns and trends observed mostly in the global north, leaving out the global south cities modelling theories that do not fit their narrative or context.

Ruddick et al. (2018) argue that cities across the world can be studied as individual entities or cases with unique contexts and spatial characteristics as they tend to have considerable empirical variation. And, for the critical urban theory to remain relevant both intellectually and politically, it must continue to explore contemporary socio-spatial relations (Brenner et al., 2011) in various ways that will contribute to a genuinely critical approach (Roy, 2009) to the current urban transformations relevant to local and broader urbanisation dynamics, struggles and trajectories (Brenner, 2009; Roy, 2009; Roy, 2011).

Without Africa, global urbanism is an absurdity. It is inappropriate for urban scholars, based on a somewhat limited sample of global north cities, to make theoretical claims for Africa when their theories have no contextual purchase here. In this regard, there is urgent need for scholars especially in the global south, to provide the empirical basis of urban theories that will fit the urbanisation narrative of African cities to begin with. There is need for a global narrative on urbanisation but with locally relevant and applicable theories. That way, urbanisation studies in the global south will be based on the local context unlike what is prevailing right now:

> *"Either Africa must be ignored, or the theory, method and data of urban studies must change"* (Robinson & Roy, 2016, p. 2).

2.3.2.1 Application of the Critical Urban Theory to this Study

The critical urban theory is a theoretical framework that examines urban processes from a critical and often interdisciplinary perspective (Brenner, 2009; Brenner, 2018). The theory, focuses particularly on the social, economic, political, and environmental dimensions of urbanisation (Brenner et al., 2011). Despite its inherent weaknesses highlighted in the previous section, the critical urban theory has been chosen and used to underpin this study. The choice and subsequent use of the critical urban theory is based on its outstanding strengths that apply to the context of this study.

The use of this theory in this study provided valuable insights into the complex dynamics of Lusaka, a rapidly urbanising city in SSA (Simwanda, 2018). According to Mubanga (2019); Li and Siame (2020); Monde (2023), an array of complex urban dynamics including rapid urbanisation and urban population growth, power structures and land power relations, social justice issues, and inequality characterise the Lusaka urban district of Zambia. Hence, this study's use of the CUT provided some much-needed insights into the complex socio-economic, political, and environmental or ecological dynamics that shape Lusaka city's growth and development.

According to Brenner (2018), CUT places much emphasis on the importance of understanding that the urbanisation process is deeply rooted and embedded in power structures, social inequalities, and the historical legacies of cities. The historical context of Lusaka's urbanisation process shed light on the colonial, post-independence, and current policies (Chungu & Dittgen, 2021). CUT also highlighted how policies impact the current land use patterns, property rights, land tenure systems and access to land resources, especially for the urban poor and vulnerable (Mushinge, 2017). CUT greatly helped the study to understand how decisions, plans and policies made in the past have continued to affect and influence the present urban LUC narrative in various urbanising cities with particular interest and focus on Lusaka.

As postulated by Brenner and Schmid (2015), CUT was cardinal to the understanding of how rapid urbanisation, LUC policies and management, globalisation, and international investments feed into LUC decisions, the concentration of wealth and the ultimate internal displacement of marginalised groups in the context of Lusaka urban. It is an undeniable fact that foreign investments, multinational corporations, political elites, and many other international actors do play a huge role in the urbanisation narrative and the subsequent change in the urban landscape

(Brenner, 2018; Chigudu & Chavunduka, 2021; Foley et al., 2005; Hampwaye et al., 2020; Li & Siame, 2020; Li et al., 2017).

Hampwaye et al. (2020) further argue that as urban land changes from formerly agricultural to urban use for instance, the urban poor are displaced from their initial habitats. Blaikie et al. (2014) go on to state that often times, the poor end up inhabiting places that may otherwise, not be fit and suitable for human habitation. As noted by Simwanda et al. (2020) this automatically puts their lives at risk and, they become susceptible to various urban injustices such as the lack of or inadequate provision of basic social amenities and services. Monde (2023) also notes that the habitation of such areas further threatens fragile ecological wellbeing and the lives of all living things including human beings.

Lusaka, like many other developing and urbanising cities in SSA, Zambia has a dual land tenure system (Munshifwa, 2018). According to Robinson and Roy (2016), CUT emphasises on the importance of understanding how urban land is owned, distributed, and accessed by all urbanites, especially in the Lusaka urban district setup. In the context of this study, it involved investigating land access, ownership/change of ownership, land use change, land power relations, and land speculation for urbanisation purposes. In line with this, the study further explored how the urbanisation of Lusaka has led to socio-economic inequalities that include unequal access to the provision of basic social amenities and services using CUT (Li & Siame, 2020; Robinson, 2011). As the study further revealed, CUT helped to explain the role played by informal settlements, internal and external displacements, and gentrification on perpetuating these urban inequalities (Roy, 2011). CUT was relevant in this study as it highlighted and recognised the indispensable experiences of individuals within the urban landscape and how these are ultimately affected by Lusaka's LUC and urbanisation.

Using the critical urban theory, the study was able to analyse the environmental and ecological consequences of urbanisation in Lusaka (Monde, 2023). These include pollution in its various forms, deforestation, the displacement of ecosystems, water scarcity, floods, and droughts. According to Brenner (2018), CUT emphasises the need to examine the link between environmental injustices and social, economic, and political disparities. A critical analysis of these factors in this study led to the evaluation of urban land use policies and planning and how these may further challenge or reinforce the existing political economy of land, power structures, relations, and urban inequalities (Mubanga, 2019). This further helped to examine

the roles played by various players such as government ministries and agencies, NGOs, and international organisations in shaping urbanisation and LUC policies in Zambia.

CUT emphasises on a multi methods approach to a holistic understanding of urbanisation hence the use of mixed methods, a mixture of both quantitative and qualitative research methods (Creswell & Clark, 2017; Creswell & Creswell, 2017; Hesse-Biber, 2010). These included interviews, questionnaires, desk research, and spatial analysis in a bid to gather data and provide evidence that support CUT's assumptions. The use of mixed methods provided insights into the growth of informal settlements in Lusaka (they house the urban poor and vulnerable), the urbanisation of the city and how they relate to LUC (Chiwele et al., 2022). The study was able to analyse the living conditions in the informal settlements, the daily struggles of poor urban residents and the policies and practices that impact them on a day-to-day basis.

Overall, the use of CUT in the context of urbanisation and urban LUC in Lusaka city provided this study with a more holistic understanding of the city's growth and development trajectory. The theory equally helped to uncover the hidden power dynamics, urban social inequalities, and the challenges faced by marginalised communities, in this case, the urban poor and vulnerable people in the context of urbanisation and urban LUCs (Li & Siame, 2020). Using the CUT, the study hopes to provide policy recommendations that will inform more equitable and sustainable urban planning that will be in line with SGDs especially number 11 that talks about sustainable cities.

2.4 LITERATURE REVIEW

This section of the study reviews literature that is relevant to the topic at hand. This section of the study is indispensable as it reviews and synthesises existing studies on the topic both historical and contemporary. It is the literature review section of the study that offers a comprehensive understanding of the topic under study and further helps to identify gaps in the existing arguments and discussions of contemporary studies. In this regard, various studies, historical and contemporary, relating to this study and the associated concepts were reviewed and discussed in this section.

2.4.1 Drivers of Land Use Change

Land use and land cover change are not static, they change over time. As noted by Izakovičová et al. (2017), land use change at a global level is influenced by various drivers, including

economic, demographic, social, and environmental factors. Teixeira, Teixeira, and Marques (2014) refer to drivers of LUC as any natural or human-induced factors that cause a change in ecosystem functions and the provision of ecosystem goods and services. Drivers of land use change are natural factors and human-induced activities that alter the ecosystem's normal functioning directly or indirectly. According to Elliott (2002), natural drivers are naturally occurring factors that cause a change in the ecosystem while human-induced drivers are anthropogenic activities that result in a change in the wellbeing of an ecosystem or, alter an ecosystem's functionality.

Land use change is a critical issue with profound implications for ecosystems, biodiversity, climate change, and human well-being. According to Alexander et al. (2015); Meyfroidt et al. (2013); Lubowski et al. (2008), an understanding of the drivers of land use change at the global, regional, and local levels is essential for effective urbanisation, urban development, land management and, policy development. In their study, Song et al. (2018) found out that drivers of land use change include demographic and population dynamics, economic factors, policy and governance, and technological innovations all of which exert significant influence on land use change globally.

Demographic and population dynamics play a significant role in driving land use change at a global level. Song et al. (2018); Wu et al. (2021) are all in agreement that the growth, distribution, and movement of human populations have profound effects on land use patterns, particularly through urbanization and rural-urban migration. Meyfroidt et al. (2013) in their study titled Globalization of Land Use: Distant Drivers of Land Change and Geographic Displacement of Land Use, also found out that rapid population growth can lead to increased demand for housing, infrastructure, and resources, resulting in the conversion of natural habitats to urban or agricultural land.

As the urban populations grow, so do the requirements for more food, leading to the expansion of agricultural land and intensification of farming practices (Mweemba & Monde, 2018; Simatele et al., 2012). Population growth further influences urban consumption patterns and the demand for goods thereby driving urban land use change. Teixeira et al. (2014) also support this assertion in their study of land use changes, drivers of land use change and their water quality implications. The study's significant finding was that land use changes have a bearing on human wellbeing especially urban water provision.

Migration from rural to urban areas is another significant driver of global land use change (Tacoli et al., 2014). Venables (2018) is of the view that as people migrate from rural to urban areas in search of employment opportunities and improved living standards, urban areas expand, mostly at the expense of agricultural or natural land. Murayama et al. (2015) equally argue that economic opportunities, improved infrastructure, and access to services attract people to urban areas, resulting in the abandonment or conversion of agricultural land. Empirical evidence suggests that migration leads to the expansion of informal settlements or slums, which mostly occupy marginal or ecologically sensitive land (McCusker & Carr, 2006; Meyfroidt et al., 2013; Moretti, 2014; Müller & Munroe, 2014; Nuissl & Siedentop, 2021; Onyebueke et al., 2020; Roy, 2011; Simwanda et al., 2020; United Nations, 2019).

Monde (2023) further notes that urbanisation alters land use patterns, leading to the loss of biodiversity, fragmentation of ecosystems, and increased pressure on resources. Simwanda et al. (2020) in their study, modelling urban land use change in Lusaka urban district also found out that urban population growth and urbanisation result in land fragmentation, where large land areas are divided into smaller parcels due to increased demand for housing and infrastructure. Li et al. (2017) further agree that land fragmentation has disrupted ecological processes, decreased agricultural productivity, and limited opportunities for sustainable urban land use management practices that can sustain urban populations regardless of their social status.

Emerging literature seems to suggest that policy and governance frameworks play a significant role in shaping land use change patterns see (Bhatasara, 2020; Nuissl & Siedentop, 2021; OECD/UNECA/AfDB, 2022; Ranagalage et al., 2021; Ruddick et al., 2018; Simwanda et al., 2020). Individual countries, regional policies and, institutions in place influence land tenure systems, land use planning, agricultural practices, and conservation efforts across the globe (Adams & Turner, 2005; Brenner, 2018). Chitonge and Mfune (2015); Chigbu, Alemayehu, and Dachaga (2019) argue that the structure of land ownership and access rights especially insecure land tenure have a profound impact on land use change.

In their separate studies, Mubanga (2019); Munshifwa (2018) revealed that insecure land tenure leads to land degradation, deforestation, and unsustainable practices, as individuals or communities lack incentives for long-term land stewardship. This is further exacerbated by the lack of effective land use planning and zoning regulations (Mubanga, 2019). As noted by Lupale and Hampwaye (2019), planning and zoning regulations are crucial for guiding and managing land use change especially in the urban context. It can also safeguard ecologically

sensitive areas and ensure the sustainable use of urban land resources especially (Foley et al., 2005; Monde et al., 2023). Simooya (2012) however argues that adequate environmental knowledge at an individual, community and national level is a prerequisite to the safeguarding of ecologically sensitive areas and the sustainable use of environmental and natural resources.

According to Hartter and Ryan (2010); Frélichová (2014), effective governance structures, including institutions, laws, and decision-making processes are essential drivers of land use change. Jehling and Thomas (2016); Wu et al. (2021); Lubowski et al. (2008) all assert that the lack of institutional arrangements that facilitate stakeholder participation, transparency, and accountability to help balance competing interests and ensure sustainable land management can be detrimental. On the other hand, global agreements and treaties, such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD), have implications for land use change (Li et al., 2017). These agreements promote sustainable land management practices, biodiversity conservation, and climate change mitigation and adaptation. They furthermore provide frameworks for international cooperation and influence national policies and actions related to land use change across the world (Meyfroidt et al., 2013).

Technological innovations have a significant impact on land use change at a global level. Scholars have argued that remote sensing and geospatial technologies, such as satellite imagery, Geographic Information Systems (GIS), and Global Positioning Systems (GPS) have revolutionized land monitoring, assessment, and planning (Hirschheim, Klein, & Lyytinen, 1995; Jehling & Thomas, 2016; Li et al., 2017; Monde et al., 2023). These tools enable accurate mapping and monitoring of land cover and land use changes, deforestation, urban expansion, and other land use dynamics at the global, regional and local levels (Simwanda & Murayama, 2017). They provide valuable information for global land use planning, environmental impact assessments, and monitoring the effectiveness of conservation efforts (Membele et al., 2022).

While certain drivers may have global relevance, their relative importance and interactions can differ across regions. At the regional level, studies conducted suggest that there are various drivers of land use change which range from urban population growth and urbanisation, rural-urban migration, agricultural expansion, infrastructural development to climate change, policy and governance, market forces and globalisation (Kassouri & Alola, 2022; UN-Habitat, 2020).

Olorunfemi et al. (2022) are of the view that understanding the key drivers of land use change in Sub-Saharan Africa is crucial for formulating sustainable land management policies and

practices as well as the creation of an enabling environment for sustainable urban livelihoods especially. Olorunfemi et al. (2022) further assert that addressing the drivers of land use change in SSA requires integrated approaches that consider the social, economic, and environmental dimensions of land use change, while involving multiple stakeholders and promoting equitable and inclusive land governance systems.

According to Olorunfemi et al. (2022), rapid urban population growth and urbanisation in SSA have consequently given way to the increased demand for housing, infrastructure, and economic activities. This ultimately results in the conversion of natural and forest land to pave way for urban expansion (Olorunfemi et al., 2020). This assertion is consistent with various studies (see Simwanda and Murayama (2018); (Thuo, 2013; Venables, 2017; Wragg & Lim, 2015; Wu et al., 2021) findings that the influx of people into urban centres resulting from rural-urban migration contributes to the growth of SSA cities, leading to changes in land use patterns as agricultural land is converted to various urban uses.

Olorunfemi et al. (2022); Olorunfemi et al. (2020); Hampwaye et al. (2020) further note that the expansion of commercial agriculture, driven by increasing urban food demand and export-oriented production, leads to the conversion of natural ecosystems and forests into agricultural land. Between 1990 and 2010, agriculture in Africa alone accounted for 10% of the total forest land loss while agricultural expansion further accounted for a whopping 70% of the total forest land loss (Olorunfemi et al., 2022). For SSA particularly, it is small-scale agriculture and shifting cultivation practices that contribute to land use change (Mulolwa, 2016; Munshifwa, 2018; Nolte, 2014).

Within the land ecosystem, modifications in the spatial extent of urban centres can be significant enough to cause substantial adjustments in hydrology, climate and biogeochemistry at local, regional and global levels (Li et al., 2017). According to Ross et al. (2021), environmental factors including fossil fuels combustion, climate change impacts such as changes in rainfall patterns and temperature, mining, coupled with urbanisation are all drivers of land use change in SSA. Olorunfemi et al. (2022); Henry et al. (2011), further assert that the increasing frequency and intensity of extreme weather events, such as droughts and floods for instance, lead to land degradation and loss of productive land in SSA.

According to Foley et al. (2005), loss of productive land ultimately affects agricultural productivity, forcing farmers in SSA to adapt their land use practices. In some cases, farmers and the vulnerable end up drifting to urban centres in search of better livelihood options thereby

increasing the already swelling urban population figures. Monde (2023) points out that most poor and vulnerable people in urban areas end up settling in ecologically compromised areas that further put their lives at risk of harm and injury due to unsafe living conditions and environments.

The assertion by Herrmann, Brandt, Rasmussen, and Fensholt (2020); Henry et al. (2011) is that the rapid urban expansion in SSA driven by urbanisation and the growing human population have overtaxed the environment such that it has exceeded it carrying capacity. The resultant human-environment footprint is evident in various ways that include ecological imbalances, cultural and socioeconomic instability, the threat to urban food security, hydrological processes, and the carbon cycle (Côté-Roy & Moser, 2019; Erb et al., 2009; Ross et al., 2021). Most environmental factors together with some of the natural occurrences affect the carbon cycle.

Olorunfemi et al. (2022); Ross et al. (2021) are of the view that land use changes in the form of urbanisation and urban expansion, deforestation and forest land depletion are the major contributors to regional carbon emissions and globally, SSA countries contribute about 15-20%. The authors further impute a third of all the emitted greenhouse gases in SSA to urban population growth, land use change, urbanisation, and agricultural related activities (Olorunfemi et al., 2022; Ross et al., 2021). Furthermore, Herrmann et al. (2020) point out that all these land use activities have impacts that are altering the entire landscapes of SSA with consequent impacts on the global carbon cycles, climate, and the earth's nutrients. Li et al. (2017) equally argue that as long as urbanisation and urban population growth continue, LUC will continue placing a strain on ecological resources in SSA countries.

Where land use change policy and governance are concerned, various scholars are all in agreement that most SSA countries suffer from weak land governance systems which are major drivers of LUC, see (Collier & Venables, 2017; Holden & Otsuka, 2014; Home, 2021; Kombe, 2005; Palmer, Fricska, & Wehrmann, 2009; Steel et al., 2019; Van Leeuwen et al., 2018). Lombard and Rakodi (2016); Rutherford (2017) also point out that there are inadequate and weak land governance institutions and systems, poor land use change policies that are mostly centralised, political uncertainty and lack of political will and, the inadequate ability of land use managers in some instances in SSA. Allsobrook (2019) equally asserts that unclear land tenure arrangements, and inadequate land use change planning and monitoring are key drivers of LUC as they contribute to unsustainable land use practices and conflicts over land resources in SSA.

Mudimu, Zuo, Shah, Nalwimba, and Ado (2020); Mujeyi (2021) argue that inconsistent or poorly enforced land use and land tenure policies and regulations contribute to uncontrolled land use change in most SSA countries. Equally, Holden and Otsuka (2014)'s study of the roles of land tenure reforms and land markets in the context of population growth and land use intensification in Malawi, Kenya, and Uganda, aligned with these assertions. Their study's findings attributed the growing shortage of agricultural land in densely populated rural areas to weak tenure rights, land governance systems and land abundance causing an influx of international investors (Holden & Otsuka, 2014). Most of the times, it is the urban poor and vulnerable who experience the pinch of foreigner's influx through internal and external displacements and, a reduction in agricultural land among others.

Decreasing agricultural land influences urban populations in various ways. For instance, it poses a food security risk and the attainment of the SDGs; specifically, goal number two which talks of zero hunger for all people worldwide (Herrmann et al., 2020; Olorunfemi et al., 2020). Achieving this and all the other SDGs requires deeper insight and an understanding of the impacts of the human-environment-urbanisation nexus and the drivers of land use change to enhance the sustainable development of SSA urban areas (Wu et al., 2021).

According to Li and Siame (2020); Manda et al. (2019), large-scale land acquisitions by foreign investors for infrastructure development and resource extraction significantly contribute to land use change in SSA's urban areas. Li and Siame (2020) further point out that infrastructure development such as the construction of roads and railways, dams, mining operations, and other infrastructure projects requires land. According to Lombard and Rakodi (2016); Allsobrook (2019), these activities lead to the displacement of local communities mostly the urban poor and vulnerable groups. Li and Siame (2020) further point out that large-scale land acquisition especially by foreign nationals and multinationals results in the conversion of formerly agricultural and forest land for industrial, commercial, high-end residential, and or transportation purposes.

According to Kassouri and Alola (2022), market forces and globalization are key drivers of land use change at the regional level. As the regional urban population grows, the need for food and other requisite resources increases and so does the need to supply the regional and even global markets (Alexander et al., 2015; Foley et al., 2011). Global and regional market demands for commodities such as timber, minerals, and agricultural products, influence and drive land use decisions (Meyfroidt et al., 2013).

Li and Siame (2020); Erb et al. (2009) argue that the changing human food and requisite resources consumption patterns attributed to increasing wealth are more land intensive thereby leading to the expansion of extractive industries and large-scale commercial agriculture. Li and Siame (2020); Erb et al. (2009); Meyfroidt et al. (2018) further note that the globalisation of food needs and supply, increasing trade liberalisation, regional trade in agricultural products and, foreign investments all shape the SSA regional land use change patterns to the extent of sometimes prioritising export-oriented activities over local food production.

Zambia, just like the sub-region and global level, is subject to various drivers of land use change. According to Phiri, Morgenroth, and Xu (2019); Handavu, Chirwa, and Syampungani (2019); Masumbu (2018), land use change in Zambia is driven by several demographic and socioeconomic factors that are interconnected and interact with each other in exacerbating the impacts of land use change. Zambia has one of the highest urban population growth and urbanisation rates in SSA. Monde (2023); Hampwaye et al. (2020); Simwanda et al. (2020) Li and Siame (2020); Mweemba and Monde (2018) all note that the fast-paced urbanisation of Zambian cities coupled with the rapidly increasing urban populations have exerted pressure on land resources due to the corresponding increase in the demand for food, housing, infrastructure, urban developments and other requisite goods and services.

According to Hampwaye et al. (2020); Monde (2023), land on the city fringes, forests and peri-urban areas in Lusaka is being converted from natural ecosystems to agricultural but mostly urban use. This has consequently led to land degradation, deforestation, loss of biodiversity and consequently loss of ecological resilience. In some instances (Kalingalinga compound for instance), the urban poor and vulnerable people are being displaced internally to pave way for urban developments and related urban land uses such as commercial and industrial (Li & Siame, 2020).

According to Chungu and Dittgen (2021), Zambia's economic growth and development have been cited as a driver of LUC especially in urban areas. Chiwele et al. (2022); Mushinge, Munshimfwa, and Shamaoma (2018) have all noted that Lusaka, of all cities in Zambia, has experienced rapid population growth and urbanisation leading to the increased demand for urban land. Chungu and Dittgen (2021) also cited urbanisation and infrastructure development precipitated by urban population increase as some of the major drivers of land use change in Zambia especially in Lusaka.

As much as these economic developments are inevitable and a good fit for an urbanising city, Li and Siame (2020); Monde (2023) argue that they come at a cost. Simwanda and Murayama (2018) further argue that urbanisation and urban population growth come with the construction and expansion of urban infrastructure such as communication and transport infrastructure including road construction, energy projects, housing, industrial and commercial buildings all of which have been cited as major drivers of land use change in Zambia. These projects require the conversion of land, leading to land use change and habitat fragmentation.

As cities grow, agricultural land and natural habitats are converted into urban areas and urban land use, resulting in the loss of productive land, ecological stability and biodiversity loss (Glaeser & Xiong, 2017; Monde, 2023). According to Hampwaye et al. (2020), agriculture, one of the dominant sectors employing a significant portion of the population in Zambia, is one of the major drivers of land use change. The expansion of agricultural activities, particularly for subsistence farming and cash crops such as maize, cotton, and tobacco, drives land use change (Manda et al., 2019).

As the country's urban population grows and the demand for food increases, commercial farmers clear out forests and convert grasslands into agricultural land, leading to deforestation and habitat loss (Manda et al., 2019; Simatele et al., 2012). Urban subsistence farmers on the other hand are pushed into forest areas as they must still produce food for their own consumption (Hampwaye et al., 2007). More often than not, these are urban poor and vulnerable populations whose livelihoods depend on agricultural activities although this is done at a smaller and domestic scale.

Mining, the cornerstone of Zambia's economy has been cited as a key driver of LUC as mining activities, especially open-pit mining has a substantial impact on land use change (Chungu & Dittgen, 2021; Mungu, 2017; Phiri et al., 2019; Simwanda & Murayama, 2018; Tumbama, 2019). Zambia, ranked among the world's top 15 copper producers is a natural resource-rich country (Mungu, 2017; Tumbama, 2019). Our natural resource base includes mineral resources such as copper, cobalt, emeralds, and other gemstones (Tumbama, 2019). Mungu (2017) in his study whose major findings were that mining-led developments were more beneficial to men than women, points out the crucial role played by the mining sector in Zambia's economy.

While Zambia is renowned for its mining activities, Lusaka on the other hand, is well known for its small-scale and commercial quarry mines that are dotted in different parts of the city. Tumbama (2019) argues that mining, especially large-scale mining massively contributes to

land use change in Zambia. Phiri et al. (2019) point out that mining and the expansion of mining activities result in various changes to land use patterns with both positive and negative consequences. It has been argued further that mining operations require large areas of land for infrastructure such as mine sites and processing plants, access roads, housing and social amenities for workers, waste disposal, and extraction activities (Mather, Needle, & Fairbairn, 1998; Meyfroidt et al., 2013; Olorunfemi et al., 2022; Phiri et al., 2019; Song et al., 2018; Wu et al., 2021; Zoomers et al., 2017). All these lead to land degradation, biodiversity loss, species extinction, habitat destruction and, pollution in various forms (Lambin et al., 2001; Matungu, 2021; Phiri et al., 2019).

Deforestation and soil/land degradation are also drivers of LUC in Zambia (Matungu, 2021). According to Meyfroidt et al. (2013); Rudel (2013); Moussa Kourouma, Phiri, Hudak, and Syampungani (2022); Hudak (2022), mining operations often require the clearing of huge tracts of land including forests to pave way for mining infrastructure. In turn, deforestation disrupts ecosystems, reduces biodiversity, and contributes to climate change (Olorunfemi et al., 2020; Olorunfemi et al., 2022). Mining activities lead to soil degradation due to the removal of topsoil and exposure of bare earth consequently rendering the land degraded (Kassouri & Alola, 2022). This results in erosion, loss of soil fertility, and reduced agricultural productivity in surrounding areas hence bringing to life, the threat to urban food security especially. Matungu (2021) argues that in some cases, the soil may become contaminated with heavy metals and other pollutants, rendering it unsuitable for farming for years on end, a case of the areas surrounding most of the mines on the Copperbelt of Zambia.

According to Tumbama (2019), mining operations generate large amounts of waste, including tailings and effluents, which can contaminate not just the soils but also the nearby water sources. Mining poses huge risks to human and animal health directly when water is used for human consumption and indirectly for irrigation (Matungu, 2021; Phiri et al., 2019; Winton et al., 2021). The detrimental effects on aquatic ecosystems due to the release of heavy metals and chemicals into rivers and groundwater aquifers can never be overemphasised (Mungu, 2017). According to Phiri et al. (2019) mining activities result in the fragmentation of land, with large mining concessions dividing areas that were once contiguous.

The fragmentation of land due to mining can disrupt wildlife habitats and migration patterns, further contributing to the loss of biodiversity. Tumbama (2019) further notes that mining projects by nature, require the resettlement or displacement of local communities living in the mining areas. This leads to the loss of homes and cultural identity, farmlands, and livelihoods

for affected communities. Tumbama (2019) conducted a study whose major finding was that the levels of compensation cannot adequately make up for what the displaced communities give up. He further argues that the resettlement process can have long-lasting social and economic impacts on these communities. An example in point is that the sense of belonging and cultural values which ensures the psychological wellbeing of individuals and communities, remain uncompensated (Mungu, 2017; Tumbama, 2019).

Logging and wood extraction are another key driver of LUC in Zambia. In their study, Phiri et al. (2019) noted that Zambia which has significant forest resources has been experiencing large-scale logging activities. Logging for timber extraction (which is mostly illegal) massively contributes to land use change patterns especially in the rural areas. Handavu et al. (2019); Olorunfemi et al. (2022); Ross et al. (2021) argue that unsustainable logging practices, such as illegal logging and clear-cutting, result in deforestation and the conversion of forests into other land uses especially urban development and expansion. Excessive logging coupled with other factors such as mining-induced pollution lead to changes in climate (Li et al., 2017; Rudel, 2013). Climate change impacts, such as changing rainfall patterns and increased frequency of extreme weather events, affect LUC and livelihoods in Zambia (Handavu et al., 2019). Olorunfemi et al. (2022); Henry et al. (2011); Moussa, Phiri, Hudak, and Syampungani (2022) further note that prolonged droughts can lead to the conversion of agricultural land into less productive uses or worse still, force communities to encroach on protected areas for survival.

Empirical evidence e.g., Munshifwa (2018); Mujeyi (2021); Mamabolo and Tsheola (2017); Kironde (2009) suggests that weak and ineffective land policy and governance are a key driver of LUC especially in urban areas. Various scholars agree that inadequate land use planning, weak land tenure systems, and ineffective enforcement of regulations contribute to land use change in Zambia (Chitonge & Mfune, 2015; Chitonge et al., 2017; Chiwele et al., 2022; Lupale & Hampwaye, 2019; Mandhu et al., 2019; Mubanga, 2019; Munshifwa, 2018). Several studies have revealed that a lack of clear land use policies and land rights can lead to unplanned and unsustainable land conversion, encroachment on protected areas, and conflicting land use practices (Collier & Venables, 2017; Holden & Otsuka, 2014; Home, 2021; Kombe, 2005).

As one may be aware, Zambia has been operating for a long time based on a draft land policy up until 2021 when it got its first Land Policy. The weak land governance systems that preceded Zambia's first land policy were lacking in certain aspects to do with protecting and managing the country's largest natural resource - land. Allsobrook (2019); Mudimu et al. (2020); Mujeyi

(2021) all argue that inadequate LUC planning, weak and unclear land tenure system lead to unsustainable LUC and in certain instances, conflicts over land thereby affecting livelihoods.

Addressing the drivers of LUC in Zambia requires a comprehensive approach that balances economic development, environmental conservation and, social considerations (Mubanga, 2019). To mitigate the negative effects of urbanisation, land use change and support the conservation of natural resources, Zambia needs sustainable land management practices, improved land governance, and the promotion of alternative livelihood options (Lupale & Hampwaye, 2019; Monde, 2023; Mulolwa, 2016; Mushinge & Mwango, 2017).

2.5 Urbanisation and Land Use Change: A Global Perspective.

There is widespread empirical evidence of the relationship between urban LUC and urbanisation in both developed and developing countries. Most scholars agree that urban LUCs are necessitated by mostly, urbanisation processes, industrialisation and rapid urban population growth e.g., Cahya et al. (2018); Nuissl and Siedentop (2021); Aziz, Ahmad, Mayo, Hameed, and Nadeem (2015); Akubia (2016); Biłozor and Cieślak (2021); Xie, Fang, Lin, Gong, and Qiao (2007). The effects are noticeable on both the biophysical environment and human beings with urban sprawl being the most pronounced. Tacoli et al. (2015); Collier and Venables (2017) however, postulate that many other factors lead to urban LUC such as urban planning, rural-urban migration, internal displacements, land use policies, land tenure and land rights among others.

Urbanisation has been cited by Nuissl and Siedentop (2021) as one of the key driving forces that account for the current global land use systems. Since time immemorial, land has been an important part of human existence assuming various uses such as agricultural, urban spaces and mostly settlements. According to Nuissl and Siedentop (2021); Tacoli et al. (2014); Collier and Venables (2017), the use of land for various purposes has been part of the development of the human civilisation process. Until the advent of industrialisation and massive urbanisation, land that covered settlements space was negligible and wasn't a subject of intense scholarly debate or conversation (Akubia, 2019; Nuissl & Siedentop, 2021). According to Mweemba and Monde (2018), many regions, societies, and communities around the world were initially, mainly rural and agrarian economies. Masumbu (2018) however, notes that many societies have over time, evolved from being rural and agrarian to the current urban areas.

Various scholars e.g., Collier and Venables (2017); Bird et al. (2017); Glaeser and Xiong (2017), attribute urbanisation to mainly natural population increase, rural-urban migration, and spatial expansion of urban spaces. These factors have consequently let to the reclassification of urban boundaries as urban populations grow and cities expand outwards. The outward spatial expansion incorporates and makes use of formerly non-urban land (peri-urban in the context of this study) in order to accommodate the growing urban population through various urban developments (Kamete et al., 2001). This increases the size of the urban area whilst reducing the extent of the peri-urban areas and significantly reducing their populations.

According to Müller and Munroe (2014); Nuissl and Siedentop (2021), urbanisation is the major driving force behind urban LUC. Li et al. (2017) equally noted in their study of global land use and land cover change that most of the LUC taking place today are induced by rapid global urbanisation. Li and Siame (2020) equally found out that human interactions with the environment due to urbanisation are accelerating rapid urban LUC globally. Various scholars assert that urbanisation patterns and processes are heavily influencing contemporary urban LUC whose outcomes include mainly the spatial expansion of urban built-up areas (Arezki, Deininger, & Selod, 2015; Aziz et al., 2015; Mekara, 2020; Nuissl & Siedentop, 2021). Outcomes also include changes in urban form and spatial structure of urban areas around the globe (Akubia, 2019; Ramachandra et al., 2012; Seto & Reenberg, 2014). Li and Siame (2020) argue that it is the urban poor and vulnerable who experience the wrath of these changes due to their lack of monetary resources and inability to easily change and adapt to these changes.

Urbanisation processes indicate that in the not-so-distant future, nearly all vacant land will be urbanised. The land will further be occupied by both physical and spatial land use structures of varied rates and magnitude (Nuissl & Siedentop, 2021; Rockström et al., 2009; Ruddick et al., 2018). Various scholars in their respective studies have noted that the urbanisation process has brought about significant changes to urban land use on a global scale (Biłozor & Cieślak, 2021; Lambin et al., 2003; Scheuer, Haase, & Volk, 2016; Seto & Reenberg, 2014). The spatial extent and intensity of current urban LUC are simply unprecedented (Nuissl & Siedentop, 2021). The rate and pace of urban LUC, compliments of urbanisation, have increased their intensity not only globally but also at the regional and local levels (Biłozor & Cieślak, 2021).

Empirical evidence suggests that rapid population growth and urban extension are precipitating massive urban LUC worldwide, with far-reaching consequences on urban residents (Appiah, Asante, & Nketiah, 2019; Hampwaye et al., 2020; Simwanda, 2018). Though desirable and essential, LUC is causing various economic, social, cultural and, environmental issues such as

loss of land and livelihoods, perpetuating social inequalities within the same urban areas, environmental degradation, pollution and, undermining ecosystem services, which affect urban residents (Foley et al., 2005; Li & Siame, 2020; McMichael, 2000; Meyfroidt et al., 2013). Inevitably, urbanisation and urban LUC have had life-changing effects on urban residents and their livelihoods particularly, urban livelihoods, food production and security (Nuissl & Siedentop, 2021; Ranagalage et al., 2021; Wang, Wang, Zhang, Lu, & Ren, 2015; Zoomers et al., 2017).

There are significant changes to urban land use patterns on a global scale as the spatial extent and intensity of current urban LUC are simply unprecedented (Biłozor & Cieślak, 2021; Lambin et al., 2003; Scheuer et al., 2016; Seto & Reenberg, 2014). Urban LUC has now become a major global problem requiring urgent attention as the world's urban population keeps growing and cities continue urbanising rapidly (Biłozor & Cieślak, 2021; Seto & Reenberg, 2014). According to the United Nations (2019) projections, about 90% of this population increase is projected to take place in Africa and Asia. According to Nuissl and Siedentop (2021); Akubia (2019), rapid urban population growth and urbanisation are some of the driving forces behind the current urban LUC. The rate and scale of urban LUC poses a threat to the growing urban populations as agricultural land keeps diminishing thereby reducing the amounts and varieties of foods produced for urban residents (Hampwaye et al., 2020).

In their comparison of three metropolises in the USA and three urban agglomerations in China over 20 years, He, Zeng, Xie, Tan, and Wu (2019) are of the view that the coming of the urban area dubbed the city, coupled with rapid unprecedented urbanisation and industrialisation has greatly altered the urban spatial form and shaped it profoundly. He et al. (2019) have attributed the rapidly changing urban spatial form to various factors. These include socio-economic developments and physical factors that have affected transportation, the ecological environment and have ultimately left particularly, urban residents without adequate financial muscle, affected. The study, from the six urban agglomerations investigated, found out that they have all undergone massive expansion. China's unprecedented urbanisation has been shaping the global urbanisation of cities of the 21st century. Furthermore, the study noted that China's agglomerations occurred at a higher growth rate than the USA (He et al., 2019). While the USA emerged earlier and had the highest magnitude of urban sprawl, China is only emerging now and experiencing an unprecedented urbanisation process that is remarkably, expanding its urban spatial extent rapidly (Huang, Li, Bai, & Cui, 2012; Jingan, Jiupai, Chaofu, & Deti, 2005). This study and many others therefore provide us with a good trajectory for

understanding and comparisons of different urbanisation trajectories across the globe. The study equally serves as a valuable urban spatial planning reference especially for emerging urbanising countries or cities particularly those of the developing world (Kuddus et al., 2020; Li et al., 2017).

According to a study on urbanisation and LUC by Cahya et al. (2018), the widespread urbanisation of cities around the world is resulting in the spatial expansion of cities. Cahya et al. (2018) noted the dramatic increase in the urban population of Ciawi urban areas, Bogor Regency in Indonesia that sparked massive LUC from green peri-urban areas to built-up urban areas for a period spanning over 30 years. These developments were attributed to the fast urbanisation of the area that saw many poor urban residents internally displaced and further pushed into peri-urban areas.

Using spatial analysis methods, the study focused on the effects of urbanisation on LUC in peri-urban areas (Cahya et al., 2018). Spatial analysis methods are commendable as they are one of the ways through which future LUC models can be developed to help with land use change prediction. The study's key finding was that Indonesia, particularly the rapidly urbanising Ciawi, has recorded massive population growth. This has resulted in more and increased demand for land meant for built-up space and a reduction in farm and wetlands. Cahya et al. (2018) further noted the dramatic increase in the urban population of Indonesia that sparked massive LUC from green peri-urban areas to built-up urban areas for over 30 years attributed to fast population growth.

Biłozor and Cieślak (2021) on the other hand, assert that the urbanisation of cities' peripheral areas due to urban expansion and population increase has resulted in urban sprawl which is common to rapidly urbanising cities around the world. Regarded as a natural process, urban sprawl is necessitated by the chaotic and dynamic urbanisation of cities that results in socio-economic changes according to various scholars (Kaiser, Godschalk, & Chapin, 1995; Kamete et al., 2001; Mather et al., 1998). Urban sprawl is an indication of the mismatch between the size of an urban area and the geometric increase in its urban population (Biłozor & Cieślak, 2021). This denotes a situation where the size of the urban population and its growth is not proportional to the size of the urbanised area that hosts the population in question (Nuissl & Siedentop, 2021). Various scholars have also emphasised that there are many other significant contributing factors to urban LUC which include socio-economic, demographic, political and spatial factors (Aziz et al., 2015; Mangi, Yue, Kalwar, & Ali Lashari, 2020; Zhang, 2016).

Aziz et al. (2015); Nuissl and Siedentop (2021) in their separate studies have argued that urbanisation accounts for most of the urban LUC, mostly from non-urban to urban land driven by social preferences, economic growth pressures and demographic factors. In their study of urbanisation and its impacts on founded areas of big cities in Pakistan, Aziz et al. (2015) found out that urbanisation exerts extreme pressure on urban infrastructure and services provision. This has further made the livelihoods of urban residents miserable. As pointed out by Simwanda and Murayama (2018), urbanisation and the consequent changes in land use have to some extent, left the urban poor and vulnerable living in buildings and environments that would otherwise be unfit for human habitation. Aziz et al. (2015) further noted that the urban poor find themselves in such situations that threaten their lives and compromise the integrity and wellbeing of the environment due to lack of resources especially financial to choose and settle in areas that are safer for them.

While urbanisation involves the change of land use from non-urban to urban, a demand-driven process according to McDonagh (2007), other scholars have argued that urban LUC is more of a supply-driven process. Hersperger et al. (2020); Ulfarsson and Carruthers (2006) are of the view that urban LUC has largely been driven and facilitated by a host of policies at both the local and national levels. Their study argues that urban LUC arise from an interconnected web of factors that leave a trail of impacts on urban residents particularly, the urban poor and vulnerable who mostly lack the necessary resources needed to change and or adapt to these factors.

While all these driving factors of urbanisation and urban land use change are true and okay in their own right, there are some aspects of urbanisation and urban land use that have been ignored by some scholars. These include among others; people's freedom to live in a part of an urban area of one's choice, access to social and administrative amenities among others. According to Hersperger et al. (2020) urban land use and, one's subsequent choice of land use has to some extent been facilitated by land rights or tenure systems in place, which are important as they characterize the urban land use narrative. The point of emphasis is that urban processes such as large-scale investments have led to the proliferation of peri-urban areas and the displacement of the urban poor and vulnerable (Manda et al., 2019). Urban processes can somehow be considered as urban planning; implying that urban LUC has to a large extent been facilitated by the absence of adequate urban land use planning and policies (Mubanga, 2019).

Land policies are essential for any urban area's successful urbanisation and economic development. Undoubtedly, land policy would help to abate these city divisions and politics

that have plunged urban land use (Lupale & Hampwaye, 2019; Mandhu et al., 2019; Mekara, 2020). Venables (2018) argues that land use policy might also be able to alleviate the inherent weaknesses in marketability and security of urban land ownership for the urban poor and vulnerable groups. According to Glaeser and Xiong (2017), Chinese land policies have been a remarkable success story in the creation of reasonably productive, inclusive and, liveable cities. This has been the reality despite China's unprecedented rates of both population growth and urbanisation (Cain, 2017). Glaeser and Xiong (2017) further attribute this success to the Chinese mayors' control of urban land.

In a study of land administration practices for land policy implementation in the USA, Williamson (2001) notes that land use policies have been essential in the development of an all-inclusive United States. Williamson (2001) further argues that land use policies support environmental management and the sustainable consumption of our biggest resource – land. Land use policies also support economic development and social stability not just in the developed countries but also in the developing countries. Williamson (2001); Steel et al. (2019); Lubowski et al. (2008) postulate that, land as a resource is vital for the *very* existence [*emphasis supplied*] and sustenance of all forms of life. This is the sole reason humans need to better manage land even as the processes of human civilisation, urbanisation and urban development will continue for ages to come.

Park (2013) has also argued that growing urban populations, urban growth and urbanisation have continuously modified the functions of land at different scales across the world's urban centres. The study on spatiotemporal landscape pattern changes in response to future urbanisation in Maricopa County, Arizona, USA found out that different urban landscapes across the world experience land use change differently. According to Park (2013), certain land uses will be sensitive to future urbanisation prospects and processes. The findings of the study indicate the need for land use change planning that must look for alternative and optimal land use policy decisions among the various policy decisions that each urban centre is faced with (Park, 2013). Other scholars equally emphasise the need for having in place, contemporary land policies that are also functional and suited to the particular land use change needs of given areas and countries (Lombard & Rakodi, 2016; Mookherjee, 2006; Mujeyi, 2021; Müller & Munroe, 2014; Palmer et al., 2009).

Studying urbanisation and land abandonment in Switzerland, Price et al. (2015) concluded that there is need to identify key land use locations that occur across several scenarios where large-scale policy interventions must be made. Price et al. (2015) in their study findings argued that

unless large scale interventions are made and implemented policy wise, large portions of the land that makes up the Alphine valley bottoms, and the Swiss plateau would be lost to urbanisation thereby risking agriculture abandonment. According to Price et al. (2015), Switzerland is urbanizing at a rapid rate thereby taking up much of the land against other land uses particularly open land agriculture.

Gennaio, Hersperger, and Bürgi (2009) argue that although urban containment strategies (urban growth boundaries and greenbelts) have been successful in managing urban sprawl in Switzerland, building density increased in building boundaries due to urbanisation from 1970-2000. Müller, Steinmeier, and Küchler (2010); Gennaio et al. (2009) further insist on the need for political institutions to specify definite development goals that should be accompanied with clear land use policies both inside and outside building zones. Müller et al. (2010) pointed out that with its considerable ecological impact, urbanisation in Switzerland and the European Union has mostly taken place at the expense of agricultural land.

There cannot be an economic development narrative of any city or urban area devoid of urbanisation and changes in land use (Venables, 2018). Urban areas and cities provide opportunities that may not be provided by their rural counterparts. These opportunities initiate the demand for any urban area's most critical and scarce resource - land. Urbanisation inevitably comes with the demand for and changes in urban land use which necessitates a change in ownership. According to Collier and Venables (2017); Lubowski et al. (2008), the demand for land in cities and urban areas does not come from what the landowner does or does not do.

The fact that land is located in the city, generates the demand for urban land and consequently dictates the value of that land over time. This demand for land has presented urban areas with a demand and supply mismatch. In urban areas and cities, rent on land has a dual role. Firstly, in a perfectly functional and competitive market, rent on land *efficiently* [emphasis supplied] allocates land between competing users (Meyfroidt et al., 2013). The second role of rent on land is a financial payment where wealth is transferred from payer to payee (Collier & Venables, 2017).

This, unfortunately, is far from the reality of our times. In most of the developing countries especially, urban land ownership is politicised (Collier & Venables, 2017; Kombe, 2005; Mubanga, 2019). Empirical evidence suggests that powerful people such as the urban elite, senior civil servants who are politically connected, politicians and politically exposed persons,

the rich and powerful, own most of the urban land and control land politics of any given city (Collier & Venables, 2017; Kombe, 2005; Lubowski et al., 2008; Mubanga, 2019). These groups of people use their money, power and influence to obtain legal titles of urban land against the original owners who in most instances, are the urban poor and vulnerable (Kombe, 2005). Collier and Venables (2017) argue that it is the urban poor and vulnerable who lack access to legal land representation and redress.

The urban poor and vulnerable people have been marginalised by the affluent, rich and powerful based on their socio-economic status (Kombe, 2005; Mubanga, 2019). UN-Habitat (2016) argues that land power relations are producing urban areas and cities that are characterised by gated communities housing the affluent and, slum dwellers on the other hand. Urban areas have not fully integrated rural-urban migrants into urban systems that enable them to share equitably in the human, intellectual, political, social, cultural and economic assets of the city (Moretti, 2014; Venables, 2018). Instead, the current form of urbanisation and land power relations have produced divided cities characterised by exclusion, social injustices, multiple forms of inequality and deprivation based on socio-economic class hierarchies (UN-Habitat, 2020).

Land, as one of the three factors of production, remains an important and indispensable resource in any urbanisation efforts and urban economic development agenda. As such, land must be treated as an equal resource across the different socio-economic strata of society (Nuissl & Siedentop, 2021). Cobbinah, Asibey, and Gyedu-Pensang (2020) postulate that land is an irremissible and essential factor of production that is responsible for the creation of the wealth of nations. Scholars assert that land is estimated to account for half to three-quarters of the wealth of nations worldwide (Cobbinah et al., 2020; Mweemba & Monde, 2018; Nuissl & Siedentop, 2021).

Before the industrialisation and urbanisation era, rural-urban migrations and internal displacements were unheard of. Mweemba and Monde (2018) argue that there was enough land for everyone, everywhere and communities, be it rural or urban occupied land of their choice as there were no competing land uses. Swerts et al. (2018) argue that with the coming of industrialisation and urbanisation, rural areas have had to evolve from being rural and mainly agrarian to being urban with highly mechanised economic systems. Consequently, people have had to move from rural to urban areas while others have had to move within the urban areas due to various reasons such as changes in urban land use, urbanisation and land power relations in both urban and rural areas (Chitonge et al., 2017).

Rural-urban migration come with various challenges that overtime, contribute to shifts in urban landscapes (Bird et al., 2017; Tacoli et al., 2015). As noted by Kamete et al. (2001), rural-urban migration has been perceived as contributing to a host of socio-economic and environmental problems all over the world. These include overcrowding, loss of cultural identity, inadequate provision of requisite services such as health, education, adequate and decent housing, water and sanitation, communication and transport infrastructure, continued exposure to environmental hazards and disasters among others (Bird et al., 2017; Collier & Venables, 2017; Venables, 2018). As a result, urbanisation, rural-urban migration coupled with urban population growth and increase can overwhelm and seriously challenge any local and national government particularly those of the developing countries (Tacoli et al., 2015).

Despite being a first-world country, the USA has equally had its share of internal displacement thanks to urbanisation, industrialisation and the change in land use. Using the econometric model, Lubowski et al. (2008); Lubowski et al. (2003) revealed that land has over time changed use to mostly urban developments as most landowners relinquished their alternative land uses in preference for the net returns on their pieces of land. Landowners considered crop and farmlands to be of low quality during the 1982 – 1997 period when urban areas increased by 50 percent across the 48 states (Lubowski et al., 2008). Conclusively, urbanisation prompted the landowners to go for alternative uses of land in the place of traditional agricultural land compliments of urbanisation, population increase and the growth in the demand of requisite services, amenities and facilities (Heimlich & Anderson, 2001).

Whereas migration is a global phenomenon, rural-urban migration is more of a developing world phenomenon. In their study of Sukoharjo Regency in Indonesia, Yogi et al. (2022) highlighted their study area as being a migration destination whose result is in urban extension, expansion and urban sprawl. The observation was that Sukoharjo Regency was seen as a good place to migrate to for mostly graduate students and the youth in their pursuit for opportunities and a better life overall. For instance, in 2015, the city recorded a higher figure of migrants compared to the older ones that were already living there. Moretti (2014) argues that the provision of public goods and services to urban residents is increasingly becoming difficult in such arrangements. According to Izakovičová et al. (2017), rural-urban migration pauses as one of the serious challenges that urban areas are facing in trying to keep up with urbanisation and the associated urban land use change especially in developing countries.

In India, rural-urban migration accounts for 30% of the country's total urban population growth (Swerts et al., 2018). Inevitably, the industrial and commercial sectors development, coupled

with the increase in the urban population, will lead to spatial expansion and changes in urban land use. Economic considerations then become the basis for the conversion of agricultural land to urban land use that is premised on industrialisation, urbanisation and economic growth (Shouying, 2018). Land is converted and its use changed as that is considered as being more profitable socially and economically (Lubowski et al., 2008; Yogi et al., 2022). The prevailing socio-economic conditions during urbanisation become one of the major factors affecting the conversion of land from mainly agricultural to urban expansion and industrial use. This was evidenced in China's Shanghai area during the 1990-2010 period (Shi, Jiang, & Yao, 2018).

In the developed countries of the world, the prevailing narrative of urbanisation is mainly that of urban population growth, the development of skyscrapers, high rise buildings, provision of high and medium density housing, transportation and communication infrastructure, industrial facilities developments – economic development in short (Biłozor & Cieślak, 2021; Nuissl & Siedentop, 2021; Xie et al., 2007). However, urbanisation and urban land use are much more than what has been documented as constituting urbanisation and urban LUC. Urbanisation encompasses a complex web of interrelated processes that span from and beyond governments' urban planning, urban sprawl, rural-urban migration and internal displacement, expansion of urban area space to people's individual choices and decisions that have a collective effect on urban land use and the urbanisation agenda (Nuissl & Siedentop, 2021).

Urban LUC resulting from urbanisation and industrialisation has now become a major global problem requiring urgent attention since the world's urban population will continue growing and cities will continue urbanising rapidly into the unforeseeable future (Biłozor & Cieślak, 2021; Seto & Reenberg, 2014). Many scholars have focused their attention on the changing use of land alongside the urbanisation and industrialisation agendas, examining how land use has shifted over the years. However, few, if any scholars, have focused their attention on urbanisation, urban LUC, and their impacts on urban residents in a single study or series of studies. Empirical evidence suggests that urbanisation and, urban LUC have been taking place and have, for a long time now, been a focus of scholarly attention world over (Nuissl & Siedentop, 2021) but less attention has been paid to the plight of the poor and vulnerable urban residents too.

2.6 Urbanisation and Land Use Change: A Sub – Saharan African Context.

In Africa's urban areas, there is a high demand for land, high cost of land, and a scramble for land that is common to all dynamic cities in both developing and developed countries of the world (Mweemba & Monde, 2018; Van Leeuwen et al., 2018). The 'scramble' for urban land in SSA has been attributed to rapid urbanisation, fast growing urban population, rural-urban migration, external migrations, influx of people from other SSA countries into the major towns and urban centres, urban expansion and mostly, unmanaged, or poorly managed urban land (Chitonge & Mfune, 2015). Put together, these factors have resulted in the existence of an urbanisation and urban land use change problem that various scholars and scholarly fields are grappling with (Godfrey & Julien, 2005; Kuddus et al., 2020; Lambin & Meyfroidt, 2011).

As urbanisation of cities across the SSA region continues increasing exponentially, urban land use on the other hand has equally continued to change urban landscapes remarkably (Akubia, 2019). The current patterns and trends of urban land use in SSA have continued to exhibit themselves distinctly from those of the past notably, the magnitude, rate, and geographic locations of urban LUC. Appiah et al. (2019) observed that in SSA and other developing countries, the general trend of urbanisation and land use tends to move outwards from the CBD towards the peripheral areas, thereby reducing urban agricultural land. Various scholars have pointed out that the spatial expansion of urban areas across the region has over time, greatly reduced the size and extent of land meant for agriculture in both rural and urban areas but more so in urban areas (Hampwaye et al., 2020; Holden & Otsuka, 2014; Olorunfemi et al., 2022; Simatele et al., 2012). The threat to urban food security particularly, cannot be overemphasised. If this trend continues, Africa risks not achieving the SDGs especially SDG number 2 which talks about zero hunger and also, Agenda 2063, a blueprint for peace and prosperity for all people across the world and, the wellbeing of the planet too (UN-Habitat, 2020).

In their study of land tenure reforms, land markets, population growth and land use intensification in Africa, Holden and Otsuka (2014), attribute the growing shortage of agricultural land in densely populated rural areas of Malawi, Kenya, and Uganda to rapid urban population growth, urban LU intensification, weak land tenure rights plus management systems. The study noted that there was land abundance in SSA countries resulting in an influx of international investors and local elites especially in urban areas (Holden & Otsuka, 2014). Li and Siame (2020) equally argued that the existence of peri-urban land in Zambia for instance, has attracted international investors such as South African conglomerates, Chinese and other Asian/Indian investors into SSA countries like Zambia.

The impact of urban LUC on urban agriculture cannot go unnoticed as the quantity and variety of agricultural land have been diminishing in most urban areas (Wu, Zhang, & Shen, 2011). Gitau (2018), Alemayehu (2016), Ogechi (2014) argue that the amount of Kenya's urban agricultural land and food production has significantly reduced due to urban expansion and the demand for built-up land. Alemayehu (2016) points us to a decline in thickets, scrubland, coastal vegetation, mangroves and bushlands and a notable emergence of town and barren land, indicating land use type change. This has inevitably and undeniably affected urban residents' food production and availability as formerly agricultural land has been converted to various urban uses that do not include agricultural land use.

Appiah et al. (2019) are in agreement with this assertion as they point out that urban expansion and the growing urban population have had an impact on the amount of food produced for urban populations in Ghana. Sumari, Cobbinah, Ujoh, and Xu (2020) argue that Tanzania's urbanisation and urban population rates are faster than the cities' ability to produce food and maintain environmental sustainability. Geyer Jr, Geyer, du Plessis, and Van Eeden (2012) equally point out that the development of South Africa's largest cities due to urban expansion has significantly reduced urban agricultural land in preference for settlements, commercial and industrial land use. Hampwaye et al. (2020), assert that Lusaka has been losing formerly agricultural land to various urban land uses such as built-up urban areas that have made the city a concrete jungle.

As the urban age is being realized and as more and more people are moving and settling in urban areas, more land is being cleared and converted into land for settlements and urban development purposes (Van Leeuwen et al., 2018). Most of this land has formerly been agricultural land used to realise the food needs of the masses. According to Nuissl and Siedentop (2021); Siciliano (2012); Akubia (2019), urban processes and urbanisation are some of the driving forces behind the current urban land cover and LUC. Tacoli et al. (2015), Collier and Venables (2017) on the other hand argue that rural-urban migration contributes significantly to the increase in the urban population and the growth in their numbers. For most of Asia and Africa for instance, rural-urban migration has accounted for most of its urban population and internal displacements (Izakovičová et al., 2017; Venables, 2018).

Tacoli et al. (2015) argue that Africa and Asia have the highest rates of urbanisation, urban population growth and the highest rate of net rural-urban migration. Of the two regions, Africa, SSA in particular has the highest overall population growth. Studies conducted indicate that there are serious challenges resulting from growing urban populations at both regional and

local levels (Kombe, 2005; Masumbu, 2018; Tacoli et al., 2015). As administrative centres offering better employment opportunities, facilities, and job creation in their various labour-intensive manufacturing firms and industries, urban areas and cities have further been riddled with internal displacements (Collier & Venables, 2017). Sub-Saharan African countries have been characterised by squatter or informal settlements that lack proper buildings and are not serviced with the basic social amenities as they are not planned and are quite far away from the central business district (Chigudu & Chavunduka, 2021; Chileshe, 2018; Chiwele et al., 2022; Venables, 2018).

Kombe (2005) in his study of land use dynamics and implications on urban growth in Dar es Salaam, Tanzania argues that the urban poor are forced by socio-economic circumstances to settle in areas that are hazard-prone and considered unfit for human habitation for their own survival due to internal displacements. This has exposed the urban poor and vulnerable people to various socio-economic, environmental and health hazards. When this happens, the result is the formation of slums and overcrowding in peri-urban areas which hinder the ability of governments to provide necessary projects that are aimed at regulating and improving these areas (Bird et al., 2017; Moretti, 2014). According to UN-Habitat (2016), 57% of Sub-Saharan Africa's urban dwellers live in slums. Nairobi, Lusaka, Johannesburg and, Kampala are some of the renowned cities with slums and huge slum populations as revealed by Bird et al. (2017) in their study of Nairobi's slums and their slum dwellers. Slums further cause other problems such as corruption, poor urban population health, welfare outcomes and, poor or zero provision and access to requisite services and basic social amenities (Simwanda & Murayama, 2018).

According to Masumbu (2018), in large cities of the developing countries Zambia inclusive, over 70 % of the urban population live in peri-urban areas and informal settlements. These areas, just like slums, are characterised by inadequate access to basic essential services and amenities. Aguda et al. (2013); (Aladekoyi, Oyinloye, & Olanibi, 2016) reiterate this by elaborating Nigeria's urbanisation and rural urban migration problems as including poor urban land management, overcrowding, various crimes such as armed robbery and theft, unemployment, poor environmental or ecological well-being, water and sanitation, urban poverty, inadequate housing, regional imbalances in living standards among others.

In Ghana Cobbinah et al. (2020) equally noted that urbanisation, rural-urban migration and urban population growth are compounding urban poverty and advancing the vulnerability of the urban poor and vulnerable communities. These challenges further lead to the urban poor people's loss of land to the affluent and elites who mostly grab the land and change use to

various urban economic developments. Kombe (2005) further argues that in Tanzania, the urban poor and vulnerable are forced into inhabitable areas that are not serviced and lack public amenities mainly by their prevailing socio-economic circumstances.

Steel, van Noorloos, and Klaufus (2017); Van Leeuwen et al. (2018) note that much of the SSA region still grapples with issues of adequate and functional land management mechanisms. Sub-Saharan Africa has been struggling with land power relations or land politics that have been attributed to rapid urbanisation, fast growing urban population, urban expansion and mostly, unmanaged, or poorly managed urban land. Poor land management in Sub-Saharan African countries has consequently led to socio-economic discrepancies between urban elites and foreign investors (Steel et al., 2019) who can easily afford to acquire land and change use and those who can't, the basis of various urban inequalities and injustices (Steel et al., 2017).

According to Watson (2004); Collier and Venables (2017), we now have in place an urban system and structure that is unequitable. A system that is increasingly excluding the urban poor and vulnerable socially and spatially from the opportunities that come with urbanisation and industrialisation coupled with LUC. Kombe (2005) is of the view that the urban poor and vulnerable people in SSA are mostly excluded from the city as they are unable to purchase formal plots whose localities cannot support their livelihoods or other survival skills such as carpentry. While most of the urban poor come to urban areas to seek better livelihood options, they are greeted with this grim reality of the modern urban form that offers them nothing much but helplessness (Collier & Venables, 2017). Developing countries cities in the SSA region now present us with grim reality of urbanisation and urban LUC; the rich and powerful, politicians and the affluent versus the urban poor and vulnerable who are unable to afford the most basic legal piece of land.

Where the urban poor and vulnerable groups can afford legal representation, Collier and Venables (2017), citing Ghana – a country with supposedly the best governance in Africa, further argues that court decisions are not independent but open to bribery. For instance, a sting operation in Ghana generated video evidence of 27 judges taking bribes (Collier & Venables, 2017, p. 10). These arrangements have provided the much-desired opportunities for the rich, affluent and politicians to use their powers and money to claim rights to land titles using the courts of law. In Kenya, Bird et al. (2017) equally point out that the title for most of the urban Kibera slum land in Nairobi is held by senior civil servants, politicians and army officers making the slam dwellers long term squatters. Southall (2005) through a government inquiry

cited the Kenyan elite as being guilty of fraudulent and corrupt activities, land grabbing and outright plunder.

Corruption and bribery in land and permit allocation are rife in SSA countries just like the inefficient allocation of land (Kombe, 2005; Mubanga, 2019). Various reasons accounting for this have been cited such as lack of clarity over ownership and insecurity of land tenure, use rights and weak land management policy implementation and monitoring (Collier & Venables, 2017). In most Sub-Saharan countries cities, land in peri-urban areas has become a valuable asset that is sought after by the rich and powerful mainly for their ownership and urban development (Collier & Venables, 2017; Kombe, 2005). Li and Siame (2020) affirm this fact as they noted that in Zambia, most peri-urban areas are being bought by affluent people as they can afford the pieces of land as evidenced by the increasing gentrification in most urban areas such as Lusaka, Livingstone, Kitwe and, Ndola.

Corruption and related activities disadvantage the masses especially the urban poor in the SSA region (Kombe, 2005). Corruption renders the urban poor people vulnerable and results in their further overcrowding in the already overcrowded and unsanitary informal settlements and has further pushed the urban poor into the city fringes in a quest for survival (Kombe, 2005; Li & Siame, 2020; Simwanda & Murayama, 2018). More often than not, informal settlement dwellers have been pushed into slums and areas that are inhabitable, something that pauses environmental hazards and a threat to their very livelihoods (Simwanda & Murayama, 2018).

In most Sub-Saharan African countries cities, the powerful and affluent target peri-urban areas for land purchases and change in land use as can be evidenced from Kombe (2005) and Mubanga (2019). According to Kombe (2005), poor landowners in Dar-es-lam have been selling their land to the affluent and foreign nationals to earn a living and survive in the city literally. Land in the peri-urban areas has increasingly been bought by the relatively well-to-do land seekers (Kombe, 2005, p. 7).

The major reasons for this trend are that land in peri-urban areas of the SSA developing countries is readily available, relatively cheap and affordable. Further, it is easy to put up economic development infrastructure and projects as such land has no developmental restrictions once it is bought and acquired (Kombe, 2005). Land is being sold by the poor urban landowners in a bid to meet their socio-economic needs (Li & Siame, 2020). The UN-Habitat (2016) reported similar observations in other urban areas or cities within the region such as Kampala in Uganda and Nairobi in Kenya.

For most of Sub-Saharan Africa, most of the land is customary or traditionally held. This means that it is owned, managed and governed by the traditional authorities, that is, families, clan heads and, or traditional authorities (Chitonge et al., 2017; Munshifwa, 2018). Scholars (e.g.,Cobbinah et al., 2020; Hampwaye et al., 2020; Moretti, 2014; Onyebueke et al., 2020; Simwanda & Murayama, 2018) have attributed the unregulated, fast-paced urban land market in African urban areas to the unclear distinction between land administration and ownership plus the lack of security of tenure. This undoubtedly, has led to the land power relations that have birthed the urban land divide between the rich and powerful on one hand and the urban poor and vulnerable on the other hand (Mubanga, 2019). This has raised concerns and sparked scholarly debates across the continent and beyond.

Home (2021) and Rutherford (2017) argue that countries in Sub-Saharan Africa are still grappling with poor urban land management due to the colonial governments' land governance structures that were carried forward past independence. Steel et al. (2019); Van Leeuwen et al. (2018) for instance, attribute Sudan's poor land management mainly to urbanisation, urban population growth and, the competing and overlapping management of land between the state and federal governments. Steel et al. (2019), further argue that Sudan lacks a unified urban land policy and proper coordination between responsible institutions and governments to determine urban LUC and, provision of social services/amenities in the rapidly urbanising African country.

Allsobrook (2019) draws attention to South Africa and argues that the slow land reform since the end of the apartheid era, characterised by weak social land tenure security rights, have perpetuated land use inequalities, poverty, and unemployment, and has left many black citizens feeling dejected. Over a decade-plus since independence, Tsheola and Makhudu (2019) also argue that South Africa still faces poor land management where urban land use change and deprivation are the primary cause of poverty (Mamabolo & Tsheola, 2017). Despite land management contributing to the urban agenda in South Africa and other SSA countries, urban LUC remains a huge challenge for most black citizens that needs urgent attention (Lombard & Rakodi, 2016; Rutherford, 2017).

More than four decades after gaining independence from the colonial masters, Zimbabwe still grapples with problems of urban LUC and management and, unending land conflicts mostly between indigenous people and the white settlers/elites (Hansungule, 2000; Mudimu et al., 2020). This has left the majority, especially the urban marginalised groups, poorer and vulnerable as most of the land is still owned by white farmers and elites, despite the 1992 land

reforms (Hansungule, 2000; Moyo, 1994), the early 2000s Fast Track Land Reforms (Muchadenyika, 2015; Mudimu et al., 2020; Mujeyi, 2021) and the new 2013 constitution adoption (Bhatasara, 2020).

It is worth noting that rapid urban population growth and urban sprawl have equally played a significant role in urban LUC as land has mostly had to be converted from other uses to mostly settlements and urban space (Chigudu & Chavunduka, 2021; Chungu & Dittgen, 2021; Simwanda et al., 2020). At the core of this study is the understanding that urbanisation and urban LUC cannot be considered in isolation as the two are inextricably intertwined regardless of the lens through which they are viewed. There must be coherence between urbanisation, the competing and changing urban land uses, land management, policies and, the implications on urban residents (Jehling & Thomas, 2016).

2.7 Urbanisation and Land Use Change: The Zambian Context.

In Zambia, just like in other developing economies, there are various urbanisation activities and changes in land use that have been and are still taking place. There are equally important urbanisation processes and aspects that influence urban LUC such as the distinct urban lifestyles and, the influx of foreign capital investment (e.g., the Chinese, Indian and South African investors, multinational corporations) that demand and call for more urban land (Xie et al., 2007: Li and Siame, 2020). It is the interaction of all these factors, that significantly influence land rent and value to attract the conversion of agricultural and green spaces to urban economic and industrial land use (Lubowski et al., 2008).

In a bid to fulfil urbanisation processes, more agricultural and or green land is cleared to pave way for the expanding urban and built-up areas (Li & Siame, 2020; Xie et al., 2007). Urban expansion and the subsequent reduction of agricultural land pose a food security threat. This is attributed to the fact that urban areas are rapidly running out of agricultural land thereby threatening the diversity of urban food choices and availability (Abrahams, 2010; Hampwaye et al., 2020).

Lusaka, just like other growing cities across the globe, has been experiencing massive LUC and a growing urban population (Simwanda & Murayama, 2018). According to Manda et al. (2019), urban population growth and urban expansion have led to shifts in land use patterns and internal displacements with massive, large-scale land acquisition mostly for commercial use. The shifts in urban land use have been attributed to several factors such as the top-down land management system, competing land authorities, institutions and agendas, lack of well-

defined property rights, corruption, lack of secure land tenure and, political interference among others (Li & Siame, 2020; Manda et al., 2019; Mubanga, 2019; Simwanda & Murayama, 2018). Nolte (2014) and Chitonge (2016) have equally noted that formal structures and rules in the acquisition of land in Zambia (compliments of the 1995 Land Act), particularly in urban areas, have left local and indigenous peoples destitute.

Urbanisation, population growth and economic activities have significantly influenced urban land value to attract the conversion of agricultural land to urban expansion and economic activities (Mubanga, 2019). Chitonge and Mfune (2015); Hampwaye et al. (2020); Mubanga (2019) attribute the reduction in urban agricultural land to the land policy and administration gaps created by planning authorities where the planning and zoning are not properly done. Hampwaye et al. (2020); Li and Siame (2020) have attributed these shifts to urbanisation and the consequent results such as the influx of foreign nationals and economic development of the urban areas. As a result of a combination of these and many other factors, urban agriculture has been relegated to peri-urban areas that were ideally traditional pieces of land (Chitonge et al., 2017; Gitau, 2018). It is worth noting that urban agriculture has always been a large part of Lusaka urban area and successive farmers have always practised agriculture (subsistence and commercial) for a number of decades now (Hampwaye et al., 2020; Simatele et al., 2012).

According to Hampwaye et al. (2020), one key characteristic of Lusaka urban area LUC has been urban agriculture whose narrative is rapidly changing due to the diminishing agricultural land. More agricultural and green land is cleared to pave way for the expanding urban areas and their growing populations (Li & Siame, 2020; Xie et al., 2007). As noted by Simatele et al. (2012), urban agriculture has unfortunately, not been embraced in urban development planning or land policy. This is a ticking time bomb that will soon materialise into an urban food security problem in Zambia.

Urban areas are rapidly running out of agricultural land while the urban population with its diverse food needs is increasing at a rather rapid rate compared to the rate of urban food production. This may not seem like a pressing problem right now. However, it will soon materialise into an urban food security problem as urban areas are rapidly running out of agricultural land while alternative urban agriculture systems have not been put into place (Abrahams, 2010; Hampwaye et al., 2020). The urban population has diverse food needs that must be met but without adequate agricultural land, this will be far-fetched.

Zambia's urbanisation resulting from all these developments, presents a grim reality of urbanisation and urban LUC. According to Li and Siame (2020), Chungu and Dittgen (2021), Lusaka urban presents a scenario where we have the rich and powerful, politicians, the affluent and foreign nationals versus the urban poor and vulnerable who are unable to afford land in the urban areas. For those who owned land in the peri-urban areas, many of them have either been bought off or have themselves sold off their pieces of land to the developers who are mostly of foreign origin or the affluent (Li & Siame, 2020). In Lusaka city, land in peri-urban areas has become a piece of hot cake as the people with the means are busy buying the urban poor off their land all in the name of urbanisation and urban developments as provided for in the city's Integrated Development Plan for the greater Lusaka (Chiwele et al., 2022; Chungu & Dittgen, 2021; Li & Siame, 2020; Mubanga, 2019).

Kombe (2005) argues that the urban poor and vulnerable people have been marginalised by the affluent, rich and, powerful based on their socio-economic status. Lusaka urban, just like other urbanising cities of the third world countries has produced urbanising urban areas and cities characterised by social inequalities. In particular, these are urban areas where you have the affluent of the city living in low-density areas and gated communities and the urban poor who are slum dwellers (Chungu & Dittgen, 2021). Venables (2018) further argues that urban areas have to a large extent failed to integrate the urban poor into their urban systems that allow every urbanite to equitably share in the city's social, cultural, intellectual and economic assets. As noted by Mubanga (2019), the current urbanisation of Lusaka coupled with the city's land power relations city has produced a divided city characterised by inequality in its multiple forms. Lusaka is now made up of different social economic classes and the exclusion of the urban poor and vulnerable.

According to Mubanga (2019); Chigudu and Chavunduka (2021) various shifts in land use have been recorded where land in the peri-urban areas is increasingly exchanging hands between the politicians, the affluent, foreigners and the urban poor due to the rapid urbanisation of Lusaka. Li and Siame (2020) further noted that the Chinese and other multi-nationals with the help of local politicians are buying land in peri-urban areas for developmental purposes. The urban poor and vulnerable are busy selling off their pieces of land as acts of vulnerability and survival. Their decisions to auction their pieces of land to the highest bidder stems from their poor, low educational backgrounds and levels that leave them unintegrated in the skilled but strained urban job market (Bird et al., 2017).

The lack of integration of the urban poor into the urban skilled and trained job market leaves the urban poor and vulnerable groups with no option but to take up odd and unskilled jobs. Simwanda et al. (2020) argue that these wages are unable to meet their daily needs and livelihoods needs hence the decision to sell off their land to the highest bidder. Besides this, traditional and customary land that is held away from peri-urban areas but on the urban fringes is now increasingly becoming a target area for urban acquisition of land for developmental purposes (Chitonge et al., 2017). Lusaka city serves as a good example in this regard where, land in the city is very expensive, scarce and mostly unaffordable. Land buyers have now resorted to peri-urban areas and areas surrounding the city such as Chilanga, Ten Miles, Chongwe and, Lusaka West for instance (Chitonge & Mfune, 2015; Chitonge et al., 2017).

Zambia, just like other SSA countries is still struggling with the proper implementation and monitoring of its national land policies and consequently, land governance. Munshifwa (2018) focused on examining the inertia, confusion and corruption characterising the customary land sector since time immemorial, echoing the urgent need for effective land governance in Zambia. Munshifwa (2018) further argued in his study that the urgent need for land governance stems from the escalating demand for land by politicians, local bureaucrats, the elites and high-net worth individuals, multinational corporations and foreign nationals. The study's policy review of customary land governance from the 1920s up to 2017 revealed a change in the labelling of land. Unfortunately, this was done without serious attempts made to resolve the day-to-day land governance challenges hence Munshifwa (2018)'s call for urgent and effective land policy in the face of urbanisation and all the contenders to land use change. Suffice to mention, at the time of this study, Zambia had gotten its first ever land policy 50+ years after gaining its political independence.

In line with Munshifwa (2018) study findings, Nolte (2014) argued that Zambia's land governance system did to a large extent determine foreign investors' large scale land acquisitions. As noted by Manda et al. (2019), Zambia has been experiencing large-scale land acquisitions by mostly foreign investors due to activities related to the urbanisation of its urban centres. Nolte (2014) equally noted that the enforcement of formal rules regarding land use change was weak. The study further argued that land acquisition for urbanisation and economic development purposes in Zambia depended on how the actors played by the rules of the game as well as the power balance between and amongst the actors themselves. As postulated by Mushinge and Mwango (2017); Mweemba and Monde (2018), land in Zambia, and elsewhere

for that matter, is very important for social and economic developments as livelihoods depend on land both directly and indirectly.

Mushinge and Mwango (2017)'s study found out that Zambia's legal framework, land governance framework, lack of land policy (up until the year 2021) and the state of land governance was dysfunctional as of the year 2017. In their study of the assessment of land governance in preventing state land conflicts in Zambia with a particular focus on Lusaka, Mushinge and Mwango (2017) emphasised the need for effective land governance mechanisms that protected all the urbanites and their livelihoods. Since urbanisation and urban population growth will continue into the foreseeable future, the need to reduce land use change related conflicts is urgent as most urban poor people for instance, depend on land for their very survival and livelihoods (Mubanga, 2019).

Li and Siame (2020) echo the above sentiments as they assert that more often than not, the urban poor and vulnerable have been pushed out of the city. This has not been done out of their own volition but due to economic and social factors necessitated by the lack of a clearly defined land policy. Even with the current land policy, lacunas have been observed already as the policy does not entirely protect the urban poor and vulnerable people from internal displacements for instance. Mandhu et al. (2019) further argue that Zambia still faces a huge challenge of effective land governance that exposes the urban poor people and further leaves them vulnerable in the face of urban spatial expansion, urbanisation, gentrification, urban developments and, the rapidly growing urban population especially in Lusaka urban.

2.7.1 Land Power Relations and the Political Economy of Land in Zambia.

The political economy of land refers to the power relations concerned with land use change. "It has everything to do with the power structure of society that is reflected in the rules and regulations guiding land use and administration" (UN-Habitat, 2010, p. 26). Fundamentally, land use change governance or management is about power and political economy (Palmer et al., 2009). It can be understood as "the process by which decisions are made regarding the access to and use of land, how those decisions are implemented, and the way that conflicting interests in land are reconciled" (Kironde, 2009). It encompasses statutory, customary, and religious institutions, state structures such as land agencies, courts and ministries responsible for land, and non-statutory actors such as traditional bodies and informal agents. It also covers both the legal and policy land framework, conventional and informal practices that enjoy social legitimacy (Palmer et al., 2009).

The political economy of land use change reflects power relations, power dynamics and, how wealth distribution varies between different social groups, actors, and sectors of society (Mubanga, 2019). It is the power dynamics that exist between the politically exposed or connected, the elites, affluent and the vulnerable groups in society. These power relations ultimately guide land administration systems that determine how good or bad urban LUC is governed or managed (Kironde, 2009; Kombe, 2005; Lubowski et al., 2008). From a global perspective, land administration systems act within adopted land policies that define the legal regulatory pattern for dealing with land issues, which in turn imposes mandates and responsibilities on the various countries, agencies and, organisations involved (Mubanga, 2019, p. 8).

Land use change administration and management is critical as it is the platform for the achievement of many developmental and urbanisation activities and outcomes. It also helps with the implementation of effective and efficient land administration and management systems (Mubanga, 2019; Southall, 2005). Unfortunately, land governance has been abused in many liberalized economies Zambia inclusive (Kombe, 2005; Mubanga, 2019). It has become the means through which political and economic power plus privilege are accumulated and dispensed at the expense of poor and vulnerable urban residents (Collier & Venables, 2017; Southall, 2005). This has resulted in corruption, nepotism and, patronage in LUC, a clear picture of the power–land relations obtaining in urban areas (Glaeser & Xiong, 2017; Mubanga, 2019).

Mubanga (2019); Mujeyi (2021); Lupale and Hampwaye (2019) are of the view that good land policies are the cornerstone of good land administration, management and change use. Shouying (2018) on the other hand, argues that urbanisation, the advent of market mechanisms and, the conversion of formerly crop and agricultural land have made it necessary for land to be considered as a policy tool to be used in promoting any country's economic development. According to Yogi et al. (2022), change of land use from agricultural to urban land use is an economic consideration premised on the belief that urban land use i.e., economic development purposes and activities are more profitable than the use of urban land for agricultural purposes

From the colonial times, Zambia has been using draft land policies as the basis of land governance with the latest effective draft land policy being that of 2017. Zambia only finalised its first national land policy and it was released in 2021. Good land governance has been recognized not only by good governance scholars but by international organisations such as the World Bank as an inevitable and significant factor for improving urban land use and tenure

security especially in developing countries (Mulolwa, 2016; World Bank, 2007). Good land management is equally a prerequisite to economic development especially in developing countries that are still not very advanced technologically.

According to the GRZ (2021), Zambia's urban areas have been faced with an increasing demand for land, more so, urban serviced land. Reasons cited for this surge in the demand for land include rural-urban migration, economic development activities, and urban population growth (Hampwaye et al., 2020; Mubanga, 2019). Various challenges have sprung up which include land power relations, environmental degradation and depletion of the natural resource base and land disputes. These challenges have further compounded the allocation of land in urban areas, ownership of land and security of tenure (Collier & Venables, 2017; GRZ, 2021; Masumbu, 2018).

The existing land legal framework aimed at facilitating secure land rights and tenure has been weak and inadequate (GRZ, 2021). This has aggravated the existing and emerging land power relations that have left the city divided into two; the rich and powerful who own most of the urban land and the poor and vulnerable who are struggling to survive in the city (Collier & Venables, 2017; Venables, 2018). It is worth mentioning that this arrangement favours the rich and powerful together with foreigners and not the urban poor and vulnerable groups. Urban land tenure security especially for vulnerable urban residents (for those who possess the means and financial abilities) is important in poverty eradication as it encourages sustainable long-term investments. These result in the improvement of urban residents' livelihoods and the achievement of economic development, urbanisation and the SDGs. This is especially true with regards to SDG number 11 whose major or core concern is sustainable cities by the year 2030.

Urban land use change is a power issue. Weak land use management (policies) disadvantages the country's poor and marginalized as land will be owned mostly by the city's elites and foreigners (Palmer et al., 2009). Good land management is imperative for achieving sustainable socio-economic development and urban food security (Lupale & Hampwaye, 2019; Mubanga, 2019; Shouying, 2018; Yogi et al., 2022). Empirical evidence suggests an undeniable relationship between urbanisation, urban population growth, urban LUC and the urban political economy of land (Chitonge & Mfune, 2015; Collier & Venables, 2017; Gitau, 2018; Hampwaye et al., 2020; Kombe, 2005). Missing from the literature, however, is the logical connection between urban LUC, the politics surrounding urban LUC, urbanisation and, their untold implications on urban residents in the context of Lusaka's rapid urbanisation and urban LUC. Consequently, the extent to which urban LUC, urbanisation and urban land management

interact and yield various spatial forms across the Lusaka urban political and geographical landscapes remain poorly understood.

There is little if any, empirical evidence that tells us how the urban poor and vulnerable maintain their rights to the city amidst the economic development taking place in Lusaka hence the context of this study. This study further argues that the urbanisation processes and urban LUC taking place in Lusaka are theoretically misinformed as no single theory that adequately explains what is obtaining on the ground exists. The next sections will discuss the background of land tenure and the evolution of the national land policy in Zambia.

2.7.2 Land Tenure Trends in Zambia

Land tenure is defined as "the terms and conditions on which land is held, used and transacted" (Adams, Sibanda, & Turner, 1999, p. 2). Just like most African countries, Zambia has a dual land tenure system dating back to the colonial era where land for the colonial masters was separated from the minority land for the natives (Munshifwa, 2018; Mushinge et al., 2018; Spichinger & Kabala, 2014). Prior to the colonisation era, all land was held entirely by traditional authorities who were administratively responsible for all the land in their respective areas (Munshifwa, 2018; Ndulo, 1977). This was the norm until 1928 when the Northern Rhodesia Order in Council was formally established (Munshifwa, 2018). According to Spichinger and Kabala (2014), this was considered as the first major action on land in Zambia.

The 1928 Northern Rhodesia Order in Council formally established the two land tenure systems in Zambia. These were crown land areas that were meant for the white settlers only and, reserve lands designated for African natives' occupation. The two land tenure systems were established under the English land law and customary land tenure respectively (Ndulo, 1977; Roth, Khan, & Zulu, 1995). The subsequent 1947 Order in Council further established trust lands as an extension of the 1928 reserve lands (Munshifwa, 2018; Mushinge et al., 2018; Roth et al., 1995). Munshifwa (2018) postulates that freehold tenure characterised the allocation of land on crown land while the reserves were characterised by undefined terms. According to the Colonial Office (1923), there were one million natives and 3,600 whites approximately. One can already see the inequality that characterised land distribution as far back as the 1920s. In a functional land administration system, this should not have been the case.

In 1964 when Zambia became independent, the State Land and Reserve Orders Act was passed to replace crown with state land and, from the British colonial government to the newly independent Zambian government (Munshifwa, 2018, p. 3). The 1975 Land Conversions Act

saw all the land in the country being vested in the president with the conversion of all existing freeholds to 100 years statutory leases (Munshifwa, 2018, p. 4). Land was subsequently declared valueless where all vacant land then was not saleable, and all subsequent leasehold interests were allocated a 99-year lease (GRZ, 1975; Mushinge et al., 2018; Spichinger & Kabala, 2014).

According to Roth (1995), land governance problems on reserves and trust lands characterised the land sector. This led to the 1985 Administrative Circular whose idea was to set up the procedures in customary land allocations (Spichinger & Kabala, 2014). To further protect villagers and their rights to land, the 1987 Ministerial Statement on Land Alienation in Reserves and Trust Lands was issued (Mushinge et al., 2018). Despite all the measures that were put in place to protect land, there weren't many tangible changes on the ground as the status quo remained about the same (Munshifwa, 2018).

In 1993, according to Roth (1995) and Roth et al. (1995), a National Conference on Land Policy and Legal Reforms (held at the Mulungushi International Conference Centre), made proposals to the state. These included the reclassification of land as customary (varied duration according to intended use) and state land (with a 99-year leasehold). It was this same conference that proposed the formal recognition of the role played by chiefs in customary land management and governance alongside government's efforts to enable them to perform their roles better (Munshifwa, 2018). The 1995 Land Act was further enacted to highlight the roles of both the state and the traditional authorities as well as the form of customary land reforms.

After the emancipation from Britain and the subsequent independence in 1964, Zambia adopted a socialist ideology under the then United Nation Independence Party (UNIP) (Roth et al., 1995; Roth & Smith, 1995). This was further cemented in 1972 when Zambia became a one-party state (Roth et al., 1995; Spichinger & Kabala, 2014). In 1991, the country reverted to a multi–party democracy under new leadership (the Movement for Multi-party Democracy - MMD). The MMD's mantle was privatization and market liberalisation which supported a free land market economy. This saw the emergence of the sale of land, something that is currently rampant and somewhat not properly managed. Consequently, the 1995 Land Act was passed (Munshifwa, 2018).

Munshifwa (2018) contends that the 1995 Lands Act was hurriedly passed leaving lots of stakeholders unsatisfied. This led to the initiation of consultations on a new land policy for the country whose initial draft policy was released in 2000 (GRZ, 2017). Another draft policy,

considered as the *First National Land Policy* was released in 2002 while the second one dubbed "*Draft Land Administration and Management Policy*" was released in 2006 for further consultation (GRZ, 2017; Munshifwa, 2018). In November 2015, another draft document was released while the December 2017 draft was released after consultations with the relevant stakeholders.

The December 2017 draft land policy was the last draft land policy. It ushered in the first-ever, National Land Policy of 2021. For the first time since the colonial era and the country's subsequent independence from the colonial masters, Zambia now has an operational national land policy. The national land policy is a policy document that provides for the sustainable administration and management of land as a national resource in Zambia (GRZ, 2021). It has been developed to help with the comprehensive management and administration of land in the country having realised that this has been a serious challenge over the years. GRZ (2021) further agrees that land administration and management have in the past resulted in people not being able to access the services being offered hence the development of the national land policy of 2021.

The government through this national policy document further aims to achieve efficient and effective land administration and management not only in urban areas where land is highly politicised and contested, but in rural areas too. As has been observed, foreigners are now buying land from the traditional authorities and setting up economic activities even in the remotest areas of the country (Mubanga, 2019). A case example would be that of the Chinese and Indian nationals that are now found all over the country be it in urban or rural areas. The national land policy of 2021 will further achieve harmonious social, political, economic growth and environmental well-being and prosperity for all Zambian citizens regardless of their social status (GRZ, 2021). It is prudent to mention that the national land policy is a very important national policy document that outlines land tenure systems and rights in the Zambian context and works in conjunction with other laws and public policy documents that govern Zambia's land administration and management.

According to Hull, Babalola, and Whittal (2019), land tenure rules and rights mirror the social relationships that order society and the balance of power among and between stakeholders. Any attempts to change or alter these rules and rights may lead to important shifts in these existing social relationships and societal power dynamics. In most instances, access to land and land administration are influenced by existing land policy or policies (Kombe, 2005; Mubanga, 2019). In the Zambian context, land administration and access to land are regulated by both

local and statutory institutions and policy documents where ultimate access to land is influenced by social norms and political networks (Mubanga, 2019).

Political powers play a significant role in enabling individual and collective land access, regulation of land rights and land conflict resolution (Lavigne Delville, 2010). Lusaka's Forest 27 can be used as a case example of political power and land relations. The former ruling party (the Patriotic Front) degazetted the forest, allocated plots, granted access to the land amongst the political elites and changed the land use from water recharge to settlements. A few months after losing power to the now ruling party (the United Party for National Development), there are plans to demolish all the buildings in the forest to restore its water recharge function. In the presence of good land governance and effective urban planning, this would never be the case. The next section discusses land policy and legislation in Zambia.

2.7.3 Land Policy and Legislation in Zambia

According to the current National Land Policy of 2021, all land is vested in the president (Adams, 2003; GRZ, 2015; Mushinge, 2017). Zambia operates under a dual land tenure system, statutory and customary land tenure. Under the customary land tenure, land is controlled and managed by traditional authorities while statutory (titled) land is managed by formal institutions as mandated by the state (Mandhu et al., 2019; Mushinge, 2017; Nolte, 2014). Most of the country's land is customary and is recognised by the Zambian constitution. Statutory land accounts for less than ten percent of the country's land yet services about forty percent of the country's population (Munshifwa, 2018; Mushinge et al., 2018; Mushinge, Simposya, & Chowa, 2020). Customary land on the other hand, covers ninety percent of the country and accounts for slightly less than sixty percent of the country's population (GRZ, 2015; GRZ, 2017; Mushinge & Mwango, 2017).

Most of the country's major economic activities, industry, commercial farmland, and urban areas are located on state land. Customary land, often confused with communal land, is home to seventy-four percent of the country's protected forest areas, wildlife estate, game management areas and national parks (GRZ, 2017; Munshifwa, 2018). Communal land is one of the types of land use under customary land referring to common resources such as forests, wetlands, and game management areas that are owned by the community and not an individual community member or family (GRZ, 2017; Munshifwa, 2018). While the increasing urban population must share the limited state land for various competing uses such as economic activities, developmental projects, urban agricultural activities, and settlements among others,

most of the customary land remains idle. This has attracted and led or prompted some foreigners and urban elites to grab huge tracts of customary land in the name of developing rural areas.

The ten percent state land with its various and competing land uses poses different problems. These include lack of serviced land for settlements, increased unplanned settlements, poor land ownership record keeping, illegal land uses, slow pace and bureaucracy involved in the security of land tenure issuance, and political interference to mention but a few (UN-Habitat, 2016). Almost all the time, state land provides some tenure security using a title. Customary land on the other hand, lacks that security as it is traditionally administered and managed. It is very easy for locals and indigenous occupants to be evicted from a piece of land they have occupied since time immemorial by someone who would have managed to convert the land from customary to state by obtaining the necessary documentation (Chitonge et al., 2017).

There have been many cases of this nature that have worked to the disadvantage of the locals (Chitonge et al., 2017; Munshifwa, 2018; Spichinger & Kabala, 2014). Such cases have necessitated studies with a focus particularly on land administration and management in Zambia, but my study goes an extra mile by additionally looking at how urban land use and urbanisation processes have affected and continue to affect Lusaka urban residents particularly, the poor and vulnerable groups who have traditionally been dependant on urban open spaces for their subsistence agriculture and survival. The study highlights the plight of urban residents by documenting how the urban poor and vulnerable negotiate their rights to the city amidst the rapidly urbanising city, the growing urban population and the changing urban landscape.

Nolte (2014) carried out an interesting study in Zambia on poor land governance with a focus on large-scale investments. His major findings were that formal structures and rules in the acquisition of land in the country (thanks to the 1995 Land Act), left local and indigenous peoples destitute. The weak enforcement of laws, instead, empowered the elites/affluent, foreigners and or investors with large tracts of land (e.g., Forest 27 and Kingsland city in a water recharge area, Munali nickel mine etc). The land is ideally traditional but is later converted into statutory land within city peripherals, mostly at the expense of the locals who are often displaced without compensation (Munshifwa, 2018; Nolte, 2014). In peri-urban areas, poor landowners are compensated or rather, bought off by the highest bidder, a transaction that leaves the urban poor and vulnerable mostly internally displaced and poorer than before (Li & Siame, 2020). Urban land use and land governance must be regarded as the processes involved, people and relationships of a dynamic nature (Nolte, 2014). Whilst studies of this nature are

commendable and should be encouraged, there is equally a need for a paradigm shift. We cannot continue studying land administration and management and agricultural investments without acknowledging the fact that these are but part of a complex web of factors that interact together to shape the urban landscape and urbanisation narrative that ultimately affect the poor and vulnerable urban residents.

Studying the patterns, influence, and barriers to large-scale land acquisition in Zambia, Manda et al. (2019) discovered that the massive acquisition of land at a large scale is mostly for commercial use. Although their focus was on large scale land acquisition, their study revealed poor land administration and management in Zambia. This was attributed to several factors such as the top–down land administration system, competing land authorities, institutions, and agendas, lack of well-defined property rights, corruption, lack of secure land tenure and, political interference among others (Arezki et al., 2015; Deininger et al., 2012; Manda et al., 2019). Overall, land policy and legislation in Zambia are seen as problematic due to various reasons including unreliable land information management systems, lack of land governance decentralisation and, collaboration among different stakeholders involved (GRZ., 2011, p. 7).

Other reasons cited include rapid urbanisation and population growth, rural-urban migration, urban sprawl and, the massive conversion of rural agricultural land to urban land use. In most instances, these are shifts in land use that threaten urban food security and the achievement of SDGs number 2 and 11 specifically. SDG no.2 talks about ending global hunger by promoting sustainable agriculture and achieving global food security for all people. SDG no.11 on the other hand is concerned with sustainable cities and communities that are safe, inclusive, resilient and sustainable by the year 2063. There is overwhelming empirical evidence pointing to the fact that urbanisation and urban LUC have had implications on urban residents. Hence, the focus of my study was on urbanisation and urban land use change and how these interact with other factors such rural-urban migration and internal displacements to shape the rights to the city experiences of the urban poor and vulnerable groups in Lusaka.

At the core of this study is the understanding that urbanisation and urban LUC cannot be considered in isolation. Instead, there must be coherence between urbanisation, rural-urban migration and internal displacements, the competing and changing urban land uses, land management policies and, the implications on urban residents (Jehling & Thomas, 2016). This will help us to understand how the urban poor and vulnerable in Lusaka are finding their space in the ever-changing and evolving urban space. Urban areas are rapidly urbanising especially in the developing countries and Lusaka, in Zambia has not been an exception.

2.8 Identifying the Gaps in Knowledge

As cities are rapidly urbanising and their urban populations growing, changes in land use are taking place at global, regional, and local levels. Several studies on urbanisation, urban land use change and land policies at various levels have been conducted world over. At a global level, empirical evidence suggests that urbanisation and urban land use change have massively altered the urban landscape (Collier & Venables, 2017; Lambin & Meyfroidt, 2011; Li et al., 2017; Nuissl & Siedentop, 2021). Undoubtedly, urbanisation and urban land use change much as they are desirable and inevitable, have left a trail of effects at the global, regional, and local levels (Bodo, 2019).

Glaeser and Xiong (2017) have cited economic development, technological advancements, and infrastructure development as the major drivers of urbanisation at the global and regional levels. On the other hand, Nuissl and Siedentop (2021) postulate that globalisation and the global demand for food and natural resources have changed the way in which land is utilised regionally and globally. Li and Siame (2020) cited urban population growth and urban expansion as the reasons accounting for the rapid urbanisation of cities particularly in the developing countries. Collier and Venables (2017); Tacoli et al. (2015), argue that rural urban migration accounts for urban population increase and the subsequent urbanisation of cities worldwide particularly in the developing countries. Suffice to say, urbanisation and urban LUC often leave the urban poor vulnerable as they are prone to internal displacements, lack of basic social amenities and services, urban injustices (such as the urban divide) and inequalities among others.

Urbanisation and urban land use have recorded various effects across the globe (Nuissl & Siedentop, 2021). These include the threat to food security, climate change, biodiversity loss, reduced access to resources, reduction in human and environmental wellbeing, gentrification, deforestation, internal displacements of the urban poor people, and increase in rural-urban migration among others (Chileshe, 2018; Collier & Venables, 2017; Tacoli et al., 2015). Empirical evidence, however, suggests that more often than not, it is the urban poor and vulnerable who bear the brunt of urbanisation and urban land use change (Lambin & Meyfroidt, 2011; Li et al., 2017; Meyfroidt et al., 2013; Olorunfemi et al., 2022).

Studies have equally been conducted in Zambia, particularly, in Lusaka urban district. In Zambia, studies that have been conducted have mostly focused on and examined LUC in both urban and rural areas. Zambia has been urbanising rapidly, its urban population has been

growing too. That has come with adjustments and changes in the uses of urban and peri-urban land (Central Statistics Office, 2018; Hampwaye et al., 2020; Monde, 2023). The shifts in Land use have mostly affected the urban poor and left them vulnerable in a number of ways including being internally displaced and lacking basic social amenities and services provision.

Land power relations have equally taken centre stage in Zambia especially with the coming in of foreign investments and the government's policies aimed at economic development (Li & Siame, 2020; Mubanga, 2019). Various studies conducted suggest that Zambia's urban landscape has significantly changed over the years and the urban poor have paid the price (Li & Siame, 2020; Mubanga, 2019; Simwanda & Murayama, 2018). The extent to which urbanisation, rural-urban migration and internal displacements, urban land use change, land administration and management interact and yield various spatial forms across the Lusaka urban political and geographical landscapes remain poorly understood.

Despite considerable scholarly attempts made in documenting urban LUC and urbanisation in Lusaka, their impacts on urban residents and how they have still maintained their right to the city remain unclear, something this study was interested in finding out. While urbanisation can't be controlled, urban land use can and should be controlled by the relevant authorities and all stakeholders to ensure sustainable urbanisation of cities, urban livelihoods and, environmental wellbeing among others.

CHAPTER THREE

METHODOLOGICAL CONSIDERATIONS

3.1 Overview

There are different research methods that one can use to achieve the intended goal of answering the research question. The choice and subsequent use of a particular method/s depends on various factors including the scope of the study, the resources (time and financial) available and the objectives of the study. Research methodology refers to the systematic and scientific way of solving the research problem using various steps and their accompanying logic adopted by the researcher (Saunders et al., 2012). According to Crotty (1998), methodology is the strategy or plan of action that lies behind the researcher's choice and ultimate use of particular methods in their study. Myers (2019) defines research method as a strategy of inquiry, which moves from the underlying assumptions to research design, and data collection to data analysis and presentation. Guba and Lincoln (1994) further argue that methodology asks the question of how the researcher can go about finding out whatever they believe can be known about that study.

In the context of this study, research methodology refers to the systematic and scientific way of answering the research question and generating solutions that enhance the quality of all forms of life and the wider environment (Saunders, Lewis, & Thornhill, 2012). It was the step-by-step detail of how the research aim was achieved. It encompasses all the detailed steps that are involved from underlying assumptions all the way to the conclusion of the research question. Research methodology in this study was of paramount importance as it was the vehicle through which the set aim and objectives were achieved. Furthermore, the methodological considerations articulated how this study went about answering the research question (Creswell, 2012).

This chapter covers the entire methodology of the study as is outlined next. It is structured in such a way that it starts with the introduction of the entire chapter. The introduction provides an understanding of what is meant by research methodology and the implied meaning in the context of this study. The philosophical positionality of the study which informed this study and articulates my understanding of the world around me is the next section presented. Society is socially constructed and as such, people understand the world differently. The study adopted pragmatism philosophical approach whose key tenets are discussed in this chapter. This is

followed by the research design which outlines the step-by-step process of the study. The research design further provides a description of the study area and the justification for the selection of the same. The study design also includes the details of the study population and sampling procedure which provide details of the sampling frame, and the data instrumentation used for the study. The research design is wrapped up by the data analysis which provides details of how the data were cleaned, analysed and structured into themes and further presented in a way that makes sense and answers the research question, meets the objectives and achieves the aim of the study. The chapter concludes with the methodological reflections which is the conclusion of the chapter.

3.2 Philosophical Positionality of the Study

All research is based on some underlying philosophical assumptions about what constitutes valid research and which research methods are appropriate for the development of knowledge in a given study (Guba & Lincoln, 1994, p. 105). According to Saunders et al. (2012), questions of research methods are of secondary importance to questions of which paradigm applies to one's research. Lather (1986, p. 259) further asserts that research paradigms inherently reflect our beliefs about the world we live and want to live in. Research paradigms describe perceptions, beliefs, assumptions and the nature of reality and truth, and consequently influence how the research is carried out, from design to conclusions (Lather, 1986).

According to Jensen (1996), ontology, epistemology and methodology characterise research paradigms. In the context of research, Guba and Lincoln (1994) further points out that ontology is concerned with the nature of reality, epistemology about how knowledge is acquired and, methodology is concerned with how researchers go about finding the knowledge. A research paradigm is the basic belief system or worldview that guides the entire investigation (Creswell & Clark, 2017). Kuhn (1977) defines a paradigm as; "an integrated cluster of substantive concepts, variables, and problems attached with corresponding methodological approaches and tools…" It entails a community of researchers' commonly held research culture that encompasses a set of beliefs, values, and assumptions regarding the nature and conduct of research (Kuhn, 1977).

According to Lincoln and Denzin (2003), a paradigm is an interpretive framework and a basic set of beliefs that guide action. It is how knowledge is being developed and interpreted (Saunders, Lewis, & Thornhill, 2007). It is the basic belief system or world view that guides the investigation, not only in choices of method but in ontologically and epistemologically

fundamental ways (Terre Blanche & Durrheim, 1999). According to Scotland (2012), every paradigm is based on its own ontological and epistemological assumptions and as such, the philosophical underpinnings of each paradigm can never be empirically proven or disproven. In the context of this study, a research paradigm is a set of commonly held beliefs or agreements that are shared between researchers. These are beliefs about the nature of research and how research problems should be understood and addressed in light of the evolving research field. It can be understood as the study's guiding pattern, structure and framework or system of scientific and academic ideas, values and assumptions (Olsen, Lodwick, & Dunlap, 1992, p. 16).

According to Saunders et al. (2012) it is of paramount importance that the paradigm of choice is outlined before presenting the research methods as it is the paradigm that guides and gives direction to the study. Saunders et al. (2012) further argue that the philosophy or paradigm adopted by a study contains important assumptions of how the world is viewed. It is these assumptions that will underpin the research strategy and the methods that a researcher chooses as part of their strategy. Blaikie (2000) equally points out that the researcher's preference of a paradigm must be considered in light of their original research problem. If that is not done, the researcher might end up adopting methods that are not compatible with their study thereby affecting the final work through lack of coherence.

According to Scotland (2012), different paradigms inherently contain differing ontological and epistemological views. They have differing assumptions of reality and knowledge which underpin their research approach as reflected in their methodology and methods. Every paradigm adopted will be influenced by practical considerations where the main influence is likely to be the relationship between the nature of knowledge and the process by which it is developed (Saunders et al., 2007). As already mentioned, people understand the world differently and as such, they approach similar research questions using different philosophical orientations. This means that two different researchers can employ two different philosophical approaches to solving the same problem (Collins, Onwuegbuzie, & Jiao, 2007; Saunders et al., 2012).

Within the scope of social sciences research, the most recognised and applied paradigmatic frameworks are *positivism*, *critical realism,* and *constructivism/interpretivism* (Candy, 1989; Collis & Hussey, 2014; Punch, 2009). There are different research paradigms utilised by scholars in their various studies that fall into two broad categories of positivism or post-positivism and constructivism/interpretivism (Candy, 1989; Punch, 2009). These paradigms,

as noted by Punch (2009) clearly distinguish qualitative and quantitative research types. This has however, changed with the coming on of a third paradigm that offers scholars, the chance to not only choose one of the two but to combine the two paradigms in a single study (Creswell & Clark, 2017; Hesse-Biber, 2010; Saunders et al., 2012). The third paradigm is known as pragmatism, a paradigm of choice for this study. Table 1 outlines the major differences between the commonly used research paradigms especially in the context of the social sciences.

Table 1: Major Differences Between Main Research Paradigms

Paradigm	Ontology *What is reality?*	Epistemology *How can I know reality?*	Theoretical Perspective *Which approach do you use to know something?*	Methodology *How do you go about finding out?*	Method *What techniques do you use to find out?*
Positivism	There is a single reality or truth (more realist).	Reality can be measured and hence the focus is on reliable and valid tools to obtain that.	Positivism Post-positivism	Experimental research Survey research	Usually quantitative, could include: Sampling Measurement and scaling Statistical analysis Questionnaire Focus group Interview
Constructivist / Interpretive	There is no single reality or truth. Reality is created by individuals in groups (less realist).	Therefore, reality needs to be interpreted. It is used to discover the underlying meaning of events and activities.	Interpretivism (reality needs to be interpreted) • Phenomenology • Symbolic interactionism • Hermeneutics Critical Inquiry Feminism	Ethnography Grounded Theory Phenomenological research Heuristic inquiry Action Research Discourse Analysis Femenist Standpoint research etc	Usually qualitative, could include: Qualitative interview Observation Participant Non participant Case study Life history Narrative Theme identification etc
Pragmatism	Reality is constantly renegotiated, debated, interpreted in light of its usefulness in new unpredictable situations.	The best method is one that solves problems. Finding out is the means, change is the underlying aim.	Deweyan pragmatism *Research through design*	Mixed methods Design-based research Action research	Combination of any of the above and more, such as data mining expert review, usability testing, physical prototype
Subjectivism	Reality is what we perceive to be real	All knowledge is purely a matter of perspective.	Postmodernism Structuralism Post-structralism	Discourse theory Archaeology Genealogy Deconstruction etc.	Autoethnography Semiotics Literary analysis Pastiche Intertextuality etc.
Critical	Realities are socially constructed entities that are under constant internal influence.	Reality and knowledge is both socially constructed and influenced by power relations from within society	Marxism Queer theory feminism	critical discourse analysis, critical ethnography action research ideology critique	Ideological review Civil actions open-ended interviews, focus groups, open-ended questionnaires, open-ended observations, and journals.

Source: Crotty (1998); Scotland (2012); Easterby-Smith, Thorpe, and Jackson (2012).

The most common paradigms are positivism, constructivism/interpretivism and pragmatism. According to Creswell (2012), positivism argues for a single reality that can actually be measured and known. Consequently, quantitative research methods are hence employed in the quest to measure reality (Saunders et al., 2012). Constructivists/interpretivists on the other hand do not believe in a single reality and or truth but that no single reality exists (Creswell & Creswell, 2017). Because no single reality exists, reality must be interpreted. To get and interpret those multiple realities, qualitative research methods are used as they seek to give a deeper picture and provide meaning. Johnson and Onwuegbuzie (2004) note that pragmatism believes that there are multiple realities out there and that reality is not constant and as such, must be constantly renegotiated, debated and interpreted. Pragmatism believes in using the best methods for solving a problem and arriving at the best solution (Hesse-Biber, 2010). Pragmatists do not adopt a single method of interpreting the world but a combination of methods hence the adoption of multiple methods involving both qualitative and quantitative research methods.

3.2.1 Pragmatism Paradigm

Teddlie and Tashakkori (2009) are of the view that researchers can use pragmatism, a paradigm that allows for the complementary use of both qualitative and quantitative methods in a single study. According to Kivunja and Kuyini (2017), pragmatism developed as an effort to bridge the paradigm war between the opposing positions of positivism and interpretivists. Pragmatism derives from the work of notable scholars such as, Pierce, James, Mead and Dewey (Crotty, 1998). Recent pragmatism writers include Rorty (1990), Cherryholmes (1992), Murphy and Murphy (1990) among others. It is the pragmatism philosophical orientation that guided this study's strategies and methods.

According to Creswell (2009), pragmatism arises out of actions, situations, and consequences rather than antecedent conditions. It is worldview that is more concerned with the application of what works in solving a problem as well as the solution to the same (Patton, 1990). As a philosophy, pragmatism considers the problem to be solved as being the most important than the methods of solving it (Creswell, Fetters, & Ivankova, 2004; Rossman & Wilson, 1985). As such, researchers employ all the approaches available to understand the problem. This entails that the most important determinant of the epistemology and ontology adopted in pragmatism is the research question as one may be more appropriate than the other for answering particular questions.

Saunders et al. (2012) argue that pragmatism recognises that there are many different ways of interpreting the world around us and undertaking research. According to Teddlie and Tashakkori (2009); Saunders et al. (2012), pragmatism argues that no single point of view can ever give the entire picture and that there are multiple realities out there. Teddlie and Tashakkori (2009) further argues that it is more appropriate for the researcher using pragmatism in a particular study to think of the philosophy adopted as a continuum rather than opposite positions.

Collis and Hussey (2014), Hesse-Biber (2010) equally agree with the above argument and add on to say that unlike positivism and interpretivism research philosophies, pragmatism research philosophy can integrate more than one research approach and research strategies within the same study. Studies that employ pragmatism research philosophy can, furthermore, integrate the use of multiple research methods such as qualitative, quantitative and mixed methods within one study (Creswell & Clark, 2017; Saunders et al., 2012).

Pragmatism was used in this study as it helped to shed light on how research approaches – both qualitative and quantitative, can fruitfully be mixed in trying to solve a research problem, ultimately arriving at the best answer (Collins et al., 2007). In the context of this study, qualitative and quantitative research approaches were mixed in ways that offered the best opportunities for answering the research question. Overall, pragmatism is not committed to any one system of philosophy and reality as pragmatic researchers do not see the world as an absolute unity (Creswell et al., 2004; Teddlie & Tashakkori, 2009). This research drew liberally from both quantitative and qualitative methods of research in the quest to find answers to the important research questions.

Pragmatism posits that the nature of knowledge (ontology) is not static but has been changing over time. According to Johnson and Onwuegbuzie (2004), knowledge (epistemology) in pragmatism is generated through the use of various methods to understand a research problem. The research question determines the epistemology and ontology adopted. Pragmatism recognises that there are various ways of interpreting the world, undertaking research and that no single point of view can ever give the entire picture. Pragmatism posits that there may be multiple realities out there (Creswell & Clark, 2017; Saunders et al., 2012). The use of pragmatism within this study further integrated the use of multiple research methods (mixed methods) hence its importance.

Pragmatism emphasises on the use of real-life experiences and practical solutions to solve everyday problems. Using pragmatism, the study focused on what works in solving complex problems and improving people's livelihoods. This means that pragmatism is not interested in abstract theories when presented with a problem to be solved but in the use of practical solutions to solving the problem (Goldkuhl, 2004). When presented with real-life problems, pragmatism asks questions and looks around for what will work in reality and make a positive difference. As noted by Johnson and Onwuegbuzie (2004), some of the key principles of the pragmatism paradigm include its focus on practical results where, the concern is, what really works in practical terms or real life. Johnson and Onwuegbuzie (2004) assert that the value of any concept and truth is judged based on practical consequences and or outcomes.

Using pragmatism, researchers are flexible and open to the adoption of new ideas when circumstances change or when new information comes to light as long as it results in better solutions (Collis & Hussey, 2014; Creswell & Clark, 2017). According to Saunders et al. (2012); Teddlie and Tashakkori (2009), researchers are emboldened to exercise willingness to learn from experience, to not be theoretical and rigid in solving real-life problems. As a result, pragmatists are always willing to adapt their beliefs and actions provided they result in better outcomes, solving a real-life problem and ultimately improving people's lives. Pragmatism is not bound by long-held beliefs, theories or prescribed rules for solving problems but focuses on the utilisation of what works and improves people's welfare (Saunders et al., 2012). Johnson and Onwuegbuzie (2004) postulate that pragmatism espouses pluralism where multiple viewpoints to a problem are acceptable provided, they are valid. This philosophy also believes that multiple methods can be effective in solving a problem provided they yield the desired results (Creswell & Creswell, 2017).

Using the pragmatism philosophical lens, the truth, which is useful, is determined using real-life experiences, consequences and the value of ideas and actions put together (Johnson & Onwuegbuzie, 2004). Creswell and Creswell (2017) further emphasise that for any given problem and context, the concern is basically on what works. As such, any belief or idea that aids in solving real life problems, achieving goals and ultimately improving lives is more interesting and is considered to be true (Johnson & Onwuegbuzie, 2004). This accounts for the consequent use of both qualitative and quantitative techniques in this study as pragmatism encouraged the researcher to be open minded and to also use an adaptive approach to solving the research problem. Overall, pragmatism is all about using life experiences, being open minded and adaptive and, using multiple approaches to solving problems that improve people's

lives at the end of the day. The philosophy rejects rigidity or long held theories and beliefs when it comes to solving research problems. There is, however, need to mention that there is no single philosophy that can rightly fit all studies. As a result, a paradigm of choice will depend on various factors including one's perception of the world, their research question, aim, and objectives.

3.2.1.1 Ontology and Epistemology Positionality

Ontological and epistemological aspects concern what is commonly referred to as a person's worldview which has significant influence on the perceived relative importance of the aspects of reality (Guba & Lincoln, 1994; Lather, 1986). This explains the reason why different researchers' ontological and epistemological positions often lead to different research approaches towards the same phenomenon (Grix, 2004). It is impossible to engage in any form of research without committing to ontological and epistemological positions since ontological assumptions give rise to epistemological assumptions. These, in turn, give rise to methodological considerations that in turn, give rise to issues of instrumentation and data collection (Hitchcock & Hughes, 1995).

The term ontology refers to a branch of philosophy concerned with articulating the nature and structure of the world (Wand & Weber, 1993, p. 220). It specifies the form and nature of reality and what can be known about it. Ontology describes our claims or assumptions on the nature of reality, whether it is objective reality that exists, or subjective reality that is created in our minds (Creswell & Clark, 2017). Ontology is the study of being (Crotty, 1998, p. 10). Ontology makes claim about what exists, what it looks like, what units make it up and how these units interact with each other (Blaikie, 2007).

Ontology is a system of belief that reflects an interpretation by an individual about what constitutes a fact or reality. According to Blaikie (2009), ontology is associated with a central question of whether social entities should be perceived as objective or subjective. In that regard, objectivism and subjectivism can be specified as two important aspects of ontology; where objectivism (also known as positivism) refers to the position that social entities exist in reality external to social actors concerned with their existence (Saunders et al., 2012). According to Bryman (2012), constructionism is the ontological position where social phenomena and their meanings are continually being accomplished by social actors.

Objectivism is an ontological position that assumes that social events and or circumstances and their meanings have an existence that is independent of social actors (Bryman, 2012).

According to Bryman (2012); Saunders et al. (2012), this ontological position implies that social phenomenon is regarded as a '*fait accompli'*, and that those external facts are beyond our reach and therefore, influence. Objectivism assumes that social reality exists independently away from the knower (Bryman & Bell, 2007; Eriksson & Kovalainen, 2008). On the contrary, subjectivism (also known as constructionism or interpretivism), perceives social phenomena as figments of our own perceptions and consequent actions concerned with our existence. This ontological position asserts that social events/circumstances and their meaning are continually being accomplished by social actors on a continuous basis hence their constant construction and revision (Bryman, 2008).

The term epistemology, first coined in 1856 by a Scottish philosopher James F. Ferrier (Blaikie, 2007) is concerned with the nature of knowledge, what does and doesn't constitute warranted knowledge (Cameron, 2011). Epistemology is also concerned with the nature and forms of knowledge (Cohen, Manion, & Morrison, 2002). According to Hirschheim et al. (1995), epistemology refers to the nature of the relationship between the researcher and what should be known. It denotes the nature of human knowledge and understanding that can possibly be acquired through different types of inquiry and alternative methods of investigation (Hirschheim et al., 1995, p. 10).

According to Guba and Lincoln (1994), epistemology is the philosophy of knowledge or how we come to know. According to Eriksson and Kovalainen (2015), epistemology studies knowledge, by attempting to distinguish between true (and adequate) knowledge and false (or inadequate) knowledge. Guba and Lincoln (1994) furthermore note that epistemology asks about the nature of the relationship that exists between the researcher and what can be known. Thus, epistemology gives a guide on the most appropriate ways of inquiring about the nature of the world (Smith, Thorpe, & Jackson, 2008).

Ontological assumptions are concerned with what constitutes reality, in other words what is, or the nature of reality. On the other hand, epistemological assumptions are concerned with how knowledge can be created, acquired, and communicated, in other words, what it means to know (Eriksson & Kovalainen, 2015). While epistemology is concerned with what constitutes acceptable knowledge in a field of study, ontology is mainly concerned with the nature of reality (Cohen et al., 2002; Guba & Lincoln, 1994; Hirschheim et al., 1995).

Ontology raises questions on how the world functions and various views that people hold within whereas, epistemology on the other hand, is the way knowledge is demonstrated and

how it can be justified. In any research or study, ontology and epistemology can never be over emphasised as the two create a holistic view of how knowledge is viewed and how researchers can see themselves in relation to this knowledge, and the methodological strategies that are used to discover it (Saunders et al., 2012; Teddlie & Tashakkori, 2009).

3.2.1.2 Ontological Assumption of the Study

This study's ontological assumption or position is that reality exists out there, independent of individual social actors (Saunders et al., 2012). The reality is whatever has been subjected to scrutiny and has proven to be true over time. In the same vein, based on human lived experiences, reality can be socially constructed (Denscombe, 2010). In the context of this study, urban land use change in Lusaka urban exists and so does urbanisation regardless of people's individual opinions. Land is an essential resource and one of the three factors of production without which, no economic activity can take place (Todaro & Smith, 2020). Whether some individuals are aware of the LUC taking place in Lusaka or not, urban land use change has been happening and, anthropogenic activities have been contributing heavily to this scenario. Various factors of LUC and urbanisation (both natural and human induced) also known as drivers are responsible for this reality that exists on the ground (Olorunfemi et al., 2022; Teixeira et al., 2014).

There is a high demand for land for various urban uses driven by various factors. The uses of urban land can, however, change due to the importance that individuals attach to the land ecosystem. Furthermore, the uses of land especially urban land, have evolved based on individual and community preferences of the different functions of the land resource. This brings in the aspect of multiple realities that exist as all individuals have their own different interpretations of reality (Creswell & Clark, 2017). As noted by the study, the drivers of urban LUC are many, meaning that the realities are multiple and as such, no single reality can help to adequately explain the realities of urbanisation and urban LUC taking place (Saunders et al., 2012).

3.2.1.3 Epistemological Assumption of the Study

In accordance with various pragmatic scholars such as Creswell and Clark (2017), Hesse-Biber (2010), Johnson and Onwuegbuzie (2004), Leavy (2017), Saunders et al. (2012), pragmatism's major epistemological underpinning is that the generation of knowledge is not a one-method approach. Instead, knowledge is generated using more than a single approach or method (Creswell & Creswell, 2017). This simply means that knowledge generation is not necessarily

a tug-of-war between qualitative and quantitative approaches. Rather, it is a combination of the two widely used methods (qualitative and quantitative) that, put together, make up mixed methods of knowledge generation or acquiring new knowledge.

Knowledge is generated and acquired using a continuum of methods and not just qualitative or quantitative approaches. The study believed that the use of a single method of either qualitative or quantitative was not going to adequately answer the research question or provide adequate data for the study (Teddlie & Tashakkori, 2009). Furthermore, the study believed objectivity or subjectivity in and of themselves alone were not going to adequately address the research problem and produce the answers that the research question sought to address.

For the objective part of the study, GIS and Remotely Sensed Imagery was used to produce evidence of urbanisation and urban LUCs in Lusaka urban. Semi-structured interview schedules were used for the Government ministries, departments, CSOs and NGOs for the subjective part of the research question. Furthermore, observation forms and questionnaires were used for the generation of information from selected residents of Lusaka urban district. Various research methods were used in the study as they were deemed to be the best way of adequately addressing the research question (Saunders et al., 2012). According to Creswell and Clark (2017), the use of a combination of research methods was essential. This was because it helped the researcher to gain a wider perspective of urbanisation, urban LUC and urban resident's rights to the city in the context of Lusaka urban district.

3.3 Research Approach

Mixed methods (MM) approach was used to study perspectives on urbanisation and land use change in the Lusaka urban district of Zambia. MM were selected and subsequently used in this study as they gave both the story and the numbers at the same time. According to Saunders et al. (2012), different types of research approaches have been and are still being used by scholars to conduct research across the scholarly landscape. Empirical evidence suggests that the overall nature (natural or social sciences) of the study determines the research approach (Creswell & Creswell, 2017; Hesse-Biber, 2010; Johnson & Onwuegbuzie, 2004).

Creswell and Clark (2017) argue that the research approach adopted by any given study is dependent on several variables including research objectives, aim and the nature of the inquiry. Although there are other distinctions in the research modes, the most common research methods are the qualitative and quantitative ones. These two methods or approaches of research

refer to how data are collected, analysed, the type of generalizations and, representations derived from the data (Polit, Beck, & Hungler, 2001).

According to Lincoln and Denzin (2003), quantitative research methods were originally developed in the natural sciences to study natural phenomena. On the other hand, qualitative research methods were developed in the social sciences to enable researchers to study social and cultural phenomena (Hesse-Biber, 2010; Lincoln & Denzin, 2003). Over time, however, some researchers ended up combining the two methods (MM) in one study and, even today, more and more researchers prefer to use a mixed methods approach (Hesse-Biber, 2010).

The concept of mixing different methods originated in 1959 when Campbell and Fisk used multi-methods to study the validity of psychological traits (Creswell, 2009). It was after the realization that all methods have inherent weaknesses or limitations and that the bias in one method would neutralize and cancel the biases of the other method (Creswell & Clark, 2017; Creswell et al., 2004; Teddlie & Tashakkori, 2009). By the 1990s, the idea of mixing the research methods moved from seeking to converge to integrating the qualitative and quantitative approaches in a single study (Creswell & Creswell, 2017; Hesse-Biber, 2010).

Mixed methods approaches are procedures for collecting, analysing, and mixing both quantitative and qualitative data in a single study or a multiphase series of studies (Creswell & Clark, 2017; Greene, Caracelli, & Graham, 1989; Hesse-Biber, 2010). Mixed methods combine both qualitative and quantitative methods for use in a single research or study depending on the kind of study and its methodological foundation (Bryman & Bell, 2007). MM approach takes advantage of the differences between quantitative and qualitative methods in coming up with a comprehensive approach to the research problem (Collins et al., 2007; Greene et al., 1989; Johnson & Onwuegbuzie, 2004). Thus, the goal of mixed methods research is not to replace either the qualitative or quantitative approaches but rather, to draw from the strengths and minimize the weaknesses of both in single research studies or series of studies (Johnson & Onwuegbuzie, 2004).

According to Creswell (2012) the core argument for a mixed methods design is that the combination of both forms of data in a single study or a series of studies provides a better understanding of the research problem than either quantitative or qualitative data by itself. Mixed methods are better than just either qualitative or quantitative as one data set may not be enough hence, a second method is needed to enhance the primary method (Creswell, 2012; Johnson & Onwuegbuzie, 2004). Onwuegbuzie and Leech (2004) add on to say that mixed

methods design can also help to bridge the shortcomings between quantitative and qualitative research.

According to Johnson and Onwuegbuzie (2004), mixed methods design/approach allows the researcher to mix and match design components that offer the best chance of answering the study's specific research questions. MM gives the researcher more room to manoeuvre and use the best available methods to arrive at the best solution to the research problem. In like manner, Creswell (2012) also agrees with this study's choice of mixed methods as he postulates that MM allows researchers to look to many approaches to collecting and analysing data rather than subscribing to either quantitative or qualitative methods only. Creswell et al. (2004, p. 7) argue that mixed methods research is more than simply collecting both qualitative and quantitative data; it implies that the data are integrated, related, or mixed at some stage of the research process.

Mixed methods enabled this study to collect both qualitative and quantitative data at the same time. Data from both qualitative and quantitative was needed for better comprehension and understanding of the research problem that was under investigation. Furthermore, the use of more than one method (MM) to answer this study's research question enhanced the credibility of the research findings (Hesse-Biber, 2010). Simply put, MM offered this study the best opportunity to answer the research question in the best possible way hence its adoption and subsequent use. MM further allowed this study to maximise on the research question by leveraging the strengths and weaknesses of one method over the other (Leavy, 2017). This is something that would have been impossible with the use of only qualitative or quantitative methods on their own.

3.4 Research Design

Research designs are procedures for collecting, analysing, interpreting, and reporting data in research studies (Creswell et al., 2004). Selltiz (1959, p. 50) define research design as the arrangement of conditions for the collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. According to Mouton (1996, p. 175) the research design serves to "plan, structure and, execute" the research to maximise the "validity of the findings". Burns and Grove (2003, p. 195) define research design as a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings. Creswell (2009, p. 3) defines research design as "plans and procedures for research that span the decisions from broad assumptions to detailed methods of

data collection and analysis". Research design is "the researcher's overall plan of action for answering the research question or testing the research hypothesis" (Polit et al., 2001, p. 165).

Cooper and Schindler (2011, p. 727) refer to a research design as an activity- and time-based plan; a blueprint for fulfilling research objectives and answering the research question. It gives directions from the underlying philosophical assumptions to research design, data collection, analysis, and interpretation (Saunders et al., 2012). Informally, a research design is an action plan for getting from *here* to *there*, where; here may be defined as the initial set of questions to be answered and 'there' is some set of conclusions/answers (Yin, 2003, p. 19). Mouton (2001) likens a research design to a house plan which reflects on paper how the actual house, once completed will look like. Besides that, the house plan (research design in this case) acts as a guide and compass to the builder of how the house must be constructed.

Research design was the conceptual structure within which this research was conducted (Kothari, 2004). It was the blueprint for the collection, measurement, and analysis of the study's data (Leedy, 1993, p. 195). In this study, the research design outlined what the researcher did from inception right up to completion. It acted as the study's guide from the laying down of the study objectives to the analysis of data (Yin, 2003). The research design simply acted as a series of signposts that kept the study in the right direction from the stage of research ideas up to its completion (Polit et al., 2001). According to Kothari (2004), a research design was paramount in this study as it facilitated the smooth sailing of various research operations for efficient research as well as the yielding of maximum information with minimal expenditure.

The importance of a research design can never be overemphasized in any research process. This is because a research design stands for advance planning on the methods that were used in data collection plus the techniques adopted in the analysis of data in light of the research objectives (Creswell & Clark, 2017). Saunders et al. (2012) argues that a research design must be prepared before the study can be undertaken as it will act as a guide in organizing research ideas and the subsequent courses of action. According to Creswell and Creswell (2017), research design typically outlined how data were collected, the instruments that were used and, the intended means of data analysis in this study. Leedy (1993) equally notes that the goal of a sound research design is to provide results that are judged to be credible.

According to Saunders et al. (2007), research designs represent different models for doing research, and these models have distinct names and procedures associated with them. Creswell

and Clark (2017); Saunders et al. (2007) outline the research designs that are used under the mixed methods approach. They include the convergent parallel design, the explanatory sequential design, the exploratory sequential design, the embedded design, the transformative design, and the multiphase design.

The embedded, specifically, the concurrent embedded design was used for this study. Using the concurrent embed design, both quantitative and qualitative data were collected at the same time or in sequence, analysed concurrently whilst addressing different research questions (Creswell, 2009; Creswell & Clark, 2017). According to Creswell (2012), the purpose of the embedded design is to collect quantitative and qualitative data simultaneously or sequentially, but to have one form of data play a supportive role to the other. The second set of data augments and or supports the primary form of data (Johnson & Onwuegbuzie, 2004). Hesse-Biber (2010) argues that the underlying idea of the embedded design is to gather information that typically addresses a different question than the one asked for by the primary form of data. The supportive data may be either qualitative or quantitative, but most examples in the literature support adding qualitative data into a quantitative design (Creswell, 2009).

Since pragmatism emphasises the use of what works in solving a research problem, more than one research method was used in this study to achieve the objectives of the study and to ultimately, answer the research question. Neither objectivity nor subjectivity was going to answer the research question adequately hence, the combination of the two research methods (Creswell & Clark, 2017; Creswell & Creswell, 2017; Johnson & Onwuegbuzie, 2004). For sufficient evidence of urbanisation and urban land use change in Lusaka urban district, GIS and remotely sensed imagery were used (objective a).

For the subjective part of the research question (objectives b and c), semi-structured interview schedules were used for the various government ministries, NGOs and government departments such as the LPPA and the LCC. Questionnaires were employed for the collection of data from urban residents in the selected residential areas of Lusaka urban district. This was done to achieve the maximum possible information on urban LUC, urbanisation and, urban residents' rights (especially for the poor and vulnerable people) to the city.

Apart from just combining both quantitative and qualitative data, the concurrent embedded design provides an instance where the researcher can still collect qualitative data while the overall research design emphasizes quantitative approaches (Creswell, 2009; Creswell & Clark, 2017). Where the research approach is quantitative, the use of qualitative data helps to

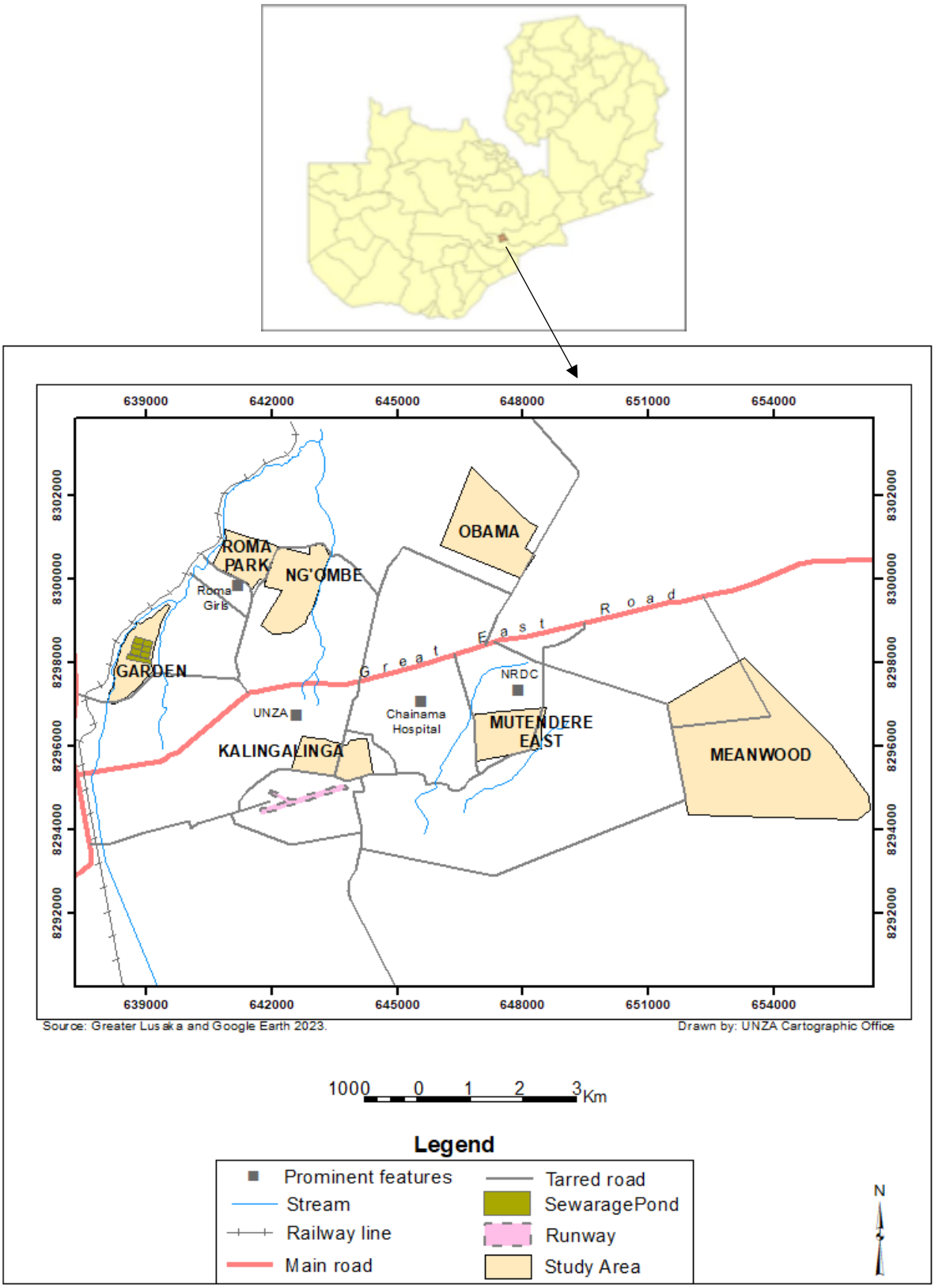
legitimize the use of such data (Johnson & Onwuegbuzie, 2004). Johnson and Onwuegbuzie (2004) further point out that the use of this research design, however, requires the researcher to be clear about the intent of the secondary data or they risk influencing the outcomes of the research through the introduction of the secondary data. Creswell and Clark (2017) also point out another challenge associated with this design; the collection of both forms of data could be overwhelming to a single researcher. Suffice to mention, the concurrent embedded design enabled me as a researcher to gain a wider perspective of the research problem. It also helped in enriching the findings of this study (Creswell, 2009).

3.5 Description of the Study Site

The study was conducted in Lusaka urban district, the capital city of Zambia. Since Lusaka is vast and a study of the entire district would be over-ambitious considering the time, nature of the study and resources that were available for this study, only some residential areas of Lusaka urban district were selected for the study. Specifically, the residential areas selected for this study were Meanwood Ibex Hill, Mtendere East, Kalingalinga, Obama, Roma Park, Ngombe and, Garden Chilulu (Figure 1).

It is worth noting that Kalingalinga, Ngombe, Garden Chilulu and Mtendere, matured informal settlements, were initially unplanned settlements that were later gazetted, and their status as residential areas upheld. It is the reason why in Garden Chilulu for instance, there are people living near the sewer treatment ponds today. In an ideal world, this is an anomaly as such are located far away from residential areas. Meanwood Ibex Hill, a formal settlement out of plot giving, was initially smallholding agricultural settlements. Obama was an informal settlement born out of plot giving while Roma Park is a formal and gated community birthed from plot giving. The study area was out of the concept of plotted urbanism as already alluded to.

Figure 1: Map depicting the Selected Study Areas.



Source: UNZA Cartographic Office (2023).

3.5.1 Brief History of the Study Area

Lusaka district is the provincial capital of the Lusaka province of Zambia. The initial capital city of Zambia (known as Northern Rhodesia colony then) was Livingstone (Collins, 1969). Northern Rhodesia was a British colony also known as a British Protectorate under the British South Africa Company (BSAC) before it got its independence in 1964 (Mulenga, 2003; Roth & Smith, 1995). Lusaka was initially a village called Lusaaka that was named after a village headman of the Soli people who lived where Lusaka lies today (Collins, 1969). Its notable development can be traced to 1905 when the construction of the railway line from South Africa to the Democratic Republic of Congo (DRC) reached Lusaaka village (Mulenga, 2003).

The place was initially identified as a water stop by the European settlers who later expanded it to a railway side and renamed it Lusaka. It was a simple and narrow railway stop along the line of rail that was used to transport copper from the Democratic Republic of Congo (DRC) to South Africa (Mulenga, 2003). According to Williams (1986), Lusaka then was only a small and narrow village and strip of land measuring 5km by 1.5 km along the line of rail under the Lusaka Village Management Board.

Owing to its central location in the country and the subsequent development mainly attributed to the white settlers, Lusaka became the new capital city of Zambia in 1935 (Hall, 1965). Lusaka city has, over the years expanded to a spatial extent of 350 km^2 by 2002 (Mulenga, 2003). With the Integrated Development Plan (IDP) for the greater Lusaka, the city will continue to expand spatially. The IDP for Lusaka urban has intentions of expanding Lusaka city's spatial extent to even include the Kenneth Kaunda (formerly the Lusaka) International Airport (KKIA) that is currently and administratively located in Chongwe district (JICA, 2009).

The original plan by Professor Adshead for the city of Lusaka was that of an administrative centre only (Mulenga, 2003; Williams, 1986). Planned for only 500 000 people, the original plan of the city did not anticipate and project a large human population (especially Africans). The plan did not equally provide for any other socio-economic and industrial activities other than government administrative, menial and domestic activities and services only (Williams, 1986). As Lusaka developed and industrial activities kicked in, the original plan had to be modified by J. T. Bowling to include both heavy and light industrial areas (Mulenga, 2003).

After 1964 when Zambia gained its independence from its colonial masters, Lusaka became popular and went on to record a steady increase in its population, industrial and economic

activities (Monde, 2023). Monde (2023) attributes these developments to mainly; the allowing of the natives to settle in urban areas (although it was mostly in slums/unplanned settlements), the coming of tourists and foreign nationals from all over the world. Central Statistical Office (2012); Central Statistical Office (1970) attribute the growth of the city to prospects of better employment opportunities and living conditions. The opportunities and better living conditions drew the attention of both indigenous Zambians and foreign nationals of different nationalities to Zambia, particularly Lusaka (Mulenga, 2003).

From the time that the natives were allowed to settle in urban areas around the country, Lusaka has not looked back as it has continued to grow and expand spatially, urban and population-wise. Lusaka has grown from the narrow Lusaaka village alongside the line of rail in the early 1900s to being the capital and largest city in Zambia and, one of the rapidly urbanising cities in SSA (Mulenga, 2003; Simwanda & Murayama, 2018).

3.5.2 Physical Characteristics of the Study Area

Lusaka is located in central Zambia on the Central African Plateau. It lies at an altitude of 1280 meters above sea level and covers 375 km² of mostly flat relief, between longitudes 28^0-16^0 East and latitude 15°–25° West (UN-Habitat, 2012; Monde, 2023; UN-Habitat, 2022). According to the African Development Bank (2015), Monde, (2023), Lusaka has a total mean annual rainfall of about 1000 millimetres experienced mainly between October and April. Lusaka has grown from an approximate spatial extent of 350 Km^2 (Central Statistics Office, 2012) in 2012 to 375 Km^2 by 2022. Lusaka urban comprises a pre-Cambrian basement complex comprising granites, gneisses and quartzites overlaid by dolomites and limestone (JICA, 2009; Mubanga, 2019). The pre-Cambrian basement on its own is evidence enough that environmental consciousness is required when administering land for various uses in Lusaka urban district (Mubanga, 2019).

3.5.3 Demographic Characteristics of Lusaka Urban

Lusaka urban district accounts for 32% of the country's total urban population and dominates the country's urban system (Central Statistics Office, 2018; Simwanda & Murayama, 2018). It is worth noting that Lusaka's census data dates to 1921 where only the European population was covered. The implication is that the 1921 census data is unreliable as it was not comprehensive since it excluded all the natives that were living in Lusaka then. The census data that would be comprehensive and reliable would be that of the 1931 data as it was the first census to include all the racial groups whose total population was 2,433 (Mulenga, 2003).

Mulenga further asserts that all subsequent census data prior to 1963 should still be used with caution or better still, treated as mere estimates. The reason advanced for this argument is that while the censuses conducted during these years comprehensively covered the European populations, they at the same time largely excluded proportions of the African population (Mulenga, 2003).

Even though the Population of Lusaka had grown to 18,909 by 1946, the African population grew rapidly after the 1948 African Housing Ordinance was passed (Wood et al, 1986). The growth of the African Population in Lusaka was attributed to this ordinance that gave Africans the right to the town together with their families. Prior to the 1948 African Housing Ordinance, Africans were not allowed to live in urban areas across the country. Africans were instead treated as temporal residents who were granted employment contracts on a short-term basis after which, they would return to their families in the rural areas and the circus continued (Mulenga, 2003).

The 1948 African Housing Ordinance kickstarted the growth of the African population in Lusaka town which the attainment of independence in 1964 later propelled, a scenario that is still obtaining even up to date (Central Statistics Office, 2018). According to Williams (1986), Lusaka's urban population was from the 1960s predominantly African (80%) with the European settlers making up the remaining 20%. Over the years, Lusaka city has witnessed a steep rise in its urban population that has led to various LUC (Simwanda, 2018; Simwanda & Murayama, 2018; UN-Habitat, 2016). Planned in pre-independent Zambia with an estimated population of 27,000 (Central Statistical Office, 1970), Lusaka had approximately 2.4 million people in 2013, 3.24 million people in 2019 and 4.6 million people in 2020 indicating a 3.97% average annual growth rate (UN, 2022).

Lusaka has consequently emerged as a highly arbitrary city, with approximately 40% representing spontaneous residential land use dominated by 30% informal settlements (Simwanda & Murayama, 2018). As of 2015, Lusaka had about 70% of its urban residents living in peri-urban areas (African Development Bank, 2015). More often than not, these initially unplanned residential areas are characterized by overcrowding, lack of basic social amenities, inadequate housing, water, and sanitation among others. Currently, Lusaka's diverse urban population is made up of mostly indigenous Zambians from all of the country's 72 ethnic groups. In the last two-three decades however, there has been a proliferation of foreign nationals into the capital city of people from all over the world notably those of Asian origin and some indigenous Africans.

3.5.4 Socio-economic Characteristics of the Study Area

Lusaka is the country's glittering capital which still persuades rural Zambians and people from other towns to migrate to the city. People move to the city in search of greener pastures such as employment, tertiary education and, business opportunities (UN-Habitat, 2012). This is due to the availability of various socio-economic opportunities that range from more and better jobs, business opportunities, and the promise of greener pastures and better livelihoods than what obtains in rural areas and smaller towns of Zambia. Lusaka further has strategic importance owed to its capital city status and central location (UN-Habitat, 2016). To this effect, there has been no influx control of mostly, the inbound movements into Lusaka and the ever-growing urban population of any kind. The city lies at the junction of the main highways to the northern, eastern, southern, and western parts of the country, with air links to most of the major tourist destinations in Zambia from the Kenneth Kaunda International Airport (formerly known as the Lusaka International Airport). Lusaka city shares district boundaries with Chongwe in the east, Mumbwa in the west, Chisamba in the north and Chilanga district in the south.

Being the capital city, Lusaka has brought together people of many nationalities, making it a bustling centre for administrative, economic, political and socio-cultural activities. The Central Business District (CBD) is one of the country's notable and bustling hubs of economic and social-cultural activities. It is home to various cultural and socioeconomic activities including but not limited to banking halls, office and business premises, hospitality centres, post, and telecommunication halls. The CBD equally hosts many trading posts and activities where the selling and buying of goods and or services takes place, including street vending. Unfortunately, there is mismatch between the city's urban population growth and its busting socioeconomic status plus activities as the majority of the urban population is poor and lives below the poverty datum line (Monde, 2023). The ADB (2015) posits that more than half of Lusaka's urban population live in peri-urban areas due to poverty and the increasing urban population.

Lusaka city also constitutes the centre of national legislative, judicial and social amenities such as the National Administration or cabinet office, all government ministries, the Supreme and Constitutional courts, the largest referral hospital and the highest institution of learning among others. It is also the seat of all diplomatic missions accredited to Zambia hence it's being an economic and social hub. Consequently, Lusaka city, just like many other cities in developing

countries, is undergoing typical urban problems related to urban growth and development. These problems include among others rapid population growth, unplanned settlements, high urbanisation rates and unemployment levels, urban sprawl, lack of adequate basic social amenities and services, rampant land use changes (some illegal), land power relations, street vending, violence and theft, traffic congestion, overcrowding in peri-urban areas, inadequate waste management and the ever-increasing cost of living.

3.5.5 Justification for the Selected Research Sites within Lusaka Urban Area

Administratively, Lusaka is divided into seven constituencies, sub-divided into 33 wards. In turn, the 33 wards are further divided into settlements where, about 43 of them are classified as informal (Mulolwa, 2016). Most settlements in Lusaka were initially smallholdings meant for agricultural purposes with scattered settlements. Over time however, these settlements have experienced massive shifts in land use mostly to urban use due to urbanisation processes and the growing urban population numbers (Simwanda & Murayama, 2018). These settlements are no longer used only for agricultural purposes but, mixed use including built-up mostly for residential (ranging from low to high density) and commercial uses (Hampwaye, Membele, & Namakando, 2020)

The study used the concept of plotted urbanism (Schmid et al., 2018; Storper & Scott, 2016). Plotted urbanism refers to the development of a city or urban growth by individuals, private and public sectors mainly, through plot giving without initial regulation and housing development over time. Specific study sites were Obama (an informal settlement born out of plot giving), Ng'ombe, Garden Chilulu, Mtendere East, Kalingalinga (matured informal settlements), Meanwood Ibex Hill (formal settlement, out of plot giving of formally agricultural smallholdings) and Roma Park (a gated community out of plot giving). These areas were selected based on the preliminary Lusaka urban land use change data that was obtained using GIS and remotely sensed imagery.

The preliminary findings indicated that the areas under study had experienced more urban LUC compared to others. It is these massive LUCs that have come mainly because of urbanisation processes that have affected urban residents especially the poor and vulnerable that this study was addressing. Needless to say, there are other areas in Lusaka urban that have equally experienced massive land use changes but could not be included in the study due to financial and time constraints that come with a bigger study area (Etikan & Babatope, 2019). This study recommends the extension of similar studies to these areas.

The focus on Lusaka urban district further stems from observations of population increase (Central Statistics Office, 2018), changes in land policies, increasing inequities between the diminishing rural and increasing urban populations and, the rise in the conversion of cultivated, forested, water recharge land to mixed urban land use (Simwanda & Murayama, 2018). Understanding Lusaka urban is very important as it is the country's fusion point; decisions (socio-economic, political, economic, legislative etc) that are made in Lusaka for instance, have implications on all other parts of the country. Furthermore, the availability and accessibility of study participants such as government departments, organisations and, NGOS also influenced the choice of Lusaka urban district as the study area.

3.6 Study Population and Sampling Procedure

Study population refers to all elements that meet a certain criterion for inclusion in a study (Burns & Grove, 2003). Creswell (2012) refers to a study population as a group of individuals or organisations who share some identified and common defining characteristics of interest to the researcher for studying. Study population refers to a group of individuals, items, objects or a group of individuals or a larger group with at least one common or similar characteristic from which the study sample is drawn (Kombo and Tromp, 2006). In this study, the study population refers to all individuals in Lusaka urban district with common characteristics from which the actual study sample was drawn. The study sample was drawn from the total number of households from the selected seven residential areas and not the entire population for Lusaka urban district. The common characteristic in this context is the fact that all the study sample participants had lived and or worked in Lusaka urban for not less than five years and had observed and or experienced the urbanisation processes and the LUC taking place.

The target population included all Lusaka urban residents, government institutions and organisations that are either managers, custodians or oversee land use changes, selected NGOs, and other relevant stakeholders. Lusaka residents were targeted to provide information on land-use changes and effects on urban residents The selected urban residents (from peri-urban areas) also provided insights into their rights to the city having been subjected to all the urbanisation processes and the subsequent LUCs that have been taking place in Lusaka urban. Their responses helped this study to determine and establish the implications of urban LUC on urban residents and their rights to the city thus responding to objectives a) and b). Officials from the mentioned institutions and organisations that were targeted provided information on the

political economy of Lusaka's land use changes and management, urbanisation processes, and sustainable livelihoods thereby responding to objective c).

3.6.1 Sample Size

Study sample is the number of individual representative elements of a total population drawn by a researcher from which they generate data (Creswell & Clark, 2017). Sample size varies dramatically from one study to another. Qualitative studies tend to favour smaller sample sizes and larger sample sizes for quantitative (Creswell, 2012; Creswell & Clark, 2017). A researcher only needs to justify their study sample as being sufficient to meet their research purpose (Saunders et al., 2012).

The sample size was 929 households that were drawn from the selected residential areas of Obama, Kalingalinga, Mtendere East, Roma Park, Meanwood Ibex Hill, Ng'ombe and Garden Chilulu. A total of 922 participants were interviewed with the help of research assistants. The twelve officials who were key informants comprised of an official from; the Lusaka City Council, the Lusaka Provincial Planning Authority (LPPA), Zambia Environmental Management Agency, the Ministry of Lands and Natural Resources, NGOs and civil society (Habitat for Humanity, Zambia Land Alliance, Civic Forum on Housing and Habitats, People's Process on Housing and Poverty in Zambia) and two officials from the Ministry of Local Government and Rural development. The table below shows the sample size for the key respondents or officials from the various establishments.

Table 2: Sample Size & Distribution for Key Respondents

Key Informant's Institution	No of participants	Sampling Technique
LPPA	1	Expert Purposive Sampling Technique
Ministry of Local Government and Rural Development	2	
Lusaka City Council	1	
Ministry of Lands and Natural Resources Management	1	
ZEMA	1	
MEDEEM	1	
Habitat for Humanity Zambia	1	
Zambia Land Alliance	1	
PPHPZ	1	
Tetrateck	1	
Civic Forum	1	
Total	**12**	

Source: Field Data, 2023

The table below shows the number of households and the total population per residential area according to the 2010 census of population and housing. Although there was a census of population and housing that was conducted in September and October of 2022 in Zambia, the data were still not ready for public use and consumption at the time that this study was conducted. This was from January-May 2023 so the figures that were adopted were from the 2010 census statistics.

Table 3: Household and Total Population Figures Per Residential Area

S/N	Residential Area	Total no. of Households	Total Population
1.	Meanwood Ibex Hill	1, 820	8, 356
2.	Ngombe	10, 354	46, 197
3.	Obama	2, 824	11, 006
4.	Roma Park	1, 768	8, 311
5.	Mtendere East	16, 800	78, 998
6.	Garden Chilulu	1435	10, 042
7.	Kalinga Linga	12, 838	38, 513
	Total	**47, 839**	**201, 423**

Source: CSO, 2012

The sample size was calculated using an online sample calculator.[1] The online sample size calculator calculates the minimum sample size that is required for one to conduct a study. The minimum number of respondents was computed for every residential area using the number of households since only the household heads were administered questionnaires to. Refer to table 4 which shows the sample sizes for each residential area. Table 5 on the other hand, shows the actual distribution of the households that participated in the study. The samples were further computed at 10% of the population since the number of households in each area was known. The confidence level used was 95% with a margin of error of 5%. However, 922 responses were collected from the field which is short of 4 responses. The missing four were partially filled in and were thus dropped from the analysis as they were treated as non-responses.

Table 4: Residential Areas Households Sample Size

[1] https://www.calculator.net/sample-size-calculator.html

S/N	Residential Area	No. of Households	Sample Population
1.	Meanwood Ibex Hill	1, 820	129
2.	Ngombe	10, 354	137
3.	Obama	2, 824	132
4.	Roma Park	1, 768	129
5.	Mtendere East	16, 800	138
6.	Garden Chilulu	1435	127
7.	Kalinga Linga	12, 838	137
	Total	**47, 839**	**929**

Source: Online Sample Size Calculator (see footnote 1).

3.6.2 Sampling Techniques

There are two types of techniques, probability random and non-probability sampling. For probability random sampling, every member of the population has an equal and independent chance of being selected as a study participant (Creswell, 2012; Saunders et al., 2012). Random sampling methods include simple random, systematic, cluster sample and stratified random. Under non-probability sampling, the chance of each member being selected is not known. This consequently makes it impossible to answer research questions or address objectives that require making statistical inferences about the population's characteristics (Saunders et al., 2012, p. 262). Methods under non-probability sampling include, snowball, convenience, purposive and quota sampling.

This study used purposive sampling also known as subjective or judgemental sampling technique to select respondents for this study. According to Barreiro and Albandoz (2001, p. 5). "purposive sampling is one in which the person who is selecting the sample tries to make the sample representative, depending on his opinion or purpose." Etikan and Babatope (2019) define purposive sampling as a sampling technique where the researcher selects respondents for their study based on the understanding and knowledge that the selected respondents (which is a sample of the population), meet the objectives of the study. Patton and Cochran (2002) define purposive sampling as a non-random sampling technique where the researcher only selects the information-rich cases for their study.

Using purposive sampling, Creswell (2012) argues that a researcher intentionally chooses respondents or sites to study who they feel meet the objectives of the study. Grix (2004) equally notes that purposive happens when a researcher selects their respondents, study sample or research participants from which they can learn more. Using this method, prospective participants, or respondents without knowledge of the subject matter are not selected. According to Etikan and Babatope (2019), only experts and knowledgeable people are picked as participants in the study. The researcher does this to learn and further, understand the phenomenon under study.

The study used expert purposive sampling technique in the selection of the participants from the various organisations/institutions, government departments and the NGO/Civil Society sectors. This technique ensured that only institutions, government departments and civil society/NGO sectors that were relevant to the study were sampled and consequently interviewed. Expert Participants that were selected for interviews were those officials who had worked in that ministry/organisation or institution for more than five years and had been directly involved in urban/land use planning, land governance, land use policy formulation, implementation, and monitoring. This ultimately benefited the study as a time and financial resources serving measure since interviews were only conducted with officials who possessed the requisite knowledge for this study.

To get the most suitable and best respondents and to also achieve the purpose of this study using the best possible methods, purposive sampling was employed for the household heads too. As a result, households that were interviewed were also selected using purposive sampling. The major reason for selecting household respondents using purposive sampling was for the study to come up with respondents who possessed certain homogenous characteristic/s (Mwanza, 2016). For this study, these household heads needed to have lived in the residential areas for a period spanning five years or more. This characteristic ensured that the respondents were relevant and suitable for the study considering the research question, aim, and objectives. Furthermore, household heads were interviewed using pre-tested questionnaires. Purposive sampling is advantageous in that it makes it easy to narrow down to the subject of interest hence it is cost and time effective (Etikan & Babatope, 2019). According to McMillan and Schumacher (2001), the only disadvantage is that it predisposes the researcher to being subjective and biased in their judgement and ultimately, sample selection. This means that the technique might not always be reliable.

Table 5: Distribution of Household Respondents by Residential Area.

S/N	Residential Area	No. of participants	Percent
1.	Meanwood Ibex Hill	68	7.4
2.	Roma Park	67	7.3
3.	Kalingalinga	191	20.7
4.	Mtendere East	131	14.2
5.	Ngombe	165	17.9
6.	Obama	150	16.3
7.	Garden Chilulu	150	16.3
Total		**922**	**100**

Source: Field Data, 2023.

In certain areas, more households were interviewed compared to the sample size as was calculated. The main reasons accounting for those disparities were:

a) In the affluent areas i.e. Meanwood Ibex Hill and Roma Park, respondents were not very willing to participate in the study. Some of the respondents were either, uninterested, or claimed to be busy, others gave appointments for later but were never available on subsequent follow-up dates. In most households, only domestic workers were available and, they did not qualify to take part in the study whether they had worked at the house for over five years or not. Others who were present declined to take up interviews with research assistants as they perceived and considered the interview activity as an academic exercise and that no tangible results would come up from the same.

b) For the middle and high-density neighborhoods, research assistants stopped gathering data when they reached a saturation point where, the responses they kept getting presented no new information or insights into the problem or research question under investigation hence the numbers presented above.

3.7 Data Collection Instrumentation

Data collection refers to the instrumentation that is used to collect data as well as the way data is collected for a study. According to Burns and Grove (2003, p. 373), data collection is defined as “the precise, systematic gathering of information relevant to the research sub-problems using

methods such as interviews, participant observation, focus group discussion, narratives and case studies." The study collected both primary and secondary data. This was done through interviews (using a semi-structured interview guide and a tape recorder), document (both published and unpublished) analysis and literature review, unstructured observations (using a notebook and a camera) and questionnaires (Appendices 7 and 8).

Sources of primary data consisted of all households that were interviewed using questionnaires and all key respondents from the different establishments that were interviewed for this study. Secondary data were collected using document analysis, literature review, GIS and RS imagery. The study used a combination of data collection techniques to collect the required data (Bryman & Bell, 2007; Collins et al., 2007; Creswell & Clark, 2017). To adequately assess the impacts of urbanisation on land use change in Lusaka urban district, the study had four set objectives that guided the methodology and related activities. The first objective was achieved using of remote sensing and Geographical Information Systems (GIS). Questionnaires, semi-structured interview guide schedules, and unstructured observations were used to gather data for objectives b) and c). Document (both published and unpublished) analysis was conducted to produce secondary data for the study as indicated above.

3.7.1 Remote Sensing and GIS

Remote sensing and GIS were used in this study to explain land use change (LUC) and urbanisation in Lusaka urban district. According to Jensen (1996), remote sensing imagery is important as the derived information is critical to the successful modelling and monitoring of numerous natural and cultural processes. Lu, Mausel, Batistella, and Moran (2005) equally assert that remote sensing images are primary sources of data that have been and are extensively used for change detection in recent decades. The output of a remote sensing system is usually an image representing the scene being observed (Weng, 2010). On the other hand, GIS consists of a special type of computer program capable of storing, editing, processing, and presenting geographic data and information as maps (Campbell & Shin, 2012). It is an integrated software package specifically designed for use with geographic data that performs a comprehensive range of data handling tasks. According to Weng (2010), these tasks include data input, storage, retrieval, and output in addition to a wide variety of descriptive and analytical processes. The table below shows the characteristics of satellite data.

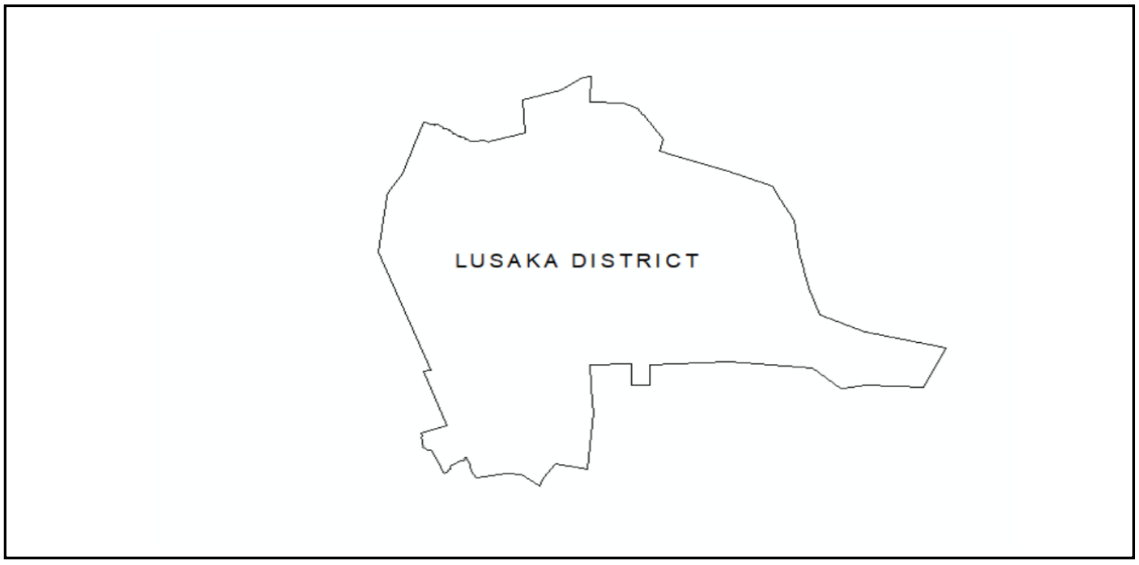
Table 6: Satellite Data Characteristics

Image Date	Sensor	Path/Row	Orbit height
21/06/1990	Landsat 4 Thematic Mapper (TM)	172/071	704 Km
04/09/2000	Landsat 5 Thematic Mapper (TM)	172/071	704 Km
10/10/2010	Landsat 7 Enhanced Thematic Mapper Plus (ETM+)	172/071	704 Km
29/10/2020	Landsat 8 (Operational Land Imager)	172/071	704 Km

Source: https//www.usgs.gov[2]

The figure below shows the boundary shape file for Lusaka district that was used to clip the area of interest (AOI) for this study. The AOI is the Lusaka urban district.

Figure 2: Lusaka District Boundary Shape File.



Source: (www.nsdi.zambia.co.zm)[3]

Landsat satellite images from Landsat 5 (Thematic Mapper) for 1990 and 2000, Landsat 7 (Enhanced Thematic Mapper) 2010 images and Landsat 8 (Operational Land Imager and Thermal Infrared Sensor) for 2020 were downloaded from Earth Explorer.[4] The Path and Row for these images was 172 and 071 respectively. The images were enhanced and georeferenced to the local coordinate system UTM Zone 35S, Datum WGS 84. A satellite program under the National Aeronautics and Space Agency (NASA) of the United States of America government

[2] *USGS.gov|Science for a changing world*. (n.d.). https://www.usgs.gov/
[3] (*National Spatial Data Infrastructure (Nsdi) - Google Search*, n.d.)
[4] (*USGS.gov|Science for a changing world*. (n.d.). https://www.usgs.gov/).

Landsat images were suitable for this study because this program has a long archive of satellite data stretching from as far back as 1972 that is available for free download since 2006. Landsat also has global coverage hence covers the entire globe. These satellite images have medium spatial resolution images and as such, are very useful land use and land cover change detection analysis.

Software: For remote sensing and GIS requirements, the study used ArcGIS 10.7.1, a commercially available GIS software. ArcGIS is a software developed by the Environmental Systems Research Institute (ESRI) with capabilities to view, edit, create, and analyse geospatial data (Hamdi & Al-Hassany, 2023). Users can use this software to create maps using various symbols with its processing and analytical tools.

Image Processing and Analysis: Image processing can be understood as a technique to transform an image into digital form and implement certain actions on it, to create an improved image or to abstract valuable information from it (Rani, 2017). For image processing and spatial analysis of remotely sensed satellite imagery, the ArcGIS 10.7.1 software was used because it has an extensive range of tools that help in the detailed study or mapping.[5] This involved identification and measurement of targets (land use classes) in the image in order to extract useful information about land use and land cover change in Lusaka urban district. For image pre-processing, radiometric corrections were used in order to improve both the quality and accuracy of the RS images. This achieved by reducing and removing the effects of sensor, atmospheric and illumination factors.

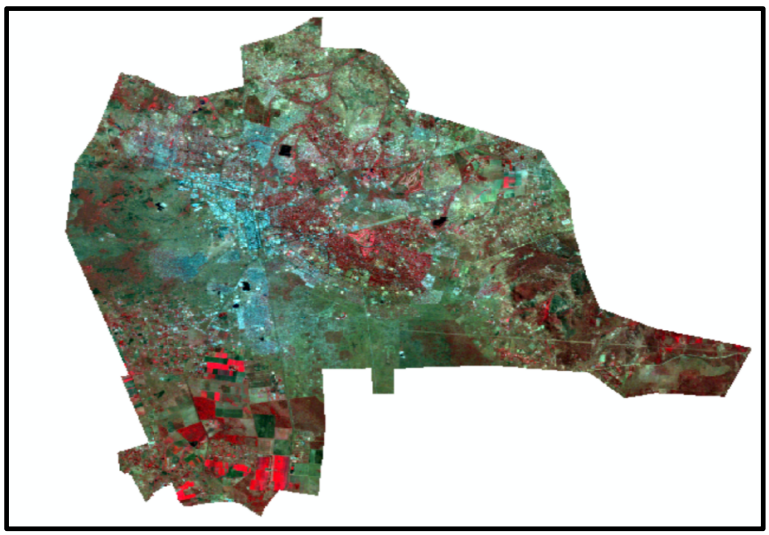
Creating Colour Composites: A colour composite is a combination of different bands of varying wavelengths. Band combinations are created based on the Optimum Index Factor (OIF) (Rani, 2017). The OIF is a criterion developed to assist which ratio combinations to include in colour combinations. It ranks all the possible three-ratio combinations based on the total variance present in each ratio and degree of correlation between ratios (Lillesand, Kiefer, & Chipman, 2015). The ratios help enhance satellite images using different band combinations to improve the appearance of different land use and land cover types. This is important as it aids in identifying land use and land cover in an image of interest. There are many different band combinations available that are used conveniently depending on the objective/s of a given study. For this particular study, the band combination 432 (false-colour composite) was used. Using the band combination 432, the green (G), red (R) and infrared (IR) bands are combined

[5] (https://planningtank.com/geographic-information-system/differences-qgis-arcgis).

by projecting the infrared through the red filter, the red band through a green filter and, the green band through a blue filter (Campbell & Wynne, 2011). The false-colour composite is useful for delineating urban areas which appear as cyan-blue on composite images (Lillesand et al., 2015).

Raster Clip: Raster is a data format that shows location of objects as a matrix of square cells or grid cells in which the cell value indicates the type of object or condition on that location over the entire cell (Lillesand et al., 2015). It is mostly used to represent continuous data. Clipping is the process of cutting out or extracting an area of interest (AOI) from an image. The clip was the boundary for Lusaka urban district which was the area of interest for this study. It was downloaded from the Zambia National Spatial Data infrastructure, and it was created using the selection function from the shape files showing districts of Zambia.

Figure 3: Clipped Landsat 5 Raster False Colour (432) Composite Image for Lusaka District for 1990.



Creating Training Samples: Training samples for the land cover classes were created from the colour infrared imagery using the Image Classification Toolbar with the polygon tool in ArcGIS 10.7.1. Training samples are representative sample sites of known cover types (Lillesand et al., 2015). These training samples were well distributed across the image to ensure a good representation of all classes in the scene.

Creating Signature Files: Training samples were created based on land use and land cover classes and then, signature files were generated. Signature files are generated and used to map the landscape as they permit the mapping of features that are too complex to resolve individually (Campbell & Wynne, 2011). Training samples were then used to come up with

land cover classes for the whole image based on spectral signatures from the areas of interest (AOI).

Land Use and Land Cover Classes and Classification Method: The Land Use and Land Cover (LULC) classes that were considered for this study were built-up, forest, vegetated, cropland/fallow and waterbody. These land cover classes were further reclassified into urban and non-urban land. Classification is the process of assigning objects, features, or areas to classes based on their appearance on the imagery (Campbell & Wynne, 2011). The classification method that was used was a combination of unsupervised and supervised image classification. In supervised classification, the image analyst supervises the pixel categorisation process by specifying to the computer algorithm numerical descriptions of various land cover types present in the scene (Lillesand et al., 2015). According to Weng (2010), unsupervised classification is a classification method in which spectral classes are grouped solely on digital numbers in the imagery which are then matched by the analyst to information classes. The use of the unsupervised classification is meant to aid with the classification of land that may not be visually identifiable to the analyst. As such, unsupervised classification being an automated process, assists in ensuring the accuracy of the classification.

Land Cover Maps: The land cover maps produced showed built-up, forest, vegetated, cropland/fallow, and waterbody for 1990, 2000, 2010 and 2020. These land cover classes were then divided further into two classes: urban and non-urban. This division enabled the calculation of how much the urban area had expanded over the thirty years under consideration. The proportion of urban and non-urban areas were then calculated for the same period.

Change detection and Accuracy Assessment: Change detection was carried out using post-classification comparison to show areas of change based on changes in reflectance and/or pixel values on images from the five different dates. Change detection is the process of identifying differences in the state of an object or phenomenon by observing it at different times (Rani, 2017). It uses multitemporal data sets to discriminate areas of land cover change between dates of imaging (Lillesand et al., 2015). According to Lillesand et al. (2015, p. 22) “change detection is premised on the ability to measure temporal effects.” Change detection enabled the calculation of area change from non-urban to urban. Accuracy assessment of classification images was conducted using an error matrix from which a kappa statistic was derived. High-resolution google earth imagery of the study area was used as reference data.

3.7.2 Questionnaires

A questionnaire is a general term that includes all methods of data collection where research participants are asked and, respond to the same set of questions arranged in a predetermined order (Saunders et al., 2012). A questionnaire is a research instrument that gathers data from a large sample (Kombo & Tromp, 2006). Smith et al. (2008) argue that it is a useful and widely used instrument for collecting survey information, providing structured, often numerical data and is comparatively straightforward to analyze. According to Taylor, Sinha, and Ghoshal (2006), a questionnaire is a powerful method of primary data collection when information about people's attitudes and opinions on a certain subject is sought.

Questionnaires can either be respondent or researcher administered. This study used researcher-administered questionnaires that were converted to google forms. Questionnaires were used in the collection of data from households which was on a large scale as the households were many. They were more convenient as they allowed for the collection of data on a large scale and in this case, 900+ households in Lusaka urban district (Teddlie & Tashakkori, 2011). Questionnaires are an important instrument used in the collection of data as they consist of closed and open-ended questions that aid in the collection of the needed data (Thomas, 2010). Taylor et al. (2006) further assert that a questionnaire is equally a sensible way forward when factual information is needed from a substantial number of people especially that it can be administered without the presence of the researcher.

According to Thomas (2010), questionnaires tend to be advantageous in that they can be administered to multiple participants at the same time compared to other data collection techniques such as interviews. Unfortunately, as noted by Mwanza (2016) questionnaires can't be customised to suit individual participants at a given time provided the study is using them to collect data. For this study, researcher-administered questionnaires were used to collect information on urbanisation, urban livelihoods and land use changes from 1990 to 2020, knowledge, attitudes, and experiences with the evolving Lusaka urban land space.

3.7.3 Observations

Observation is the planned and systematic watching, recording, analysis, and interpretation of behaviour, actions, or events (Sekaran & Bougie, 2016, p. 127). Observation can either be participant, where the researcher participates in the activities of the observed, or non-participant where the researcher is detached from the observed phenomenon but just watches (Robson, 2011). This research used a non-participant type of observation where the researcher

observed various shifts in LU over the two past decade in Lusaka urban stretching as far back as 2004, a period spanning twenty years. Observations were used to develop a framework of theory (Robson, 2011) that will help to rightfully explain the impacts of urbanisation on urban LUC, urban livelihoods vis-à-vis the urban residents (especially the poor and vulnerable) and their rights to the city amidst the changes that have been taking place from 1990 – 2020. As Yogi Berra, a highly honoured American philosopher rightly put it, "*You can observe a lot just by watching*." (Thomas, 2010, p. 317).

3.7.4 Key informants Interviews

In research, an interview is another way of collecting primary data generated between people through conversations. It is the conversation that takes place between seeking information on the part of one and supplying information on the part of the other (Cohen, Manion, Morrison, & Morrison, 2007). It is an interchange of views between two or more people on a topic of mutual interest that sees the centrality of human interaction for knowledge production and emphasizes on the social situatedness of research data (Kvale, 1996, p. 14). An interview is "a purposeful conversation between two or more people, where the interviewer establishes rapport, asks concise and unambiguous questions, which the interviewee responds to" (Saunders et al., 2012, p. 372). It involves the gathering of data through direct verbal interaction between individuals initiated by the interviewer for the specific purpose of obtaining research-relevant information on content specified by research objectives (Cohen et al., 2007; Kvale, 1996; Taylor et al., 2006). According to Burns and Grove (2010, p. 58) "interviewing refers to structured or unstructured verbal communication between the researcher and the participants in which information is presented to the researcher by the participants."

Interviews can either be structured, semi-structured or unstructured. They can be conducted with individuals or groups depending on the nature of the study, resources available and the objectives of the study (Saunders et al., 2012). As the term suggests, *unstructured* interviews are an informal kind of conversation between the researcher and the respondent. These interviews are conducted with no pre-determined questions but just open-ended ones hence the need for both parties to be relaxed and at ease. Mostly, the direction of the interview is two-sided and is dictated by both the interviewer and the interviewee (Thomas, 2010). This makes it possible for the interviewer to generate rich data and information since the questioning levels are tailor-made. Creswell and Creswell (2017) argue that it becomes difficult to standardise the

data from unstructured interviews since each interview takes a unique format. Creswell (2012) contends that data analysis from unstructured interviews can be hectic and time consuming.

For the *structured interviews*, there is a pre-determined set of questions that guides the course of the interview. Saunders et al. (2012) argue that the set questions are mostly closed questions whose responses are precise, predetermined, and normally presented as either options to tick or read out to the interviewee for them to select. The good part with structured interviews is that responses are standardised since questions are the same throughout (Mwanza, 2016). As argued by Thomas (2010), structured interviews are easy to conduct as specific and key questions can be identified. However, structured interviews must be conducted only when the researcher clearly understands the goal of the study. Without this, the interview will not achieve the intended and set objectives hence the need for the researcher to totally understand their study.

Semi-structured interviews are somewhat a combination of unstructured and structured interview. They contain both open-ended and closed questions. In the spirit of consistency, the researcher normally uses a set of pre-determined questions across all the respondents (Burns & Grove, 2003). These questions are not cast in stone, instead, they serve as a guide to the interview where the respondents are at liberty to provide further information as may be deemed necessary by the researcher. As stated by Mwanza (2016, p. 145), "the interviewer can use cues or prompts to encourage the interviewee to consider the question further." Byrne (2004, p. 182) further argues that "open-ended and flexible questions are likely to get a more considered response than closed questions and therefore provide better access to interviewees' views, interpretation of events, understandings, experiences and opinions." Mwanza (2016, p. 127) adds on to say that 'conducted properly, interviews can achieve a level of depth and complexity that is not available to other data instrumentation, particularly survey-based approaches.

Regardless of the type of interview that a researcher adopts for their study, there are generally agreed steps that need to be considered before, during and after an interview. Before any interview can be conducted, adequate preparation is essential. Mwanza (2016) lists some of the considerations;

a. Preparation. In this context includes the identification of the right participants, setting the questions, securing and testing instruments (tape recorder, batteries, note-book, pen) to make sure that they are functional and ready for use.

b. At the beginning of the interview, it is important for the interviewer to make the interviewee relaxed, help them to understand your need to record the interview but, do not coerce them into being recorded if they are not comfortable. Informed consent is inevitable. Start with the easy questions before moving on to the hard ones.
c. During the interview, take charge of the interview, read the body language of your interviewee, probe where necessary and pay attention to the recorder. Most importantly, listen more than you talk.
d. Avoid emotional reactions to the interviewee's response and always remain neutral. You must be interested in the conversation throughout, use and encourage the use of gestures.
e. As you wind up the interview, remind the interviewee to reaffirm the major points/responses and ask them if there's anything they would want to add.
f. At the end of the interview, thank the respondent as they do not owe you an interview. Remember to get their contact details in case you later discover some missing data or information.

It is worth mentioning that these tips came in handy when conducting interviews with key persons from the institutions that were participating in this study (Cameron, 2011).

Interviews tend to be advantageous and productive in several ways. To begin with, they offer the researcher a chance to focus and pursue specific issues of concern to their study (Cameron, 2011; Thomas, 2010). Saunders et al. (2012) contend that the use of interviews ultimately reduces the amount of time and money spent on unnecessary information and data. The personal nature of interviews which is an advantage, allows the researcher to have specific and constructive conversations around their study. Interviews also provide a better chance of gathering detailed information where an interviewer only needs a few people to gather rich and detailed information (Thomas, 2010).

The choice and type of interview that a study adopts depends on several factors including the available time for the study, financial constraints, and research objectives (Burns & Grove, 2003). For this study, semi-structured interview guides, consisting of both closed and open-ended questions were used as they enabled the collection of complete and detailed information from the respondents (Creswell, 2012). A semi-structured interview schedule is a list of topics and associated questions that the interviewer would like to ask the participant (Bearman, 2019). To ensure consistency in the questions and data collected, the researcher had a set of pre-

planned and set core questions that guided the interviews. The semi-structured interview guide mostly covered the same areas with all interviewees with a few exceptions here and there.

Owing to the open-ended nature of the interview guide schedule, interviewees were during interviews, probed and accorded the chance to provide more information as was relevant to the study. Needless to mention, interviewees were not coerced into providing more relevant information than they were themselves willing to. Furthermore, interviews were appropriate for organisations and institution officials as they offered the best alternative for collecting data from key respondents. This consequently allowed the researcher to collect complete and detailed information (Barreiro & Albandoz, 2001; Bougie & Sekaran, 2019) on urbanisation, land use change and their impacts on urban livelihoods in Lusaka urban for the 30 years (from 1990-2020) period under study.

3.7.5 Document analysis

The starting point for my data collection was document analysis on urban and peri-urban livelihoods, urban LUC and urbanisation. Various documents including GRZ documents (maps, demographic and health surveys, census reports among others) and UN documents (country reports, population data sheets etc) were analysed as part of data collection. Document analysis is a good data collection tool as documents contain both public and private information. Besides, documents-both published and unpublished, are usually in a language that a researcher will readily understand (Creswell et al., 2004). Hancock, Ockleford, and Windridge (2001, p. 19) equally argue that "a wide range of written materials can produce qualitative information that can particularly be useful in trying to understand a given phenomenon." In the context of this study, written documents range from annual reports, policy documents, books, articles, maps, and other relevant documents both published and unpublished. Relevant documents mostly, articles, books, policy documents and maps were analysed. This was paramount as it helped the study to collect secondary data that helped with learning and understanding Lusaka's urban land use changes, urbanisation trends and urban livelihoods over the 30 years under study.

Document analysis also helped the study to gain the much-needed insights into how urbanisation and urban land use change have shaped urban livelihoods especially the urban poor and vulnerable and, affected the wider urban space and environment. This further helped to shape theory and future policy on urban land use, changing urban ecosystems and sustainable

urban livelihoods. Document analysis equally assisted in triangulating research findings from other sources including land use change GIS and remotely sensed images.

Table 7: Summary of the Study Objectives, Sources, Methods, and Data Collection Tools

S/N	Objective	Methods and Tools	Specific Data	Analytic Techniques
1.	a) Create an inventory of urbanisation induced LUC in Lusaka urban district (from 1990 - 2020) using remotely sensed imagery and GIS.	Remotely sensed imagery ArcGIS	Land use and land cover change Urbanisation trends	ArcGIS Choropleth mapping analysis
	b) Assess how the urban poor and vulnerable groups negotiate their right to the city and urban citizenship within the rapidly urbanising city.	Interviews with officials using semi-structured interview guide schedules Questionnaires	Urbanisation trends Urban livelihoods Economic activities	Thematic analysis Descriptive statistics Descriptive analysis: standard deviation, coefficient variation
	c) Establish how the urban poor and vulnerable groups meet their livelihood requirements and incomes in ways that are sustainable for socio-economic growth and development of Lusaka urban district,	Questionnaires	Urbanisation and urban livelihoods Coping strategies	Thematic analysis Descriptive statistics Descriptive analysis: standard deviation, coefficient variation
	d) Examine the implications of the findings of this study in a wider context particularly, that of Sub-Saharan African cities.	Extrapolation of data	Urban land use change Urbanisation in SSA countries Urban livelihoods	Mixed methods

Source: Researcher generated (2023).

3.8 Data Analysis

To answer and have a comprehensive understanding of the research question, this study used mixed methods as earlier on alluded. In the context of this study, data analysis involved the integration and interpretation of qualitative and quantitative data that were collected at the same time (Creswell & Clark, 2017; Creswell & Creswell, 2017). Data collection techniques included researcher-administered questionnaires to individual households across the selected residential areas for objectives b) and c). Using semi-structured interview guides, interviews

were conducted with key respondents as the first step to data analysis (Saunders et al., 2012). Document analysis and researcher observations were also carried out.

To adequately address the research question, a combination of methods (data collection techniques) was used in the collection of both primary and secondary data (Saunders et al., 2012). The combination of methods was determined by the mixed methods design and the objectives of the study (Hesse-Biber, 2010). The data sets were then organised and prepared for analysis as part of data management. According to Creswell and Clark (2017), this also involved cleaning the data, coding the open-ended questions and, transcribing the interviews that were conducted.

The starting point for any data analysis is to make sure that the data is cleaned and ready for analysis. Hesse-Biber (2010) Saunders et al. (2012) argue that it is an inevitable and crucial step of data analysis that ensures that the results of a given study are accurate and reliable. The cleaning of the study started with the inspection of data. This was done to firstly, understand how my Data were formatted and structured. In agreement with Creswell and Clark (2017), this also helped me to identify missing values in my data set and check for unusual values with errors or anomalies. Consequently, rows and columns with missing values were deleted, and missing values were imputed using the mean, mode, or median to standardise the data (Creswell & Creswell, 2017; Easterby-Smith et al., 2012; Saunders et al., 2012). In certain instances, reasons for missing values were considered. Where there were duplicates, they were identified and removed to make sure that each entry was unique. Outliers were equally identified and transformed, removed, or adjusted accordingly. Data were then converted to appropriate data types such as categorical values and, numerical values were standardised (Sekaran & Bougie, 2016). For instance, Male and M, Female and F were categorised for the sex of respondents.

Data were checked and evaluated for necessity and, redundant and irrelevant variables were removed in readiness for analysis. To ensure consistency, data were formatted, and inconsistencies were corrected. Data entry errors, misspellings, typing errors or coding mistakes were equally corrected. Data were then cross-checked against the source for accuracy and all the changes, assumptions and decisions made were kept for transparency, reproducibility, and future reference (Saunders et al., 2012). After a preliminary analysis of the data, the process was repeated to make sure that any errors that were omitted at first, were attended to. Needless to mention, attention to detail was applied to make sure that the data were clean and ready for analysis.

For objective a), GIS images were analysed using ArcGIS 10.5. The study used supervised classification of the generated LandSAT images for the 30 years period of study that run from 1990 – 2020, using ten years intervals. A classification schema of waterbody, forest, built – up, and cropland/fallow and vegetated was conducted and further, an accuracy assessment was carried out to assess the accuracy of the image classification. An error matrix was created to deal with both user and producer accuracy for the LandSAT images and the Kappa co-efficiency was used.

According to Patton and Cochran (2002), qualitative data is expressed using words and not numbers as words give the story to the research question and findings. The analysis of qualitative data were conducted through coding. Qualitative data came through questionnaires and the interviews that were conducted with key informants. These were officials from the various establishments that were participating in the study. After looking through the data in questionnaire, I took time to listen to the interview recordings. This was followed by the transcribing of the interviews data into transcripts. Transcripts were then analysed and read several times to get rid of irrelevant details that did not add any value to the transcript and data. The data from interview transcripts were then coded and, interview participants were assigned unique codes. For this study, these codes cannot in any way help to identify the participants.

In the context of this study, coding involved the identification of the study's naturally occurring and emerging themes, concepts, categories, and patterns (Saunders et al., 2012). According to Creswell and Creswell (2017), coding helped the study to look and find similarities and differences as well as relationships within the qualitative data. The identified themes were further developed where they were grouped according to related themes to derive meaning from the data and to further draw conclusions. Thematic analysis was employed to derive meaning and interpretation of qualitative data (Creswell & Clark, 2017). To illustrate the key points, the qualitative data findings were then given a narrative description using illustrations and examples.

Quantitative data were analysed using descriptive statistics that calculated basic statistics including frequencies to summarise the data (Creswell & Clark, 2017; Creswell et al., 2004; Saunders et al., 2012). The study used a combination of qualitative and quantitative data predominantly qualitative. Qualitative data was complimented by quantitative which used simple statistical analysis. Quantitative data used manual tabulation to produce tables and figures. This was done to establish the relationship between or among variables in this case, urbanisation, urban LUC, and the urban poor's rights to the city (Saunders et al., 2007).

Qualitative data were further interpreted where the statistical findings from the study and their implications were discussed in the context of the study's research question.

After the analysis of both qualitative and quantitative data using the embedded design specifically, the concurrent embedded design, data were compared (Creswell et al., 2004). As noted by Creswell et al. (2004), this was done to identify any complementary, convergent, or divergent results within the study. This equally allowed for the identification of emerging patterns or relationships within the data sets. The analysis also provided for a comprehensive interpretation of the study findings thereby drawing on insights from both data sets (Hesse-Biber, 2010). As part of data analysis, triangulation of data were done to corroborate findings from the two data sets. This called for the examination of how one approach support, compliment and challenge each other in the context of this study (Creswell et al., 2004).

The integration of qualitative and quantitative data further gave way to the discussion of the study findings in Chapter 5. Interpretation of data gave a coherent narrative and explanation of the entire study (Creswell et al., 2004; Hesse-Biber, 2010). In the interpretation chapter, the findings reveal much about the study's objectives and questions. These provided context by placing the study findings in the broader context of the topic at hand including relevant concepts, literature, theories, and real-world implications (especially in the SSA context).

3.9 Data Validity and Reliability

Validity refers to the trustworthiness, credibility, and authenticity of research findings. (Creswell, 2012, p. 159) defines validity as the development of sound evidence to demonstrate that the test interpretation (of scores about the concept or construct the test is assumed to measure) matches its proposed use. Validity in this study helped to determine the research findings' accuracy to the researcher, participants, and beneficiaries (Creswell & Clark, 2017). Reliability refers to the consistency or dependability of a measurement technique concerned with the character or stability of the score obtained from a measure or assessment over time and across settings or conditions (Creswell, 2012, p. 159). With reliability, a researcher should be able to get almost the same scores using the same instrument administered multiple times.

The reliability and validity of this study were achieved through the triangulation of data and data sources. Triangulation is a validity measure that uses multiple methods mainly qualitative and quantitative in studying the same phenomenon to increasing credibility (Hesse-Biber, 2010). According to Easterby-Smith, Thorpe and Lowe (1991), there are four types of triangulations:

a) Data triangulation where data is collected from different sources at the same or different times and is then combined and or compared to increase confidence.

b) Investigator triangulation where data is collected independently by different researchers and is then compared and or combined to increase confidence.

c) Methodological triangulation which uses both qualitative and quantitative research methods to increase confidence, and

d) Theories triangulation which basically uses two different theories to explain or rather, answer the same research problem.

This study's mixed methods approach promoted triangulation through corroboration between the different data collection methods (Rossman & Wilson, 1985). The different data sources were triangulated through examining the evidence from the different sources that was further, used to come up with a coherent explanation/answer to the research question. Validity was enhanced as there were emerging themes and or frequencies that were based on various sources of data or even perspectives from participants (Creswell & Clark, 2017). Triangulation neutralised the biases associated with data sources and methods. Verbatim was also used to validate the authenticity of the study findings.

3.10 Methodological Reflections

This study was a good undertaking that stretched me to the limits. It was a good learning curve and experience that helped me to know how far I can stretch myself. This journey was laden with challenges the first of which was Covid-19. It was a challenge as I did not even get a chance to go to school for proper orientation. Conducting this study was a real challenge as the number of households required was huge. It was a stretch both financially and physically as the data collection was done over an extended period with affluent neighbourhoods barely participating in the study. Government ministries and agents or institutional offices were equally a hurdle to access.

The entire process was draining starting from seeking permission letters for ethical clearance to getting appointment dates for interviews. Some of the CSOs and NGOs equally proved a challenge to access. Due to the nature of the methods of study, sometimes there where clashes were I got the same dates for key respondents' interviews where that was their only available time. That meant rescheduling, which was hard and meant more time spent collecting data as this was a task that had to be done by myself. With perseverance however, it was done! Overall,

a PhD is a very stressful and lonely journey as one must push oneself to the limits. Too many sacrifices, too many sleepless nights and time away from family. I learned from this experience that I can achieve so much more in life if I push myself. And yes, this was more of a journey of self-discovery than it was an academic undertaking. We keep moving.

CHAPTER FOUR

EMPIRICAL EVIDENCE

4.1 Overview

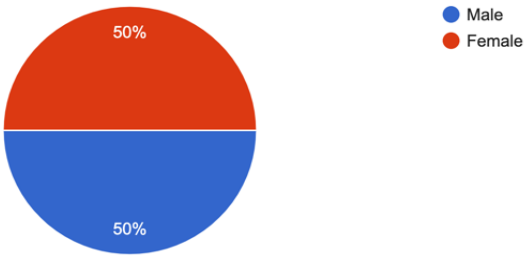
This chapter presents the findings of the study on assessing the impacts of urbanisation in Zambia, conducted in Lusaka urban District. Researcher administered questionnaires, remote sensed imagery, and interviews were used to generate these results. This compilation consists of both qualitative and quantitative findings of the study. Qualitative data is presented as narratives while quantitative data is presented in the form of graphs, charts and tables. This section begins with a description of the study participants.

4.2 Participants Demographic Information

This section presents participants' demographic information collected using researcher-administered questionnaires. Information collected includes respondents' gender, age as at their last birthday, employment status, main source of household income, name and description of residential area, accommodation type and the highest education level attained.

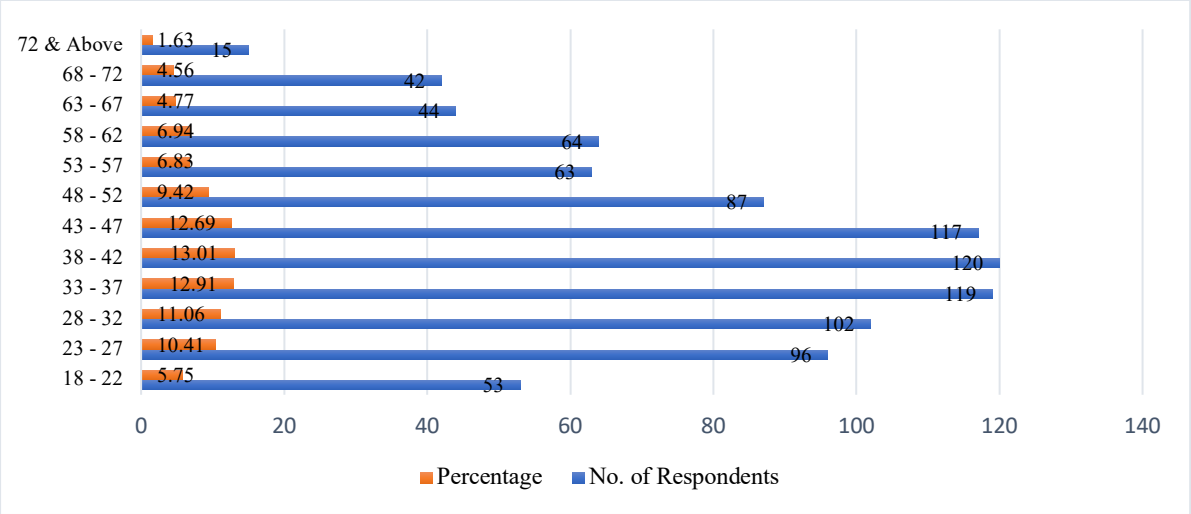
The study had equal representation where 50% (n=461) of the respondents were male and 50% (n=461) were female (Figure 4). Respondents' age as of their last birthday ranged from 18 - 82 years. The highest (13.1%, n=120) age group of the respondents was for those between 38 and 42 years while the lowest (1.63%, n=42) was for those above 73 years old (Figure 5).

Figure 4: Respondents' Gender Distribution.



Source: Field Data, 2023.

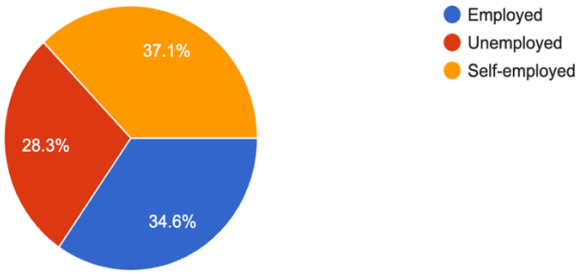
Figure 5: Respondents Age as at Last Birthday



Source: Field data, 2023.

The findings of the study show that 34.6% (n=318) were in formal employment, 28.3% (n=260) were unemployed and 37.1% (n=341) were self-employed or in informal employment (Figure 6).

Figure 6: Respondents Employment Status.



Source: Field Data, 2023.

The main sources of household income were formal and informal employment. Fifty-six percent (n=520) of the respondents' source of income was informal employment, 34.4% (n=317) from formal employment and 9.2% (n=85) from various activities and occupations that include daily wages from unskilled labour.

The population distribution indicates that Kalingalinga had the highest number of respondents making up 20.7% (n=191) while Roma Park had 7.3% (n=67) as the lowest number of respondents. Sixty-two percent (n=564) were from high density, 24.8% (n=226) from medium

density and 13.3% (n=121) from low density areas. Table 8 further shows the actual distribution of respondents per residential area.

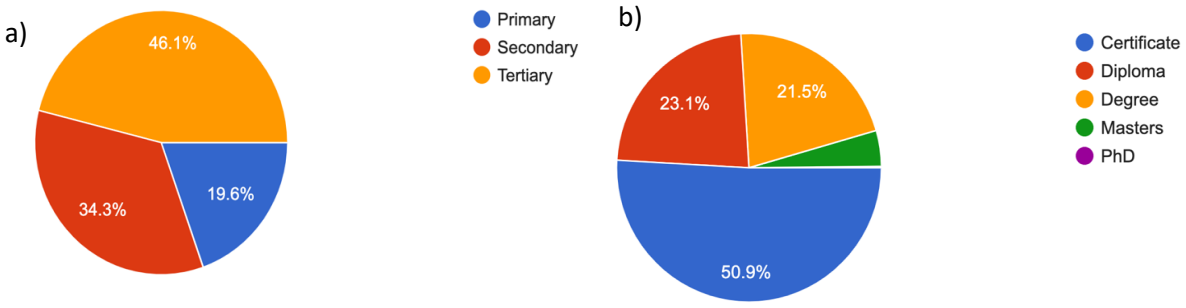
Table 8:Distribution of Respondents Per Residential Area.

S/N	Residential Area	No. of participants	Percentage
1.	Kalingalinga	191	20.7
2.	Mtendere East	131	14.2
3.	Ngombe	165	17.9
4.	Obama	150	16.3
5.	Garden	150	16.3
6.	Meanwood Ibex Hill	68	7.4
7.	Roma Park	67	7.3
Cumulative Total		**922**	**100**

Source: Field Data, 2023.

In terms of household occupancy, most of the participants, i.e., 73.1% (n=670) lived in rental homes, 24.5% (n=225) in personal homes and 2.4% (n=22) lived in family-owned homes. Almost half of the participants 46.1% (n=423) had attained tertiary level of education (Figure 7a). Fifty-one percent (n=284) of the respondents had certificate qualifications in different fields, while 4.3% (n=24) had master's degrees (Figure 7b).

Figure 7: a) and b): Highest Education Level Attained; Tertially Qualifications Attained.



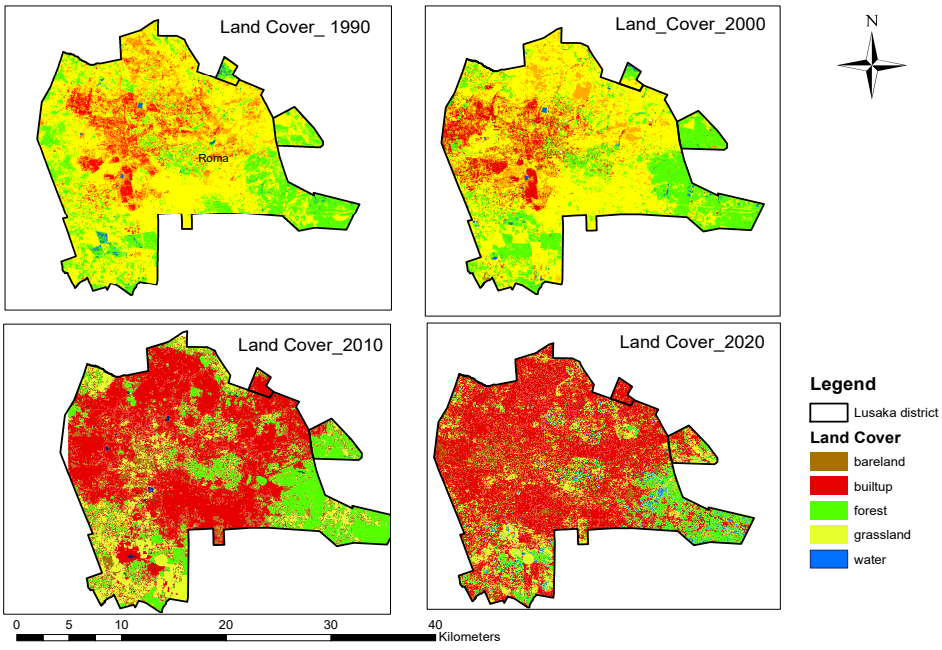
Source: Field Data, 2023.

4.3 Land Use and Land Cover Change in Lusaka from 1990 to 2020

The following sections highlight the land use and land cover changes in Lusaka district and in selected residential areas over a period of 30 years (1990-2020). The section further presents results from the interviews conducted with key informants and, questionnaires administered in the selected seven residential areas of Lusaka district. These are Meanwood Ibex Hill, Mtendere East, Kalingalinga, Obama, Ngombe, Garden Chilulu, and Roma Park residential areas.

The results of the land use land cover analysis show that there has been an exponential increase in the size of Lusaka's built-up area from 1990–2020. The area covered by water has also increased during this period. Grassland, forest and bare land have reduced during the thirty-years of study (Figure 8).

Figure 8: Lusaka District Land Use and Land Cover Changes from 1990-2020.



Lusaka has seen an exponential increase in its built-up area while the other classes have seen massive reductions during the thirty years under study. The percentage of the built-up land cover area doubled from 1990 to 2020. In 1990, the total area for built-up was 9953.488 hectares, it increased to 69.14505 hectares by 2020. All the other classes experienced a significant reduction in the total number of hectares covered apart from water which increased from 80.01 hectares in 1990 to 255.87 hectares in 2020. Grassland for instance, reduced from 2209.914 hectares in 1990 to 6.272057 hectares in 2020 (Table 9).

Table 9: Lusaka Land Use and Land Cover Change Dynamics from 1990-2020

	1990		2000			2010			2020		
Land cover	**Area (Ha.)**	**Area (%)**	**Area (Ha.)**	**Area (%)**	**1990-2000 Change (%)**	**Area (Ha.)**	**Area(%)**	**2000-2010 Change (%)**	**Area(Ha.)**	**Area(%)**	**2010-2020 Change(%)**
Forest	16274.22	37.7	10450.89	24.2	-13.50	6893	15.98273	-8.25	6020.19	13.95895	-2.02
Water body	80.01	0.2	97	0.2	0.04	200.79	0.46557	0.24	255.87	0.593283	0.13
Built-up	9953.488	23.1	13401.63	31.1	8.00	23323.76	54.08057	23.01	29820.74	69.14505	15.06
Grassland	2209.914	5.1	10511.73	24.4	19.25	6398.46	14.83605	-9.54	2705	6.272057	-8.56
Bare land	14610.16	33.9	8666.55	20.1	-13.78	6311.79	14.63508	-5.46	4326	10.03065	-4.60
Total	**43127.8**	**100**	**43127.8**	**100**		**43127.8**	**100**		**43127.8**	**100**	

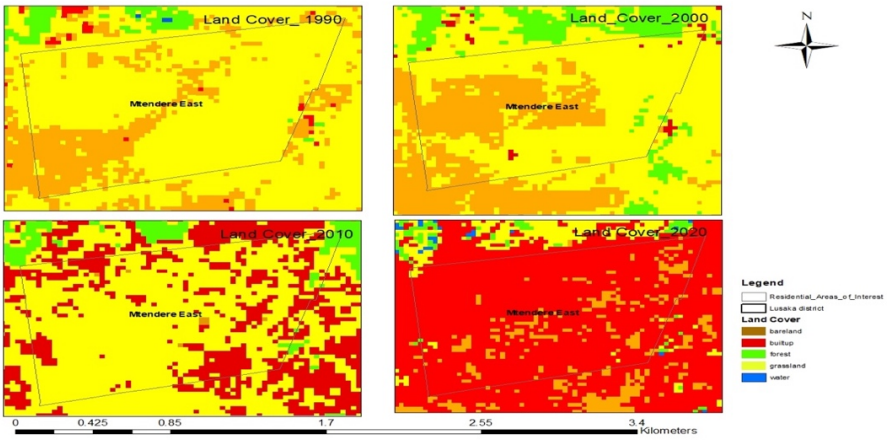
Source: Field Data, 2023.

4.3.1 Land Use Land Cover Change in the Selected Residential Areas

4.3.1.1 Mtendere East Residential Area

The results for Mtendere East land use and land cover analysis show that there has been an exponential increase in the size of the built-up area from 1990 to 2020. The results further show a drastic reduction in other types of land cover namely grassland, forest, and bare land (Figure 9).

Figure 9: Mtendere East LULC Changes from 1990-2020.



Source: Field Data, 2023.

In 1990, Mtendere East was mainly grassland, bare land with a bit of forest cover and barely built-up. In 1990, Mtendere East residential area had 139.41 hectares of grass and crop land that reduced to 1.17 hectares in 2020. The built-up area increased significantly from 0.36 in 1990 to 157.59 hectares in 2020. All the other classes drastically reduced in size as they were overtaken by the built-up area (Table 10).

Table 10: Mtendere East Land Use and Land Cover Change Dynamics from 1990-2020

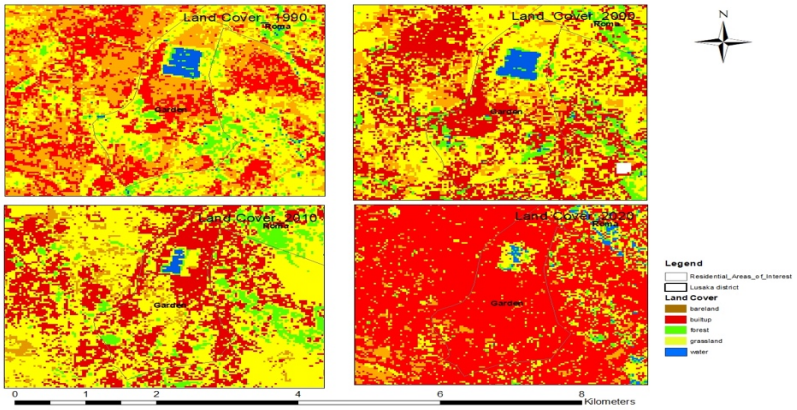
Mtendere East	**1990**		**2000**		**Change (Ha.)**	**2010**		**Change (Ha.)**	**2020**		**Change (Ha.)**
Land cover	Area (Ha.)	Area (%)	Area (Ha.)	Area (%)	1990 - 2000	Area (Ha.)	Area (%)	2000 - 2010	Area (Ha.)	Area (%)	2010 - 2020
Bare land	37.08	20.96	59.58	33.71	22.5	0.72	0.41	-58.86	18.09	10.22	17.37
Built up	0.36	0.20	0.72	0.41	0.36	39.96	22.61	39.24	157.59	89.06	117.63
Forest	0.09	0.05	1.53	0.87	1.44	1.07	0.60	-0.46	0.09	0.05	-0.98
Cropland/ Grassland	139.41	78.79	115.11	65.00	-24.3	135.19	76.4	19.89	1.17	0.67	-134.02
Total	176.94	100	176.75	100		176.94	100		176.94	100	

Source: Field Data, 2023.

4.3.1.2 Garden Chilulu Residential Area

The land use and land cover change analysis for Garden Chilulu shows that the area has experienced a tremendous increase in the size of the built-up area from 1990 – 2020. The results further indicate a drastic reduction in other types of land cover namely grassland, forest and bare land. Of particular significance is the reduction in the amount of water cover in Garden Chilulu (Figure 10).

Figure 10: Garden Chilulu LULC from 1990-2020.



Source: Field Data, 2023.

In 1990, most of the Garden Chilulu residential area was covered by bare, crop and grass land. Grass and cropland alone occupied 139.41 hectares of the residential area, a figure that reduced to 30.78 hectares in 2020. Water covered 23.31 hectares of the total land surface area for Garden but reduced to 1.20 hectares by 2020. The built-up area however, increased from 96.93 in 1990 to a whopping 345.42 hectares by 2020. By the end of the thirty-year period, all the other classes had been overtaken by the built-up area literally (Table 11).

Table 11: Garden Chilulu Land Use and Land Cover Change Dynamics From 1990-2020

Garden Chilulu	**1990**		**2000**		**Change (Ha.)**	**2010**		**Change (Ha.)**	**2020**		**Change (Ha.)**
Land cover	Area (Ha.)	Area (%)	Area (Ha.)	Area (%)	1990 - 2000	Area (Ha.)	Area (%)	2000 - 2010	Area (Ha.)	Area (%)	2010 - 2020
Bare land	107.64	26.83	40.23	10.03	-67.41	18.00	4.49	-22.23	16.47	4.10	-1.53
Built up	96.93	24.16	139.59	34.79	42.66	177.48	44.24	37.89	345.42	86.09	167.94

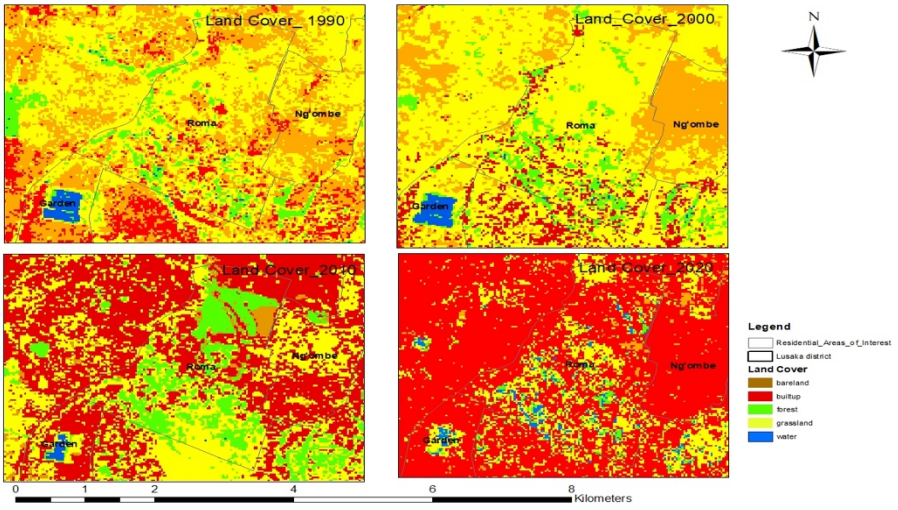
Forest	33.93	8.46	28.89	7.20	-5.04	16.92	4.22	-11.97	3.78	0.94	-13.14
Cropland/ fallow	139.41	34.75	167.49	41.75	28.08	180.81	45.07	13.32	30.78	7.67	-150.03
Water	23.31	5.80	25.02	6.23	1.71	8.01	1.98	-17.00	4.77	1.20	-3.24
Total	401.22	100	401.22	100		401.22	100		401.22	100	

Source: Field Data, 2023.

4.3.1.3 Roma Park Residential Area

Results of the land use and land cover change analysis for Roma Park show a steady increase in built-up land cover from 1990-2020. Results further show a reduction in the other classes of land cover and land use change namely grassland, bare land and forest during the same period. During the first twenty years, grasslands and forests were conserved as indicated in Figure 11.

Figure 11: Roma Park LULC from 1990-2020.



Source: Field Data, 2023.

For most of the thirty years of the study that ran from 1990 to 2020, most of Roma Park was covered by crop/grass land. Grass/cropland alone covered 360.54 hectares of the total land surface of the area. The built-up area only covered 58.50 hectares of the total land surface of the entire area. By 2020 however, the built-up area had increased significantly to 403.11 hectares of the residential area. All the other land use and land cover classes had drastically reduced by 2020 (Table 12).

Table 12: Roma Park Land Use and Land Cover Change Dynamics From 1990-2020

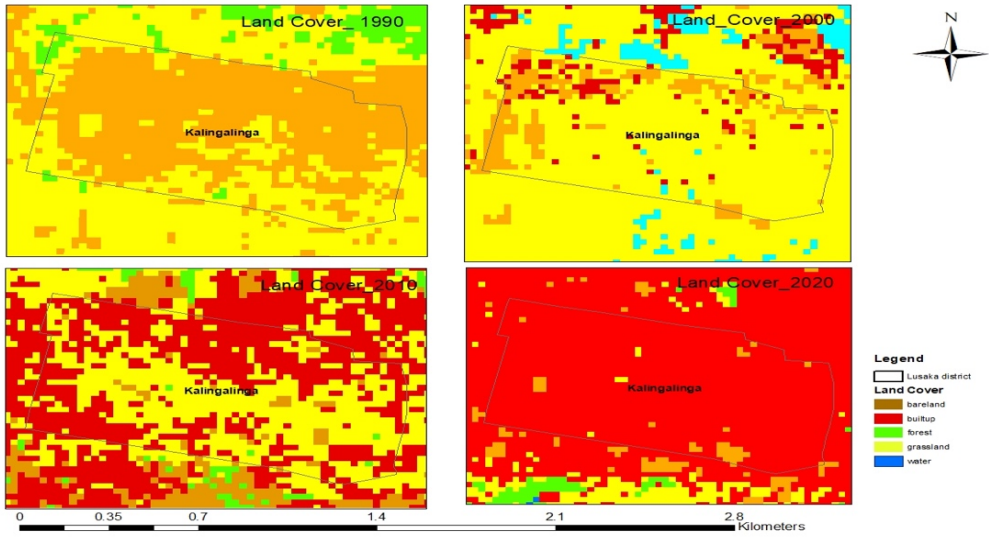
Roma Park	1990		2000		Change (Ha.)	2010		Change (Ha.)	2020		Change (Ha.)
Land cover	Area (Ha.)	Area (%)	Area (Ha.)	Area (%)	1990 - 2000	Area (Ha.)	Area (%)	2000 - 2010	Area (Ha.)	Area (%)	2010 - 2020
Bare land	181.89	27.38	46.98	7.11	-134.89	37.08	5.61	-9.90	19.80	2.99	-17.28
Built up	58.50	8.85	61.56	9.31	3.06	215.01	32.52	153.45	403.11	60.97	188.10
Forest	57.87	8.75	84.60	12.8	26.73	196.83	29.77	112.23	34.47	5.21	-162.36
Cropland/ fallow	360.54	54.53	466.20	70.51	105.66	212.04	32.07	-254.16	179.37	27.13	-32.67
Water	2.34	0.39	1.80	0.27	-0.54	0.18	0.03	-1.62	24.39	3.69	24.21
Total	661.14	100	661.14	100		661.14	100		661.14	100	

Source: Field Data, 2023.

4.3.1.4 Kalingalinga Residential Area

Results of the analysis of the land cover land use change analysis for Kalingalinga show an increase in the land area covered by built-up from 1990-2020. Results indicate an exponential increase in the built-up area between 2010 and 2020. Furthermore, results indicate a significant reduction in all the other classes of land use land cover change from 2010-2020 (Figure 12).

Figure 12: Kalingalinga LULC from 1990-2020.



Source: Field Data, 2023.

Results of the land use land cover change indicate that Kalingalinga was mostly covered by bare land, grass and cropland and water in 1990. The largest area was covered by 51.30 hectares of bare land followed by grass and cropland at 32.22 hectares. Water and built-up land cover classes only covered 10.25 and 25.20 hectares respectively. Over the three decades of the study, all the other classes of land use and land cover drastically reduced while the built-up area increased significantly. By 2020, the built-up area had increased from the initial 25.20 in 1990 to 106.92 hectares of the total area surface of the residential area (Table 13).

Table 13: Kalingalinga Land Use and Land Cover Change Dynamics from 1990-2020

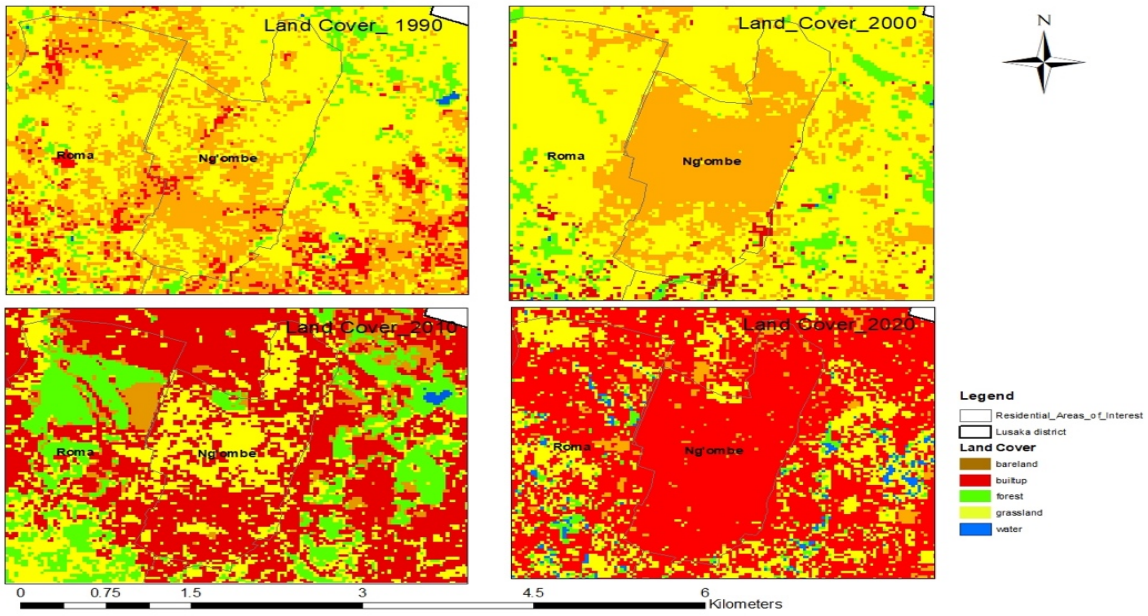
Kalingalinga	**1990**		**2000**		**Change (Ha.)**	**2010**		**Change (Ha.)**	**2020**		**Change (Ha.)**
Land cover	Area (Ha.)	Area (%)	Area (Ha.)	Area (%)	1990 - 2000	Area (Ha.)	Area (%)	2000 - 2010	Area (Ha.)	Area (%)	2010 - 2020
Bare land	51.30	42.57	17.28	14.34	-34.02	3.15	2.61	-14.13	2.88	2.39	-0.27
Built up	25.20	20.91	6.84	5.68	-18.36	51.84	43.02	45.00	106.92	88.73	55.08
Forest	1.53	1.27	1.43	1.19	-0.10	0.91	0.76	-0.52	0.50	0.41	-0.41
Cropland/ fallow	32.22	26.74	87.41	72.54	55.19	59.35	49.25	-28.06	5.95	4.94	-53.40
Water	10.25	8.51	7.54	6.25	-2.74	5.25	4.36	-2.29	4.25	3.53	-1.00
Total	120.50	100	120.50	100		120.50	100		120.50	100	

Source: Field Data, 2023.

4.3.1.5 Ngombe Residential Area

Land use land cover analysis results for Ngombe indicate massive transformation of the built-up class from 1990 to 2020. There has further been a reduction in all the other classes of land use land and cover from 1990-2020 as they have been overtaken by the built-up space (Figure 13).

Figure 13: Ngombe LULC from 1990-2020.



Source: Field Data, 2023.

According to the results of the LULCC analysis, Ngombe was mainly covered by grass and cropland and bare land use classes. The largest class of land use land cover was 177.57 hectares of grass and crop land followed by 122.04 hectares of bare land. The area covered by the built-up land use land cover class was only 11.97 hectares of the entire residential area, a negligible percentage. The transformation of the area however, showed a tremendous increase in the area covered by the bult-up space from the initial 11.97 hectares in 1990 to 297.52 hectares in 2020. At the same time, there was a massive reduction in the other land use land cover classes. Crop and grasslands reduced significantly from 177.57 in 1990 to a 5.39 in 2020 while bare land reduced from the initial 122.04 in 1990 to only10.53 hectares in 2020 (Table 14).

Table 14: Land Use and Land Cover Change Dynamics from 1990-2020 for Ngombe

Ngombe	**1990**		**2000**		**Change (Ha.)**	**2010**		**Change (Ha.)**	**2020**		**Change (Ha.)**
Land cover	Area (Ha.)	Area (%)	Area (Ha.)	Area (%)	1990 - 2000	Area (Ha.)	Area (%)	2000 - 2010	Area (Ha.)	Area (%)	2010 - 2020
Bare land	122.04	38.03	215.46	67.14	93.42	2.88	0.90	-212.58	10.53	3.28	7.65
Built up	11.97	3.73	6.57	2.05	-5.40	171.18	53.35	164.61	297.52	92.72	126.34
Forest	2.34	0.73	1.08	0.34	-1.26	5.40	1.68	4.32	2.27	0.71	-3.13

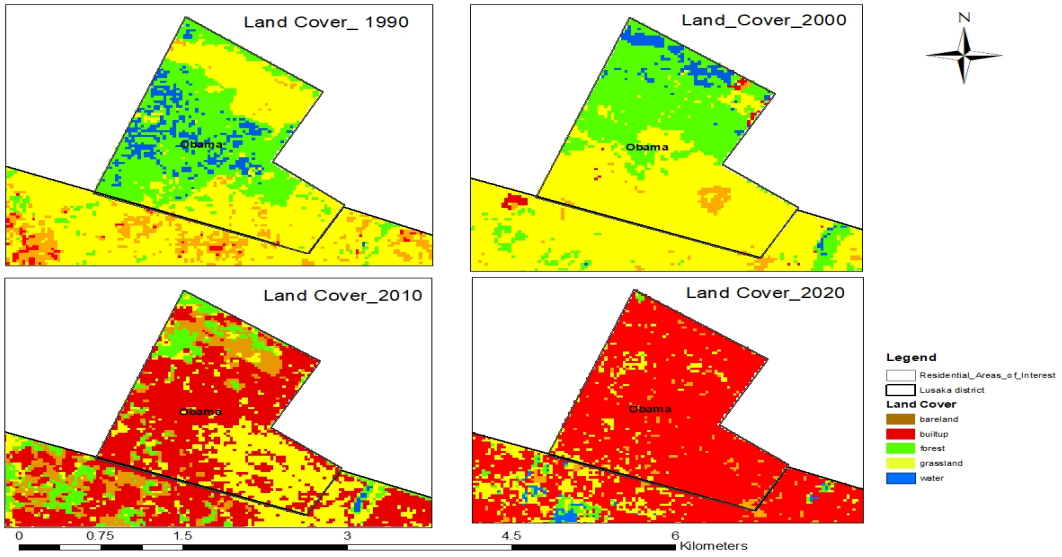
Cropland/ Grassland	177.57	55.34	92.28	28.78	-85.29	137.07	42.72	44.79	5.39	1.68	-131.68
Water	6.97	2.17	5.50	1.70	-1.47	4.36	1.35	-1.14	5.18	1.61	0.82
Total	320.89	100	320.89	100		320.89	100		320.89	100	

Source: Field Data, 2023.

4.3.1.6 Obama Residential Area

Analysis results for Obama land use and land cover change indicate a massive increase in the built-up area from 1990-2020. Results further indicate a drastic reduction in all the other classes of land use and land cover over the thirty-year period of study (Figure 14).

Figure 14: Obama LULC from 1990-2020.



Source: Field Data, 2023.

In 1990, as revealed by the results of the land use and land cover analysis, Obama was mainly covered in forest, crop and grassland. Forest covered almost half of the area occupying 171.72 hectares while cropland occupied 151.83 hectares of the total land surface of the area.Built up in 1990 was insignificant as it only covered 0.18 hectares of the residential area. Fast forward to 2020, it is built-up that covered most of the area taking up 334 hectares of the residential area at the expense of all the other classes. Forest reduced from the initial in 171.72 hectares 1990 to almost non-existent in 2020 with 0.81 hectares. Cropland reduced from the initial 151.83 hectares in 1990 to only 18.87 hectares in 2020 (Table 15).

Table 15: Land Use and Land Cover Change Dynamics from 1990-2020 for Obama

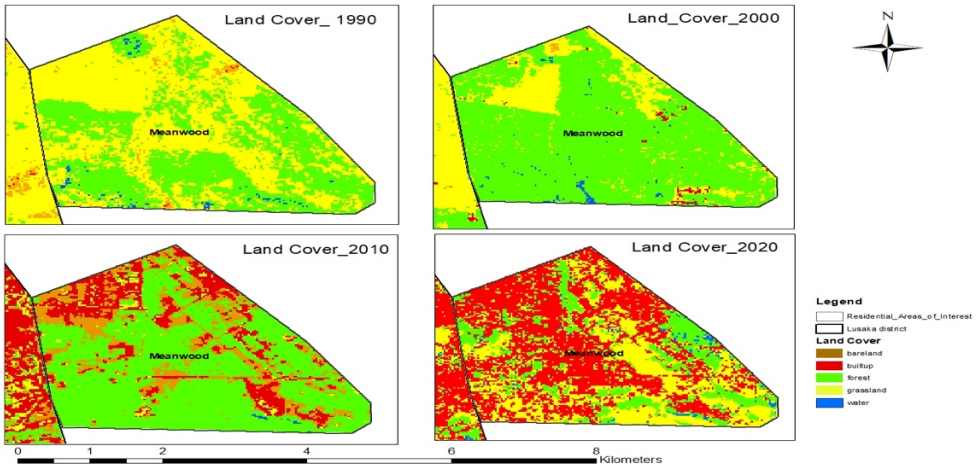
Obama	1990		2000		Change (Ha.)	2010		Change (Ha.)	2020		Change (Ha.)
Land cover	Area (Ha.)	Area (%)	Area (Ha.)	Area (%)	1990 - 2000	Area (Ha.)	Area (%)	2000 - 2010	Area (Ha.)	Area (%)	2010 - 2020
Bare land	6.21	1.68	8.73	2.36	2.52	40.32	10.75	31.59	13.31	3.59	-27.01
Built up	0.18	0.05	2.25	0.61	2.07	206.18	54.95	203.93	334	90.21	127.82
Forest	171.72	46.38	150.03	40.52	-21.69	20.53	5.54	-121.5	0.81	0.22	-19.72
Cropland/ Grassland	151.83	41.00	191.34	51.68	39.51	98.20	26.52	-91.17	18.87	5.10	-79.33
Water	40.32	10.89	17.91	4.83	-22.41	5.03	1.90	-3.49	3.27	0.88	-1.76
Total	370.26	100	370.26	100		370.26	100		370.26	100	

Source: Field Data, 2023.

4.3.1.7 Meanwood Ibex Hill Residential Area

According to the analysis results of the land use and land cover change for Meanwood Ibex Hill, some land use and landcover changes took place from 1990-2020. There has been some notably significant increase in the build-up area and a notable reduction in the other classes (Figure 15).

Figure 15: Meanwood Ibex Hill LULC from 1990-2020.



Source: Field Data, 2023.

The results of the land use and land cover change analysis indicate that in 1990, Meanwood Ibex Hill was covered mainly by 718.83 hectares of grass/crop land and 581.45 hectares of forest. Built-up was negligible as it only covered 0.72 hectares of the entire area. By 2020 however, the areas covered by grass/crop land and forest had exponentially reduced to 421.83 and 264 hectares respectively. Built-up on the other hand, had gone up from the initial 0.72 in 1990 to 627 hectares in 2020. All the other classes of land use and land cover were reduced while the built-up area land use class increased (Table 16).

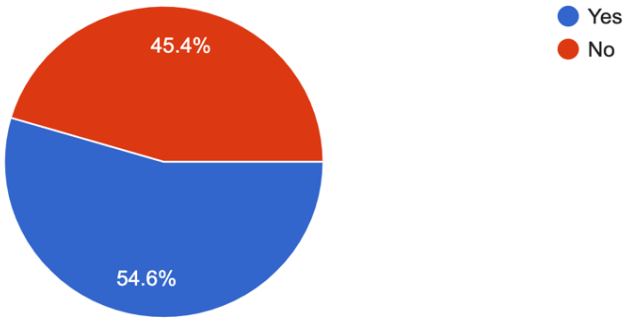
Table 16: Meanwood Ibex Hill Land Use Land Cover Change Dynamics from 1990-2020

Meanwood	**1990**		**2000**		**Change (Ha.)**	**2010**		**Change (Ha.)**	**2020**		**Change (Ha.)**
Land cover	Area (Ha.)	Area (%)	Area (Ha.)	Area (%)	1990 - 2000	Area (Ha.)	Area (%)	2000 - 2010	Area (Ha.)	Area (%)	2010 - 2020
Bare land	19.53	1.47	2.25	0.17	-17.28	263.97	19.87	261.72	10.53	0.79	-253.44
Built up	0.72	0.05	11.34	0.85	10.62	215.10	16.19	203.76	627.84	46.85	412.74
Forest	581.58	43.68	1079.19	81.06	497.61	829.98	62.46	-249.21	264	19.70	-565.98
Cropland/ Grassland	718.83	53.90	227.97	17.12	-490.86	17.64	1.33	-210.33	421.83	31.48	404.19
Water	10.71	0.80	10.62	0.80	-0.09	4.68	0.35	-8.55	7.17	0.80	2.49
Total	1331.37	100	1331.37	100		1331.37	100		1331.37	100	

Source: Field Data, 2023.

The results of land use changes in Lusaka from the urban residents' and key informants' perspectives are also presented. Results show that 54.6% (n=503) had knowledge of urban LUCs in Lusaka (Figure 16).

Figure 16: Knowledge of the Meaning of Urban LUCs.



Source: Field Data, 2023.

A further exploration of participants' knowledge of urban LUC emerged various themes as presented below:

Urbanisation and development; participants explained urban LUC using the urbanisation and urban development nexus. As explained by respondents, LUC is associated with the transformation of formerly bare spaces and agricultural land and, their subsequent conversion to various urban LUs such as commercial, industrial, mixed and residential. Some of the respondents explained LUC this way:

> *"The changes in the use of land from non-urban to urban… how a city changes the way they use land due to factors like a growing population i.e., different use of land in urban areas from houses to shopping complexes"* (RN 837, 46, businessman from Meanwood, Ibex Hill).
>
> *"It is change in urban land use for the purpose of residential and economic development such as retailing, manufacturing, residential housing and industrial… where land is used for the purpose of development, it can either be positive or negative"* (RN 63, self-employed male, 47, from Roma Park).
>
> *"It is the developmental use of land by people living in urban areas in a space of time according to the sort of development planned to be put in a town"* (RN 14, retired male, 62, from Garden Chilulu).
>
> *"This is the usage of land by people who are living in towns… the developmental use of land by people living in urban areas by developing it both through building modern houses and construction of developmental structures"* (RN 005, Female 38, unemployed from Ngombe).

> *"It is town development, or in other words, improving a place… changing an unimproved area i.e., a village or shanty compound (unplanned settlement) to a better place for easy access of goods and services such as houses, roads, schools etc"* (RN 84, female, 67, unemployed, from Obama).

Interviews conducted with key respondents (KRs) on the understanding and or definition of urbanisation in the context of Lusaka urban equally yielded a similar theme as presented:

Urbanisation trends and expansion; interviews with KRs consistently revealed that the rapid urbanisation of Lusaka and the peripheral areas constitute the understanding/definition of urbanisation and urban LUCs. KRs noted with concern, the expansion of the areas beyond the CBD together with the proliferation of socio-economic infrastructure such as shopping malls as they explained:

> *"Of course, we have seen quite some works in terms of urban infrastructure development in Lusaka. The current urbanisation rate as a country stands at 4% but generally, the urbanisation of Lusaka is quite rapid and it's spreading to all surrounding towns. For instance, Lusaka-Chongwe doesn't really feel like two separate towns because of the spatial expansion of the city, same with Kafue and Kabwe. Urbanisation, infrastructure development and gentrification are coming into effect. A drive along Alick Nkhata Road is characterized by a lot of buildings that seem to be business premises. But then, the question that begs an answer is, where are the people that once lived at that place where these shops now stand, where did they go?"* KR6.

Removal of natural environmental features; respondents explained urban LUC as being the removal of flora, fauna and other natural features such as wetlands or natural drainages. According to some participants, LUC is understood as afforestation efforts that seek to replace the lost natural ecosystems. Respondents witnessed some tree planting exercises on bare land in Lusaka and described it as LUC. Some participants had this to say:

> *"It is the removal of trees and other forest plants in urban areas to give way to construction, later on, afforestation here and there"* (RN 903, unemployed male, 64, Mtendere East, RN 793, unemployed female, 39, from Meanwood Ibex Hill).

> *"It's the human activities that end up transforming the natural landscape to urban land uses such as shopping malls… the environment is never the same after that...* (RN 003, 45, businessman, from Mtendere East).

> *"It is the transformation of the natural urban landscape to different urban uses that entirely change the face of the environment… I used to live in Canada Court in the late*

1980s and 1990s before I moved to Meanwood Ibex Hill. In the morning and evenings, different colourful birds would sing nice melodies from the trees where now lies East Park, sometimes, they would sing from the trees in our backyards. The birds have now disappeared, by the way, there were also small wild animals, one wonders what happened to them… In the morning, we would enjoy fresh air by simply opening our windows. The views were spectacular. With the coming of Arcades, the marsh or dumbo that was there disappeared, then came East Park although recently… Ever wondered where the annual rain season floods emanate from? It is because all the marsh areas that used to drain the water are now concrete, and the water has nowhere to go. Lusaka has been through a lot of urban LUCs that have left it bare while its scenic views have disappeared, it's a sad state of affairs, the environment has paid the ultimate price" (RN 578, female, 64, employed, from Meanwood Ibex Hill).

Change in land utilisation over time; for some of the respondents, urban LUC is defined in the context of altering the way urban areas utilise land. These include the change from residential to commercial, change from agricultural/farmland to residential and industrial use by different landowners and the government. Participants had this to say:

"How the land is used overtime, can be used differently from what it was initially used for e.g., when land changes ownership, it effects how the land is used. For instance, a previous owner may have been a farmer while the new owner may want to set up another kind of business e.g., in Kalingalinga where we used to live before we came here, malls are now being built where family houses stood not so long ago" (RN 24, employed female, 29, from Meanwood Ibex Hill).

"It is the change in the use of land in a course of time for development in order to suit the population" (RN 12, unemployed male, 55 from Garden Chilulu).

"The change or shift in the use of land in urban areas in a space of time, the change of how land is being used from what it was initially to what it is right now. In the context of Lusaka urban for instance, it is when farmland is demarcated into residential plots just as this area was a long time ago" (RN 16, businesswoman, 48, from Meanwood Ibex Hill).

Rural–urban migration, urban population growth and adaptation; some respondents defined urban LUC using urban population growth and the demand for urban land. Respondents also defined urban LUC using rural-urban migration as they went on to say that migrants need land for various urban uses such as residential and commercial. Some of the responses recorded are presented as verbatim:

"The change in which land is utilised by people in urban areas from small communities to bigger communities… small communities may have had fewer land uses compared to even bigger communities hence the change in urban land use as the urban population increases" (RN 128, employed male, 50, from Mtendere East).

"The movement of people from rural areas to urban areas resulting in an increase in the population of people in urban areas and how they use land… I mean, the movement of people from rural to urban areas and activities changing from time to time due to increase in population. It is basically, how a city decides to use its land according to its population" (RN 43, female, 45, self-employed from Garden Chilulu).

"How a city changes the way they use land due to factors like a growing population… as the urban population grows, so does the changes in land use" (RN 56, 30, businesswoman from Roma Park).

*"When people move from other places mostly rural areas to settle in one place and the activities there start changing due to population growth" (*RN 98, male, 34, unemployed from Ngombe).

Land variation over time; according to respondents, LUC refers to the variations in the use of urban land over time. Respondents explained that as times change, urban land also changes use from one form to another. Some respondents had this to say:

"How the land is used overtime as land can be used differently from what it was initially planned or used for. It is the process of utilization of land for the intended purposes at any given time. Land use is fluid, it changes to suit the demands and needs of the population" (RN 102, male, 37, employed from Ngombe).

"This is change through which land is being developed by people living in an urban community… how the general population decides to use land at any given point in time; used for the benefit and development of the people. It is the process of land in an urban area being transformed from less developed to a highly developed urban area over extended periods" (RN 72, male, 28, unemployed, from Kalingalinga).

Land tenure and ownership; land tenure and the ownership of land were cited by some respondents as making up urban LUC in Lusaka. Respondents explained that changes in land tenure from for instance, traditional and communal land ownership on the city fringes indicate LUC. According to respondents, LUC is synonymous with land tenure, land ownership and utilisation as they had this to say:

"Urban LUC is the change of land tenure system and the way authorities and people who own land change its usage…. It is a change of land use from agricultural to commercial or residential like this area, it was initially a farm belonging to NRDC. Its use changed from agriculture to residential" (RN 783, employed female, 27, from Obama).

"This is the process by which land is used and managed for development purposes… Change in the way land is being utilised and managed. The owners of the land decide how they utilise and manage their own land" (RN 61, male, 28, unemployed from Roma Park).

Land conservation and future planning; some respondents referred to urban LUC in Lusaka as preserving and conserving urban land for future utilisation. They mentioned the preservation of tracts of urban land for future use. Respondents explained that each urban area must have urban land use change. Lusaka, according to the participants, long time ago practised conservation of tracts of land or sections of the city for future utilisation as the city expands and its population increases. Respondents had this to say:

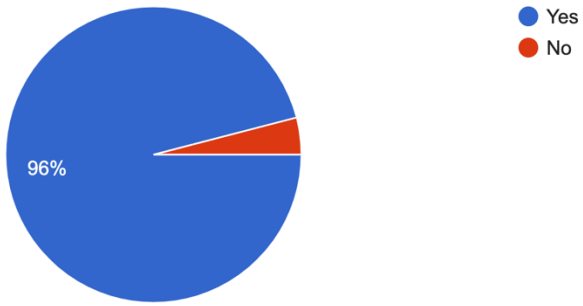
"It is the day-to-day management and administration of reserve land… land set aside for future use literally, might be used for a forest, residential area, commercial or even agricultural activities" (RN 101, employed, 27, female, from Obama).

"Change by which land is transformed from being plain and bare land (could have been agricultural land then) to building on it… In the past, the land was being used for agricultural purposes but at the same time, being conserved for future use (current use). That is, construction of buildings e.g., Meanwood Ibex Hill was formerly for agricultural purposes but now has buildings for mostly residential purposes… so yes, changing of land in terms of building now than before" (RN 65, female, 46, unemployed, from Roma Park).

"Keeping land for future use… It's the land which is kept for future use" (RN 211, unemployed, male, 77, from Ngombe; RN 514, employed female, 35, from Kalingalinga; RN 625, employed male, 23, from Obama; RN 845, self-employed, female, 41 from Mtendere East).

With regards to observable shifts in LU in the respondents' immediate communities and surrounding areas, 96% (n=878) of the participants responded in the affirmative (Figure 17).

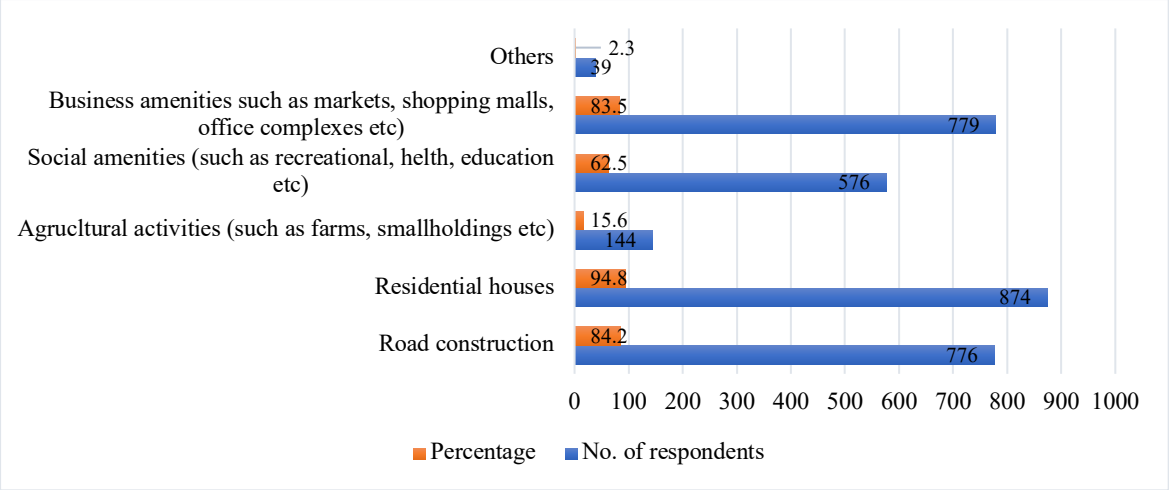
Figure 17: Observable Shifts in Urban Land Use in Lusaka.



Source: Field data, 2023.

From the responses, the notable and observed change was residential house construction at 94.8% (n=874) and road construction at 84.2% (n=776). Other notable land use changes include the construction of sub-standard drainages, fuel service stations, grocery shops, and sporadic retail markets (mostly fruits and vegetables) in high and medium density residential areas (Figure 18).

Figure 18: Observable shifts in Lusaka's land use change over time.



Source: Field Data, 2023.

KRs equally revealed that there were several observable changes in urban LU in Lusaka. Most changes revolve around the conversion of formerly agricultural land to residential, commercial or mixed-use types as KRs had this to say:

> *"Most of the changes that have been observed have to do with for example, in a farming area, maybe somebody buys a piece of land because that is a designated farming area, then applies for LUC. There will be a change of land use to commercial so that particular portion becomes a commercial property. So, there are those industry to commercial and we've been attending to*

a number of those because you know when it's an industrial area within a residential or farming block, it raises some questions. Then filling stations, we have noticed that they are now in residential areas, that is one major LUC because that is in a residential area even that particular plot would have been a residential but then when they apply for LUC it becomes commercial and they put up whatever they like" KR1.

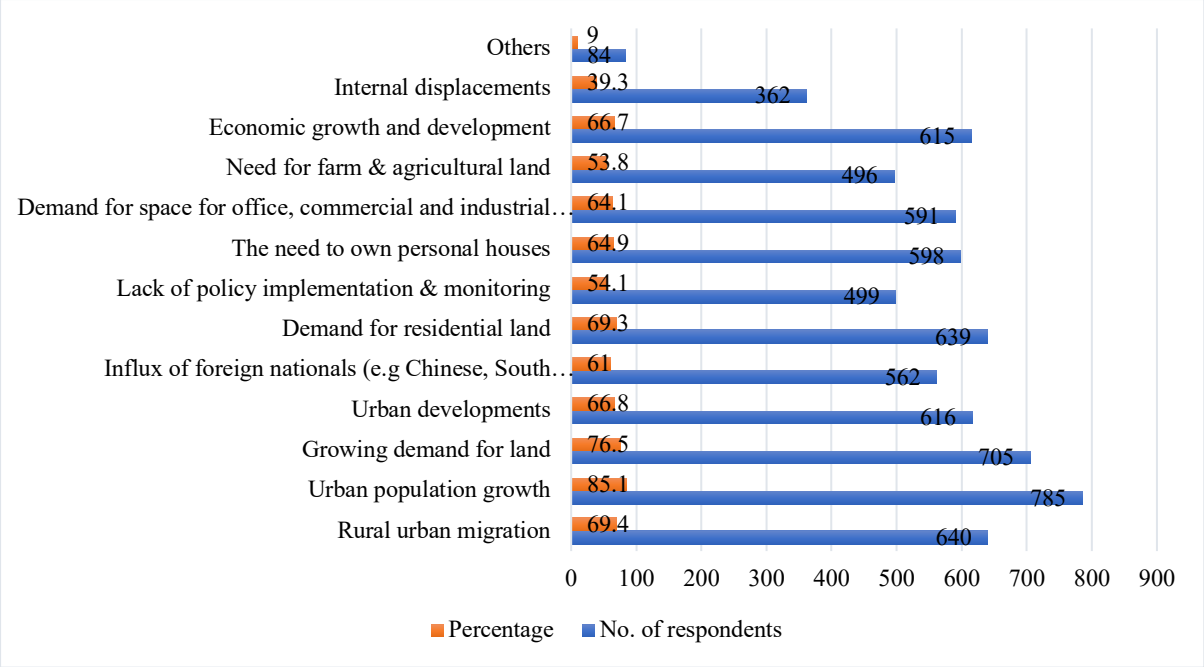
"The major LUCs that have taken place are mostly from farmland to residential. Unplanned informal settlements have been formalized and they've now become commercial. That is happening mostly in peri-urban areas e.g. around and along Alick Nkhata road in Kalingalinga. Those were previously informal settlements for the general workers for the University of Zambia, Chainama Hills and NRDC. They were regularized and are now being converted into commercial properties. There are some double and multiple-storey housing structures coming up too. The owners of those commercial properties are buying off the informal settlers who are being offered sums of money to go and buy land elsewhere. Because of poverty, these settlers very easily give away that land to go and buy somewhere else in the city fringes or outskirts. We have seen these kinds of LUCs happening in most informal settlements such as in the direction of Makeni Bonaventure going towards the Linda compound, between Linda Road going towards Baobab, land that was initially farmland is now composed of commercial properties that some big companies have set up. That is also another form of urban LUC which has happened where the farmland is being converted into commercial properties for shopping malls and other commercial activities such as warehouses" KR2.

"Shopping malls and filling stations. Obviously, planning is continuous, it evolves as the need arises. It's up to the planners to sit down and strategise on how to incorporate the current demand into the city's blueprint or plan. For a filling stations, there is a buffer, there is some allowable distance to the nearest building whether it's a house, a wall fence etc. We are just wondering if they put in some safety measures that we can't see. If a child in the next yard is playing and they throw something flammable into the filling station yard, what happens? Last year for instance, there was a bushfire around Chainama, and it was scary because there is a filling station there. Then we equally have shopping malls at each and every corner in Lusaka. It leaves us wondering how involved the planners are in the whole process" KR3.

4.4 Drivers of Urban Land Use Change and Effects on Urban Residents

Considering the causes of urban LUC in Lusaka, 85% (n=785) cited urban population growth, 76.5% (n=705) growing demand for land for various uses, 69.4% (n=640) rural-urban migration, 69.3 (n=639) demand for residential land among others (Figure 19).

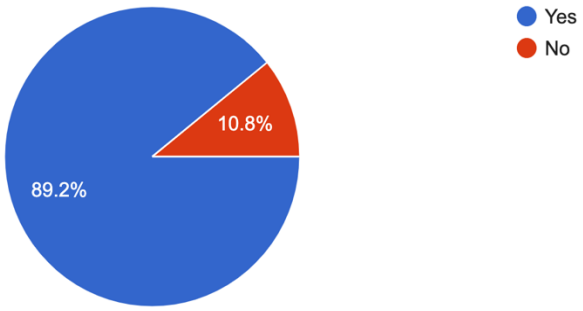
Figure 19: Causes of Urban Land Use Change in Lusaka.



Source: Field Data, 2023.

Majority of the respondents (89.2%, n=818) further indicated that that they were affected by land use changes in their area (Figure 20).

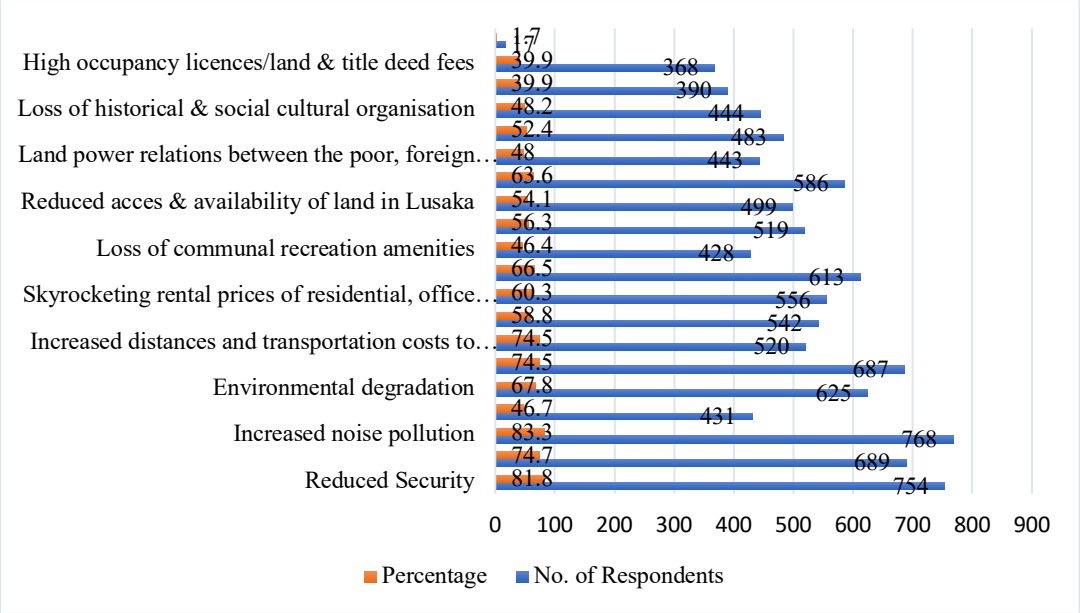
Figure 20: Individuals and Households Affected by Urban LUC.



Source: Field Data, 2023.

Effects of urban LUCs on respondents ranged from increased noise pollution from 83.3% (n=768), reduced security from 81.8% (n=754), and exposure to environmental and health hazards from 74.7% (n=689) of the population among others (Figure 21).

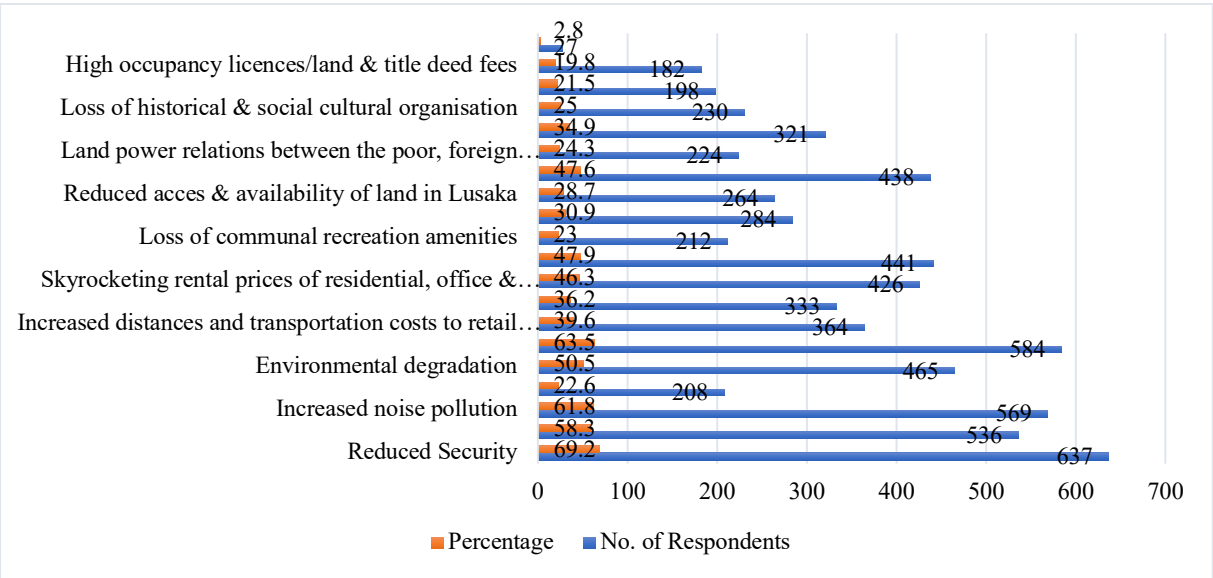
Figure 21: Effect of Urban LUCs on Communities and Entire Lusaka.



Source: Field data, 2023.

Reduced security topped the list at 69.2% (n=637), increased prices of perishable goods (fruits and vegetables) at 63.5% (n=584), increased noise pollution at 61.8% (n=569) and 58.3% (n=536) exposure to environmental and health hazards among others (Figure 22).

Figure 22: Urban LUCs with the Most Effect on Participants.



Source: Field data, 2023.

Probing further to explore how respondents were affected at the individual, household, residential and Lusaka levels, responses recorded generated various themes. Responses ranged from lack of basic social amenities such as schools and clinics, the increasing cost of living,

lack of space for subsistence farming and backyard vegetable gardens to spending more time trying to run errands or getting to individual workplaces due to traffic jams and congestion on the roads. The following were the emerging themes.

Economic struggles and housing challenges: The increase in Lusaka's urban population has brought about a high cost of living. According to the participants, access to essential commodities (food, goods and services such as education, healthcare, water and sanitation and housing) are continuously challenging their capabilities. Participants reported that land in Lusaka and its peripherals is expensive when available. Some respondents reported being cramped up their families in small living spaces that equally pose challenges of water and sanitation, liquid and solid waste management. Respondents also cited as major challenges, the high cost of living, seasonal flooding and disease outbreaks, water and air pollution, and environmental degradation as they had this to say:

> *"Rentals here are exaggerated... they are too expensive, minimum of k4500 and some as high as k11000 per month, worse off buying land, it's too expensive! A 20X25 plot can be as expensive as six hundred thousand Kwacha. How then can we afford land like this? It is expensive here it's like they only target the elite and rich. Along with that, access to food in Lusaka has become too expensive and there are not many shops around here that offer a variety of things, so in order to access certain commodities we go to town. Sadly though, as you drive out from this area, immediately you reach the main tarmac you will be slowed down by traffic and it's inconveniencing"* (RN 851, 27, unemployed, female from Meanwood Ibex Hill).

> *"The price of goods keeps increasing, we can't afford a loaf of bread anymore. Back then, we used to buy tomatoes at a minimum amount of at least 50ngwee, now tomatoes are more than 3Kwacha… talk of the price of mealie meal, keeps going up, sugar too, in fact, its everything!"* (RN 007, 50, male, self-employed, from Garden Chilulu).

> *"Cost of living is high, we used to buy vegetables at Foxdale mall when it was bare land but now it's a mall. It's like we have started perceiving tree planting and gardening as being outdated. The few who would want to do that have tiny yards that do not leave room for them to do that"* (RN 59, male, 45, Self-employed, from Roma Park).

> *"Rentals have really affected me more because the price keeps getting higher and higher & we keep on shifting to an affordable house although in the same area … In our area right now, hygiene is poor, six families still using one toilet"* (RN 122, male, 37, self-employed, from Ngombe).

Respondents reported facing the challenge of modest access to essential facilities, amenities and services such as the constant supply of clean water, healthcare and education. At the time of this study, participants from Obama revealed that the area had no existing police station, established community market, government schools, hospitals, clinics and other essential facilities. Respondents also complained about transportation costs, distance from the farms and the rising demand for commodities as they explained that:

> *"Access to medical care is a challenge, our public hospitals rarely have drugs, they just give Panadol and the rest you have to buy… for advanced medical conditions, we only rely on UTH which is ever congested, Levy will still refer you to UTH ultimately"* (RN 861, female, 32, employed, from Meanwood Ibex Hill).

> *"Kids have no place to play and relax from, the only thing they know is going to the mall"* (RN 58, male, 38, unemployed, from Roma Park).

Traffic Congestion: Participants complained of traffic congestion which impedes and decreases their productivity, causing delays and stressing commuters within town. Respondents reportedly spend many productive hours stuck in traffic congestion with no other options. According to the respondents, a cyclist stands a better chance of reaching town earlier than one who drives or uses public transportation during traffic peak hours. Some of the participants explained that:

> *"Be it by foot or by car, mobility is a challenge, on the road due to traffic, in town, even movement by foot is a struggle because we are too many in Lusaka"* (RN 908, 51, female, unemployed, from Meanwood Ibex Hill).

> *"We have serious traffic jams because this city is densely populated… if you are going to work or buy things, it takes some good minutes to just cross the road… there are increased road accidents now resulting from traffic jams"* (RN 115, male, 27, employed, from Ngombe).

> "*We are wasting way too much time on the road, we have too many cars and traffic costs us productive time. Too much traffic jams in Lusaka because it's densely populated… I am usually stuck in traffic jams when I am going to my business place. I normally have to start off an hour earlier than before if I am to meet appointments on time… Traffic in Lusaka is very stressful really*" (RN 45, male, 36, self-employed, from Roma Park).

Environmental concerns: According to respondents, changes in urban LU have massively contributed to environmental degradation. Respondents reported a drastic reduction in urban

community green spaces and ultimately, their inexistence plus the increase in various forms of pollution. Some of the respondents' explanations recorded as verbatim are presented:

> *"Our environment in some areas isn't good because there is a lot of dirty around. At times, the sewer system isn't built correctly or positioned properly it may be next to a water tank and this pollutes the groundwater"* (RN 922, female, 40, unemployed, from Meanwood Ibex Hill).

> *"Too much exposure to environmental health hazards, we have sewers just opposite our home and the smell causes air pollution, we never have fresh air, that's a health and environmental hazard. Noise pollution… there is increased noise pollution because of the bus station which is too close to houses… too many people and music from bars… the noise coming from shebeens where beer is sold without a license is also a nuisance. There is a bar that was recently opened near my place, and it gets very noisy… Our children don't have play parks or zoos to go to but are exposed to beer, drugs and prostitution at an early age, our girls are found in drinking places instead of concentrating on school"* (RN 008, male, 50, unemployed, from Garden Chilulu).

> *"The environment is slowly degrading because there is no garbage control that's why it's easy to have diseases such as Cholera. We get Cholera and Typhoid because there is no clean and safe water for domestic use and, during the rainy season, we get floods there is mud everywhere… The environment in Lusaka doesn't look appealing anymore, too much littering around and heaps of garbage everywhere, it is unsightly, that's actually sight pollution"* (RN 62, Female, 41, unemployed, from Mtendere East).

Respondents also reported the loss of agricultural, cropland and farmlands across the city as an agricultural crisis that has further posed another challenge especially to those who are dependent on farming. Respondents also cited the reduction in land available for both subsistence and commercial agriculture as having a negative effect on their livelihoods and overall wellbeing. Participants whose sustenance heavily relies on subsistence farming complained that the cost of basic necessities such as food is now unaffordable. Respondents explained that:

> *"The cost of living is high, and it keeps increasing due to lack of land for agriculture. There are shortages of agricultural land since infrastructure has been built on agricultural land… I am a farmer also, in 2020 I was looking for farmland, the prices were too high in Lusaka and, because of the high demand and shortage of agricultural land in Lusaka, I was forced to go and buy land in Kabwe where the price was reasonable at least"* (RN 177, male, 36, employed, from Kalingalinga).

"*Cadres got our land so now we have nowhere to plant maize or vegetable gardens… Due to land power relations between the poor, foreign nationals and political agents, farmlands for agricultural purposes are scarce in our area… This has led to the increase in prices of vegetables and other essential goods and services that has consequently made us to double the daily amounts we spend on these items. For instance, farmers who sell vegetables and fruits have increased the order prices at the city market because they are paying more for transportation costs from their farms to the city market. Conversely, marketeers have increased vegetable prices because of increased transportation costs from the city market where they order the vegetables from"* (RN 370, unemployed male, 46, from Ngombe township).

According to respondents, perishables now come from faraway farms with increased transportation times, costs and distances. Respondents explained that the prices have been rising making it difficult for them to afford decent meals and lifestyles consequently forcing them to buy fruits and vegetables exorbitantly. Participants had this to say:

"I sell vegetables, farmers who are selling vegetables have increased the order prices at the city market because, they are paying more for transportation costs from their farms to the city market. As a result, I have also increased my selling prices. Vegetables are expensive here especially tomatoes" (RN 306, 59, female, self-employed, from Kalingalinga).

"Agricultural land is all gone, it has been built on… there's no space for gardens and trees. All the big gardens where we used to have fresh vegetables are gone! That's why this area was named garden, but we no longer have the said garden. There was a place called "Kwamintonyo" that used to have a lot of sugarcane, it is gone too… We have run out of the space we used for gardens, we were asked to stop and were compensated an amount of k600 for each vegetable grower… Now the vegetables are too expensive for us, we can barely afford them nor feed our families three meals a day" (RN 532, self-employed, 46, female, from Garden Chilulu).

Cultural shift and social disruptions: Respondents complained that as Zambians, we have lost our traditional and cultural values, behaviours, practices, organisation and identity as a people. Respondents mainly attributed this to the rising urban population and rapid urbanisation coupled with western cultural influence copied from foreigners settling in our country. Some respondents lamented how we have lost our cultural organization and values which our children can learn from hence, they are now learning bad behaviours from foreigners. Participants complained of an ongoing cultural erosion resulting in the loss of our traditional values and a

dilution in our cultural practices. According to the respondents, people are going with what's trending, losing our culture in the process. Respondents explained how for instance, people now celebrate '*Matebeto'* and '*Chilanga Mulilo'* (traditional bemba ceremonies meant to appreciate a spouse years into marriage and, introduce a fiancée to the family foods respectively) anyhow without understanding the culture behind it or who should do it. Respondents had this to say:

> *"Social media has made us somewhat ignorant of our "ubuntu" roots and our culture e.g. someone can be attacked in our presence, and instead of helping we will be busy taking videos. So, urbanisation with its effects of technology isn't doing us good when used for the wrong purpose… For instance, people feel embracing their own culture is old fashioned, we even refuse our children to use local languages when they are young because we love the western culture"* (RN 598, Female, 49, employed, from Garden Chilulu).

> *"We have lost our cultural organisation/values where our children can learn from, they are now learning bad behaviours from foreigners... Our children find it normal to expose their bodies and wear indecent clothes, this is not our culture! Our children and other people find it old fashioned to show respect before elders, we are slowly losing it, kneeling now appears to be old fashioned"* (RN 221, female, 55, Self-employed from Kalingalinga).

> *"We have lost our culture all in the name of modern society, children no longer have respect for elders, we have lost the sense of "Ubuntu" we don't even know our neighbours very well. Back then, a community was like family and worked together, our culture is slowly fading"* (RN 56, female, 30, self-employed, from Roma Park).

> *"Our culture is diluted; people are taking what they see on social media as a way of life. Talk of children, nowadays, most of them are not cultured… children are losing our culture due to their exposure to social media… We used to have playgrounds now we only have one or two, children are now glued to phones and TV, we have lost our culture… We let the TV teach our kids and not us parents doing so, too much exposure to Zee world"* (RN 548, Self-employed male, 44, Garden Chilulu).

Security challenges: Households reported reduced security as one of the major challenges associated with urban LUC, urbanisation and the increase in the urban population. Respondents in the high-density areas lamented the pain of living closely with drunk people (drunk as early as 06:00 hours in the morning) in their communities. Participants expressed concern about bars, taverns, shebeens, and makeshift drinking places that serve as terrible examples to growing children and societal morality since it is now perceived as normal to be drunk and unproductive all the time. Participants reported reduced individual, household, and community security

measures with some areas such as Obama lacking police posts/stations. Some of the participants' concerns are presented as verbatim:

> *"We have high rates of theft in the community. Here, people take advantage because there is no police service. We have no peace of mind; we worry about robbers and increased noise pollution. There are too many bars in the area close to each other, so it gets very noisy. The houses are too close to each other so one cannot even keep domestic animals such as security dogs in their yard"* (RN 298, 40, self-employed male, from Obama).

> *"Because of high population growth rates, there are high rates of crimes, junkies, thefts and youths who don't have anything to do instead they are busy stealing from people. There is a lot of theft even when you're driving your own car. When you reach Manda Hill traffic lights, you need to close the windows as you risk being attacked; I lost my phone a few days ago just like that"* (RN 778, Female, 37, employed, Roma Park).

> *"There has been an increase in the number of robberies in this area. Our household has been robbed a few times in the recent past, but this never used to happen before… At first, we used to have very tight security just by the entrance, but now, anyone can come in and out. Most of the time, no one is manning the gates"* (RN 846, female, 37, employed, from Meanwood Ibex Hill).

Limited access to resources: According to the respondents, population growth, particularly overpopulation, has strained the available resources, they are not enough to go round. In high-density areas, participants reported lack of access to land, lack of adequate and affordable housing and other life-supporting resources such as water and its provision. In some high-density areas, respondents reported a lack of readily available safe water for domestic consumption. They complained that water is either rationed or when available, there is low pressure, thereby impacting them negatively. In areas such as Kalingalinga, respondents reported stiff competition for rental properties for different uses since there is now mixed land use. Some participants have been displaced to pave way for what landowners deem as profitable ventures as they explained:

> *"I was moved from where I was doing my tailoring business because of the coming of the mall (Kalingalinga Mall) and, my husband's carpentry business has been affected, it's taking about a week or more to sell a product, because there are some shops in shopping malls that are selling better products than we are making here so people are rushing to malls to buy cheaper goods"* (RN 71, 35, female, unemployed, from Kalingalinga).

> *"People have been displaced (internally) from where they used to stay by those with money who just build anything at any time they feel like… Foreigners seem to have greater privileges than us the locals, there are internal displacements by these Chinese and Indian people and now, because of them, land has become too expensive to buy and rentals keep increasing"* (RN 161, 30, unemployed, female, from Ngombe).

Poor and vulnerable tenants complained of prices going up and becoming unaffordable as well as competition with boarding houses for different tertiary institutions within the vicinity. The participants reported restricted ability through exorbitant prices, lack of readily available and affordable land to access and acquire land for housing and agricultural purposes. Here is what some participants had to say:

> *"Buying land is extremely expensive here and access to land is no more. Pieces of land that we are calling residential plots are too expensive, a small plot can be about K600 thousand. Furthermore, we are kind of far from the market and malls where we buy things making this place expensive even if you are just renting the house… If you're walking heading to the roadside to get vegetables, it's quite a distance till you get to the main entrance where you find shops"* (RN 838, 39, employed, female, Meanwood Ibex Hill).

> *"We no longer have access to land in Lusaka. For example; a 30x40 piece of land in Makeni is going at K450 thousand, how is this affordable? So, the poor continue to rent"* (RN 723, 32, male, employed, from Garden compound).

Social amenities, health and sanitation: Respondents explained that lack of access to public social amenities greatly affected their families and communities. In Obama, participants complained about the lack of public social amenities and services such as police stations, public schools and hospitals/clinics/health posts, water provision and sanitation services. In New Mtendere, Ngombe, Garden Chilulu and Kalingalinga, respondents complained of having few government schools that are inadequate to cater for the entire population. Meanwood Ibex Hill, Obama, Garden Chilulu and Roma Park had no government schools during the study according to the residents. A respondent lamented and had this to say:

> *"We have no government schools here in Obama, the government school that's closest to us is out of Obama and far (Kapwelyomba Basic School). It is very risky and, we had a case of a child who was killed so now we wait for our children to be old enough for school. There are only a few private schools and not everyone can afford that. People who can't manage to pay for private schools end up waiting till the child is old enough to start going to government schools in other areas so no pre-grade"* (RN 266, Male, 29, unemployed, from Obama).

Respondents reported having poor sanitation and water supply services that affect their health. In low-density areas of Meanwood Ibex Hill and Roma Park, participants explained their reliance on borehole water. Ngombe and Kalingalinga rely on water kiosks and shallow wells. Respondents complained of grappling with inadequate housing and toilet facilities as they use pit latrines that cause water-borne diseases especially during rainy seasons. Participants reported being exposed to unsanitary living conditions that act as health hazards. Respondents also complained about limited access to medical services for serious ailments, the poor quality of medical services offered in most government facilities or the very absence of facilities in certain areas. Respondents also explained that:

> *"We have seasonal floods in our area every rainy season due to poor drainage system and unplanned building of houses… Because of the high number of people (overcrowding in homes) and closeness of the houses, people are throwing garbage everywhere even into other people's yards. Most people cannot pay for garbage collection, hence its accumulation… We now have environmental degradation everywhere in Kalingalinga, land now smells... There is lack of running water and clean toilets since we use communal ones that cause urinary tract infections (UTIs). Sanitation is poor I am staying pa mudadada (semi-detached flats) with 5 families using one pit latrine toilet and it gets full"* (RN 412, 37, male, unemployed from Kalingalinga).

> *"Due to the poor planning of the area, we do not have a hospital or our own clinic, police post/station or public school. Going all the way to Chelstone to get medical services when we need advanced medical care, is an inconvenience… Moreover, government hospitals don't give quality services as they don't adequately investigate what a patient is sick of but just administer Panadol, Flagil or anti- malaria. We get forced to use private hospitals which turnout to be expensive"* (RN 210, female, 28, unemployed, from Obama).

The interviews conducted with key respondents on the effects of urbanisation and land use change in Lusaka brought out the following themes:

Impact of land use change on urban residents: According to KRs, the effects of land conversions in Lusaka have been observed among urban residents especially the poor and vulnerable groups. Effects cited by KRs include challenges in accessing affordable housing and land for housing, loss of livelihoods for people whose lives previously depended on farming and related jobs, and land tenure security concerns. Some of the KRs' responses recorded are presented as verbatim:

"In terms of LUCs, people are offered money and bought off their properties and are sometimes allocated land that is far away from their initial houses where it is difficult to access social services and amenities. Within a few years, they go back to the same places and start something informal again, that is if they even moved away from those same areas. There are cultural things/relationships that sustain their lives and so, the far way places do not readily offer such, including basic social amenities and services even when they are not great. Despite being bought off; people are more likely to hang around their original areas" KR5.

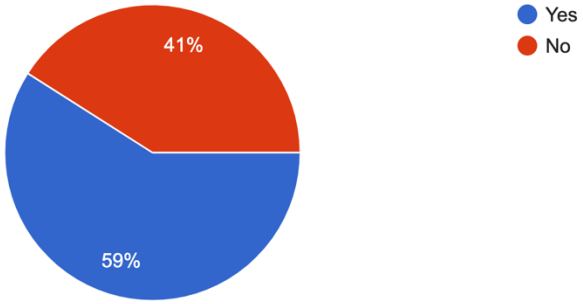
"Land use changes have affected the poor in the sense that some of these poor people were workers of these farms and now that the farms are no longer in existence as farmlands but have now been converted into residential areas. It means that they are unable to earn their livelihoods through farming activities or the labour that they were exchanging for money on the farms" KR2.

"There is the issue of internal displacements where locals have to move from areas that were initially farmlands when they have been subdivided and sold to people with money. More often, sitting tenants cannot afford to buy the land if offered in cases where the land traditionally belongs to them. In the case of Lusaka urban and peri-urban areas, the people that are also selling off their pieces of land end up as internally displaced persons when they move from that place to a totally new place" KR5.

*"After changing land use from say agricultural to commercial/residential, the landowner will now have more money and less work but the people that were depending on this farm as farm workers experience loss of livelihoods and jobs. They now have to adjust and become either house helps or gardeners or, they are forced with no option but to find something else to do"*KR10.

When asked if there were observable LUCs in their communities and the city at large, 59% (n=541) of the respondents answered in the affirmative (Figure 23).

Figure 23: Observable Changes in Urban Land Use.



Source: Field Data, 2023.

On the land use changes that had taken place in their residential areas and the city at large, participants had this to say:

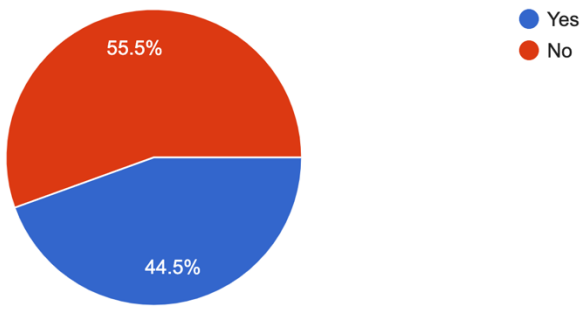
> *"People have built a lot of houses, construction of filling stations, communities are congested due to too many foreign migrants… Because of too many bars we now have junkies (young criminals) that attack and rob us that we now we live in fear, we do not move at night its risky… Noise pollution especially at night from bars that have been built everywhere within residential areas… Our children start alcohol consumption as early as 13 years… no access to good roads in the community due to poor planning of houses, no drainages on the roads, too many garbage dumps due to too many people living in small areas which leads to health hazards"* (RN 009, male, 54, self-employed, from Garden Chilulu).
>
> *"Road constructions, roads have been constructed and now I can move and deliver goods safely… building of malls, I can buy groceries at lower prices because of the coming of malls, easy access to essential foods stuffs because of the coming of shopping malls… and construction of modern hospital facilities, good quality schools. At least we have clinics that are being turned into general hospitals though there isn't medicine in them… Shift in lifestyle and living standards, we are building modern houses because our neighbours are doing it"* (RN 19, businesswoman, 48, from Roma Park).
>
> *"The major change is the increase or doubling of budget towards purchasing of essential goods at home… food and essentials are very expensive now; the cost of living is high…These days we only eat 2 meals, but we used to have 3. Our children do not even know the 16 hours snacks… Life is so hard these days we can't afford to feed our family well"* (RN 189, unemployed male, 41, from Mtendere East).
>
> *"We have unsanitary living conditions made worse by the lack of running water. Our water is unclean, comes out brown, greenish… We bath using a big dish in the house,*

we can't use the bathroom given to us because it's dirty… The dirt keeps getting worse by the day. We don't even have clean toilets and because toilets are full, we use urine pots and throw the urine in the full latrines … The environment is dirty, too much environmental degradation due to high population; the population is growing at a fast rate… there's seasonal flooding in Lusaka due to wrong use of land" (RN 154, employed male, 36, from Ngombe).

"We have changed our social interaction (social media etc) due to cultural exchange learning (learning from foreigners). Too many foreigners have come into our community and too many illegal migrants, illegal building of structures… no land for social recreational facilities… I am now exercising less due to loss of communal recreational facilities" (RN 877, employed female, 38 from Meanwood Ibex Hill).

On the benefits of the observable changes in urban LU to individuals, households and all the communities in Lusaka, 55.5% (n=509) of the respondents indicated that changes in urban LU were not beneficial (Figure 24).

Figure 24: Benefits of Observable Shifts in Urban Land Use.



Source: Field data, 2023.

Respondents were asked to explain how beneficial or unbeneficial the land use changes were, and they had this to say:

"It has not been beneficial at all, too many drinking places, poor waste management, water is a problem we really on the pumps provided by C.A.R.E (an NGO) where we queue up" (RN 127, female, 45, self-employed, Garden Chilulu).

"Here we don't have clinics, police stations and schools so how are we benefiting?" (RN 140, male, 47, employed, from Obama).

"Yes, in some kind way because there has been development of infrastructure especially houses and clinics. Back then, we used to travel a long distance going to the

clinic but now, because of these changes, the clinic has been brought closer, which is an advantage" (RN 115, male, 27, unemployed, from Ngombe).

"Fear of being chased out of the house by landlords because of demand of houses in Kalingalinga, house rentals are high, the price of food is high I no longer save money like I used to, money made is just for rent and food. Rentals are high here because we are competing against businesses, boarding houses and offices… Some landlords no longer rent out an entire house but rooms as that fetches more money" (RN 39, female, 39, self-employed from Kalingalinga).

"We have to pay more money to draw water from our neighbours because we do not have our own borehole. We are not connected to Lusaka Water and Sewerage Company in this area. We pay for water per bucket (20 litters) every day" (RN 152, employed male, 25, from Obama).

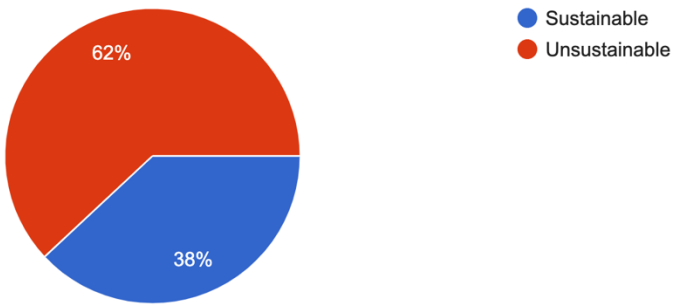
"It is slowly getting inhabitable if nothing gets done… The planning of some roads wasn't done well, they are too close to houses… the opportunity the city provides in terms of jobs does not look at mature people, the focus is just on the youths. What happens to the older people who are still strong?" (RN 81, 44, unemployed, female, from Ngombe).

"All social recreational facilities around Lusaka have been turned into residential areas, no places for agriculture, land has become too expensive to own… Too many people causing crime, noise pollution, poor drainage systems and the increase in food and essential commodities prices" (RN 705, male, 36, unemployed from Obama).

"We are being victimized by landlords because of high demand for houses in Kalingalinga. Any time you can be chased out of the house because, rich people and foreigners are buying plots so that they build boarding houses. We're not benefiting anything instead the foreigners are the ones benefiting" (RN 476, female, 54, unemployed, from Kalingalinga).

On the sustainability of the urban land use changes to the current and future generations, 62% (n=570) indicated that the urban land use changes were unsustainable and offered few or zero incentives to an average urban resident (Figure 25).

Figure 25: Sustainability of Urban Land Use Changes.



Source: Field Data, 2023.

Respondents were further asked to explain and justify why urban land use changes are unsustainable/sustainable. From their explanations, various themes emerged as presented:

Economic growth, infrastructure development and service provision: Respondents emphasised by explaining that urban LUCs came with massive and significant infrastructure development projects like the new Kenneth Kaunda International Airport, Mulungushi International Conference Centre (new wing), and various urban road construction and rehabilitation projects. Respondents further expressed their dissatisfaction with inadequate infrastructure and reiterated the lack of basic social services provision despite the developments taking place in the city. Participants equally complained bitterly about the economic challenges they are experiencing such as the high cost of living brought about by the changing urban land uses.

Other concerns include the devaluation of the local currency (kwacha against major currencies like the US dollar and the great British pound) over the years and, the limited and or lack of access to scholarships/funding opportunities for education, particularly, tertiary education since there is free education up to the secondary level. Impassable roads during the rainy season, inadequate medical facilities, lack of access to clean/running and piped water, poor sanitation, blocked drainages, and lack of solid waste management among others were cited. Some of the respondents had this to say;

> *"Some roads are never maintained, it's like once they make roads, they never look back to check if they are still functioning properly… Some of our roads still have potholes and are not maintained, Other areas still need to be worked on they still use gravel roads which became a challenge during the rainy season… Access to government schools is chaos now, once you're late, there'll be no space for your child, and the demand for education is high but the supply is limited, private schools also are unreasonably expensive e.g. how can*

baby class fees be K3000?" (RN 862, 48, female, self-employed, from Meanwood Ibex Hill).

"The LUC are unsustainable… Our hospitals have no medicine, our city is dirty there is littering everywhere, our town is filled with street vendors… Each community needs to have its own school, clinic and police post which is not the case. The future generations aren't safe, we have no hospital, no police station, food keeps getting more expensive by the day, and transport costs, the same thing!" (RN 635, female, 63, self-employed, from Obama).

"We are too many and there is nothing much happening in Lusaka, we are all fighting to make money but only a few are making it. Traffic keeps getting worse every year even with the new roads. On the new and even old roads, drainage system is poor, and rainwater just makes traffic worse. And, because of too many people, it takes about an hour or 2 to reach town because of traffic. At the end of the day, we get home late most of the time. Traffic causes us to start off earlier than normal from wherever we are to try and beat it" (RN 847, 34, businesswoman, from Meanwood Ibex Hill).

"Some are benefiting from this country, but poor people like us, we're not benefiting anything so they're unsustainable! The rich keep getting richer and the poor, poorer. There is no balance that's why we are stepped on, they can just wake up and start claiming land from the poor. It is only benefiting people with connections and the rich, for us it's by chance, even just searching for jobs it's so hard that even in clinics a patient who knows someone there will skip the people they found to be attended to" (RN 692 male, 45, employed, from Garden Chilulu.

"They are sustainable. Roma Park has very tight security we feel safe and it's a beautiful neighbourhood. We have a conducive environment; our roads are tarred. We live close to a mall and shops, and we even have a place for refreshments within our community where we can hang out with family and friends… We live in a clean environment that has good clean roads, more security. This side of town looks far much better and it's a civilised neighbourhood" (RN 818, employed, female, 36, from Roma Park).

Economic growth, infrastructure development and service provision equally emerged as a theme from interviews with key respondents. Most of the infrastructure development was not sustainable and was a threat to urban residents as expressed by KRs:

"Current LUCs are unsustainable. The aspect of us having filling stations in every corner is getting everyone scared now. We no longer feel very safe having these filling stations right in our neighbourhoods. Also, the mixed land use planning where we have these

business entities/enterprises, and churches coming in, is affecting what was previously prescribed as the normal way of living. We had a community that was for churches or housing units, but now you find that in the middle of your neighbourhood there's a church, and they will sing without regard to people who are resting or sick. These are affecting the socially acceptable standards of life. We love God but don't bring the church right behind my door… And then there are these shops in our community; convenient, but who's regulating them when it comes to the aspect of selling alcohol? These are the same stores where we find our youths, our children drinking from" KR6.

"When it comes to land use planning, the local authority needs to have the plan to strategically allocate land in relation to the various competing needs. With urbanisation comes a lot of people, a lot of needs, so the most immediate need when there is urbanisation is land for residential purposes for low income, middle income, or high-income housing. Where people live, you also need schools, clinics/hospitals and other support infrastructures and that require land. Why then do we have this haphazard kind of planning seen mostly in Lusaka? What is happening on the ground? It appears as if there's no forward planning (vision of how a town or city should be developed) happening. Lusaka is largely characterised by chaotic development. Due to haphazard planning, some houses have been constructed in swampy areas (inevitably prone to floods), others on road reserves, drainage systems etc. From a regulatory point of view, LCC lacks effective development control hence conflicting land uses within the city. Especially common in upcoming neighbourhoods like Kamwala South, Kalinga-linga to have a bar right next door to a church. Elsewhere especially those conversions from agricultural to residential, people with an agricultural background still keep pigs and chickens in their backyards, this conflicts with public health principles. And within the vicinity, you still have residential plots, which is a public health problem. This is unsustainable whichever way you look at it" KR4.

Urbanisation challenges and rapid population growth: Participants expressed concern over how the increase in urban population is a major challenge exerting pressure on land, urban infrastructure and reducing employment opportunities. Respondents lamented over the mismatch between the growing urban population, huge numbers of job seekers, and limited job opportunities. Other major concerns include low salaries, challenges of starting and growing a profitable business and, high unemployment rates. Respondents lamented about the unsustainability of urban LUCs that are rapidly depleting urban land and affecting sustainable development prospects. Participants expressed their displeasure as they explained that:

"The developments taking place are not matching with population growth, so people fight for the incentives, that's why there is corruption with even just getting a job. We have access to schools and medical centres, but they are too congested, and this applies to jobs also e.g. you can see this when there is a Job advert for 5 positions, but 500 applications come through meaning that there is a lot of unemployment" (RN 771, 28, self-employed male, from Roma Park).

"In relation to my area, most places are now becoming highly populated. This area wasn't so populated not too long ago but it is now becoming congested and hard for residents and the government to maintain the environment. For instance, the government as a whole is struggling to manage the city, especially to make it clean for the future generations" (RN 297, 41, female, unemployed, from garden Chilulu).

"Current urban LUCs are unsustainable! The city planning was initially done for only a smaller population so now people have nowhere to stay because the population has grown! Lusaka urban is now highly populated which makes it unsustainable. There has been a lot of mushrooming of shanty compounds which is a problem because there will not be proper housing in most areas and, wherever there is a formal settlement, there is a shanty compound nearby, this leads to social divisions. The settlements in Lusaka are not beneficial for future generations because a lot of them are not planned. This leads to overcrowding. Consequently, bad vices are learned from others" (RN 368, unemployed male, 34, from Ngombe).

Environmental consequences of development: Respondents reported that LUCs in Lusaka are continuously changing the environment significantly. According to participants, LUCs have increased environmental destruction resulting in pollution, deforestation, and ground water contamination among others. Respondents explained that a combination of these factors has resulted in climate change which also comes with challenges such as floods and droughts. Loss of cultural values by the community was also cited as part of environmental degradation too. Respondents lamented that the environment in Lusaka is unsightly, littering is rampant everywhere and, relevant authorities have failed to keep the city clean. Below is verbatim as recorded from some of the respondents:

Our land use is unsustainable, we are carelessly cutting down trees in the quest to develop the city. Our air is toxic, the emissions from the cars and factories are polluting the air… Our environment is being destroyed due to various pollutions coupled with poor urban land planning and management which will be a big problem to future generations (RN 292, 28, businesswoman, from Meanwood Ibex Hill).

"*Developments can be there quite alright but when people (residents) are a lot as it is in Obama and Lusaka actually, the services are not balancing with the population… As a matter of fact, there are more disadvantages than advantages; because we are too many, diseases easily spread, there's low supply of water – borehole water has too much calcium, waste management is poor, and less food production due to lack of land to do agriculture. We can't even plant fruit and vegetable gardens because there is no space anymore … We are experiencing climate changes, it appears that land is being taken up by unnecessary buildings"* (RN 508, 28, businesswoman, from Obama).

"Life is too expensive here food, rentals, services… unlike in the rural areas where you don't think about bills, subscriptions, keeping up appearances… life is simple and easy, coming to town these days is like buying problems. There is poor sanitation, poor garbage management, poor drainage system worse off when others have built on waterlogged areas, they are prone to having floods" (RN 364, 37, self-employed, female, from Roma Park).

"The ongoing LUC don't tackle climate change, instead, they bring about land degradation, environmental and health hazards with no mitigation measures put in place. There is more destruction of the environment and resources due to the greedy nature of people" (RN 330, 42, businesswoman, from Meanwood Ibex Hill).

"The changes have brought damage to the environment… More floods, and people now are being evacuated from their houses during the rainy season" (RN 482, male, 49, employed, from Kalingalinga).

"Because both urban plan policies and sustainable development goals are not followed. We have unplanned settlements near the CBD which means that future expansion of the CBD won't be possible" (RN 452, female, 37, self-employed from Ngombe).

Corruption, inequality, and governance concerns (poor planning and land management): Respondents expressed concern and explained that LUCs in their current state are unsustainable as they are characterised by poor urban planning and replanning. Respondents further expressed concern over the depletion of land in Lusaka and how that impacts sustainable urban development. According to participants, corruption is one of the major hindrances to the proper allocation of resources to all urban residents. Respondents also explained that LCC was somewhat ineffective in implementing and monitoring urban LUC policies. Noting the absence of strict measures of garbage disposal and solid waste management, respondents explained that:

"There is no order, we have good laws yes, but no enforcement. Anyone is free to build illegal structures anywhere, landlords just build anyhow. The environment is becoming uncomfortable for the habitation of people. Land in Lusaka is not properly managed because it only favours those with money and if you don't have money, then you will keep on being a spectator on land-related issues, there is too much corruption too in land issues" (RN 8, male, 50, unemployed from Garden Chilulu).

"Lusaka has been poorly planned; the planning wasn't meant to accommodate so many people. The settlements are not beneficial for future generations because a lot of them are not planned. No good land management, town planners didn't do their job very well, entering the shanty compounds you have to leave your car and use a footpath, of course, some places are better… There are too many people leading to overcrowding, causing air borne diseases, generating too much garbage, crimes, street vending, people learning bad vices from others... The planning isn't sustainable for the future generations because they'll even be more people then, how will they live with the poor planning of the city?" (RN 56, female, 30, self-employed, from Roma Park).

"People in offices can't resist bribes, it comes down to the people in authorities they may see the problem, but they have been made mute by a bribe hence the future is in problems" (RN 708, female, 37, unemployed from Garden Chilulu.

Foreign involvement and domination; Respondents expressed grave concern over the role played by foreigners in the development and ownership of development projects and infrastructure such as malls and business entities. This was cited as one of the major reasons why proceeds of development projects are not realised by all Zambians and further lamented that only a few, mostly, the rich and powerful benefit. The ownership of for instance most shopping malls by foreigners, grocery and retail shops in residential areas by Rwandese, and block-making businesses by the Lebanese were given as examples. Participants expressed concern that future generations will wake up to no land and business as they would all have been taken up by foreigners. Respondents further explained that:

"The changes have brought foreigners who are now even abusing Zambians. Most of the developments such as shopping malls, pieces of land and residential units belong to foreigners and the profits realised go to their countries hence, future generations will not have incentives. The Chinese even have their own bank, Bank of China" (RN 173, male, 34, employed, from Ngombe).

"These LUC have caused a high demand for buying of plots. Most people who were living with their parents or relatives do not have where to stay now as they sold off their houses.

Moreover, people are selling houses and plots to foreigners and the rich, hence their children do not have where to stay and will not have where to live. For instance, the rich people are buying off houses in Kalingalinga turning them into boarding houses, which has affected some of the people living in Kalingalinga. Lusaka is losing its sovereignty because most of its land has been sold out to foreigners" (RN 239, male, 65, unemployed from Kalingalinga).

"Too many Chinese people and their products. The substandard products we buy are harmful to our health and sometimes they do not last, they easily get damaged compared to the original it is frustrating to know that you bought something fake. Moreover, they are now everywhere taking up our land since they have money and we don't" (RN 447, male, 31 self - employed from Mtendere East).

My carpentry business is slowly going down because there is stiff competition with the shopping malls that are owned by foreigners. My wife is also struggling with her things because the Rwandese now sell things like rice and potatoes in their shops and are cheaper" (RN 496, male, 49, self-employed, from Kalingalinga).

"LUC in Lusaka has only been beneficial to people with money, foreigners, and politicians because us, even if all these changes come, we don't have the capacity and access to land" (RN 168, retired, 53, male, from Garden Chilulu).

Rural-urban migration and limited focus on rural development: According to respondents, Lusaka is experiencing massive rural-urban migration contributing to its urban population growth. Respondents explained that people are leaving their rural areas citing a lack of economic prospects and Lusaka is seen as the ultimate destination. Below are some of the participants' lamentations recorded as verbatim:

"We don't want to develop other places; we are too focused on Lusaka. If only we can go to other places and develop them, reserve land for farming and grow our own food. It can lead to permanent settlements in those areas and further decongest Lusaka but as it is now, everything is a scramble… There might be room for change, but the system is broken. Even now, we still have people coming to Lusaka to seek employment, following their families, leaving the rural areas and occupying the city and whatnot... this leaves the rural areas underdeveloped. The problem will not be solved if this continues" (RN 917, male, 45, employed, Meanwood Ibex Hill).

"Rural-urban migration is causing overcrowding in the city, there is already excessive building, and it seems everyone is coming to Lusaka and leaving their farms where they used to get free farmed food, but now life has become costly here and not everyone can

manage. Most people end up living in slums because better and conducive places are too expensive even though some don't even make sense. Slums lack basic social amenities and have poor sanitation, septic tanks are not monitored and not all of them are built properly" (RN 846, female, 37, employed, from Ngombe).

"There might be room for change, but the system is broken even now we still have people coming to the city to seek employment, following their family leaving the rural areas and occupying the city and whatnot, this leaves the rural areas underdeveloped and so the problem will not be solved if this continues" (RN 446, 31, self-employed, from Kalingalinga).

Hope for the future: Some respondents expressed optimism for the future as they explained that LUCs were sustainable since they offered employment opportunities to the current generation. Participants explained that future generations stand to benefit from infrastructure developments like shopping malls and markets through various job opportunities. Respondents explained that schools and the advent of free education for instance will eventually produce an educated urban citizenry that will work hard to make things right. Some participants had this to say:

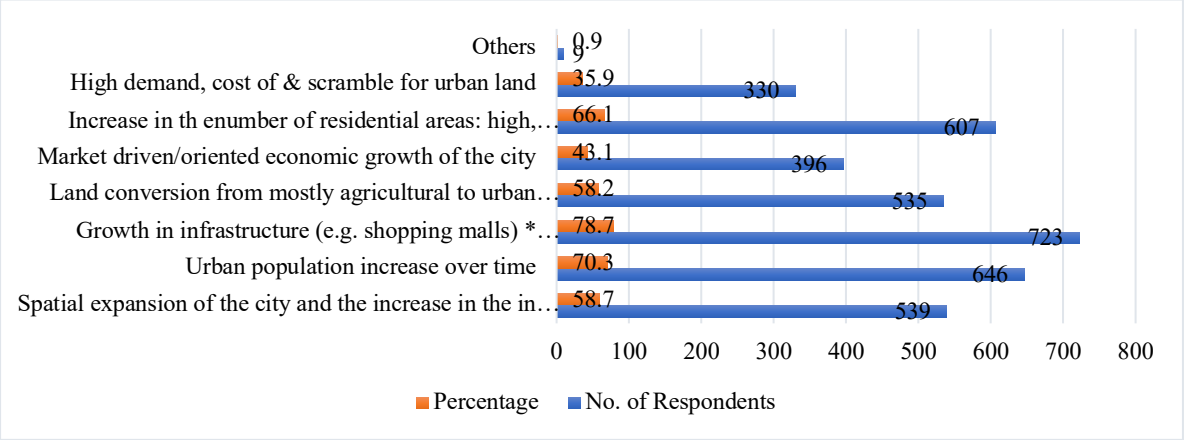
"LUCs are sustainable because the buildings and markets being constructed are long term, future generations will benefit from these developmental works" (RN 463, female, 20, unemployed, from Mtendere East).

"They are sustainable because they are making Lusaka look more developed" (RN 548, 44, businessman from Garden Chilulu).

4.5 Urbanisation, LUC and Urban Land Management

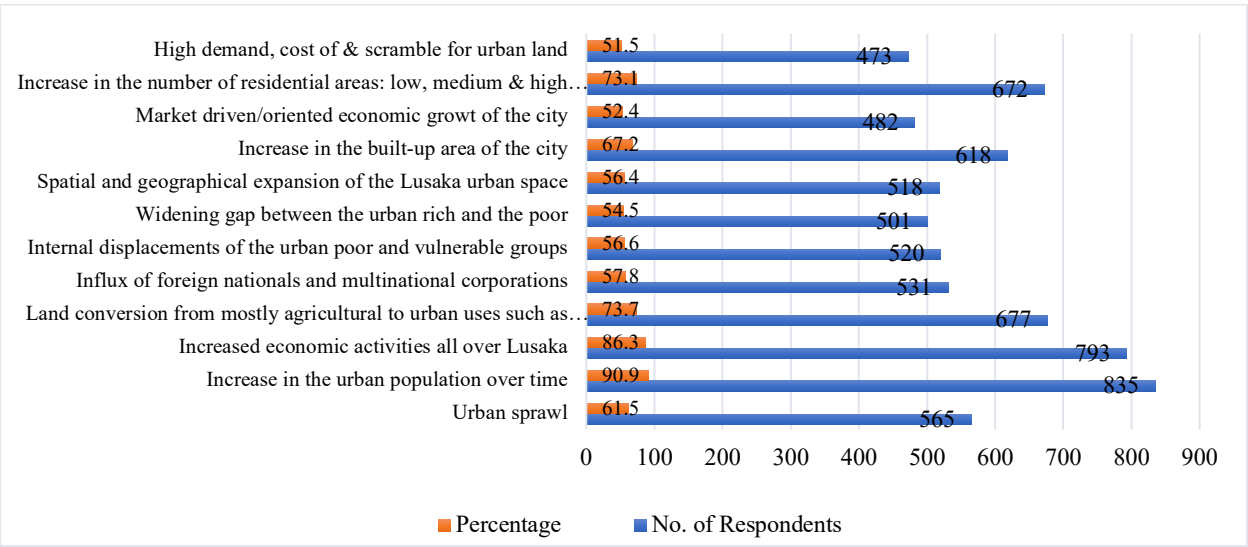
The study sought to explore the respondents' understanding of urbanisation, LUC, and the urbanisation processes observed in their different localities and Lusaka (Figures 26 & 27).

Figure 26: Residents' Understanding of Urbanisation.



Source: Field data, 2023.

Figure 27: Observable Urbanisation Processes in Lusaka.



Source: Field data, 2023.

Other definitions/understanding of urbanisation came from key informants (officials from government departments, institutions and ministries, CSOs, and NGOs) through interviews. The respondents were asked the question, what is your understanding of urbanisation and LUC in the context of the Lusaka urban district? Based on the emerging theme of urban growth and spatial expansion, their responses were as follows:

> *"Urbanisation is the conversion of an area which could have been either pristine in terms of the vegetation where it's not disturbed and then settlements coming up in those areas of whatever nature, either it could be commercial or residential. Then, when it comes to land*

use change, these changes can either be where you have the residential area and then changes to something else, or it could have been the farming area that could have changed to something else, or it could have been a bare area but then it changes to a farming area" KR1.

"In Lusaka, there is a lot of expansion of residential areas that were initially reserved for farming activities, farm plots and farmland currently being converted into residential plots e.g., Ibex Hill and Makeni. These were mostly farming areas and farm plots. All of those have been converted into residential areas. Urbanisation and LUC are very active and happening at a very fast rate in Lusaka. Some of the farms such as York farms are rapidly being converted into residential or commercial such as lodges. We are having a lot of LUCs, we do not know whether all those LUCs are approved by the local authority, but it is happening at a very fast rate. About half the chunk of Lusaka land or farmland was owned by Mr. Galunia and his family. That was farmland, it was a farm and part of that is what has been converted into residential plots through Meanwood Ibex Hill and all these other real estate companies. That all goes to underline the fact that LUC is happening at a very rapid rate and the direction of change is mostly from farmland to residential use" KR2.

"Urbanisation in terms of population growth is the increased urban population. Lusaka being the capital city, has a lot of increased economic activities, everything is being centred on Lusaka and it is attracting other people from outside town; people think that it is in Lusaka where you find good things and make money. This is affecting LU; initially, we had areas surrounding the CBD like Chamba Valley, Garden House etc., that were farms. Because Lusaka has so many people and businesses coming up and the need for different infrastructure such as offices, LUs are changing. Even just in the papers, every day you see those notices for application of change of LU mostly mixed use from agricultural to residential, commercial, and industrial. We are also seeing the change of LU from residential to commercial, more and more mixed use for areas that are close to the CBD. With the change and commercialization of LU, we are even witnessing the putting up of uprise buildings that are equally mixed-use. Initially, due to regulations and privacy issues, uprise buildings were restricted to 2-3 storey buildings in residential areas but now they are even going up to 6 or more storey buildings because the use has changed from residential to commercial. The change is mostly from agriculture to residential or residential to commercial" KR3.

"Urbanisation is basically what Zambia, and many other global south countries are facing where we have more and more people coming to the cities and towns for predominantly

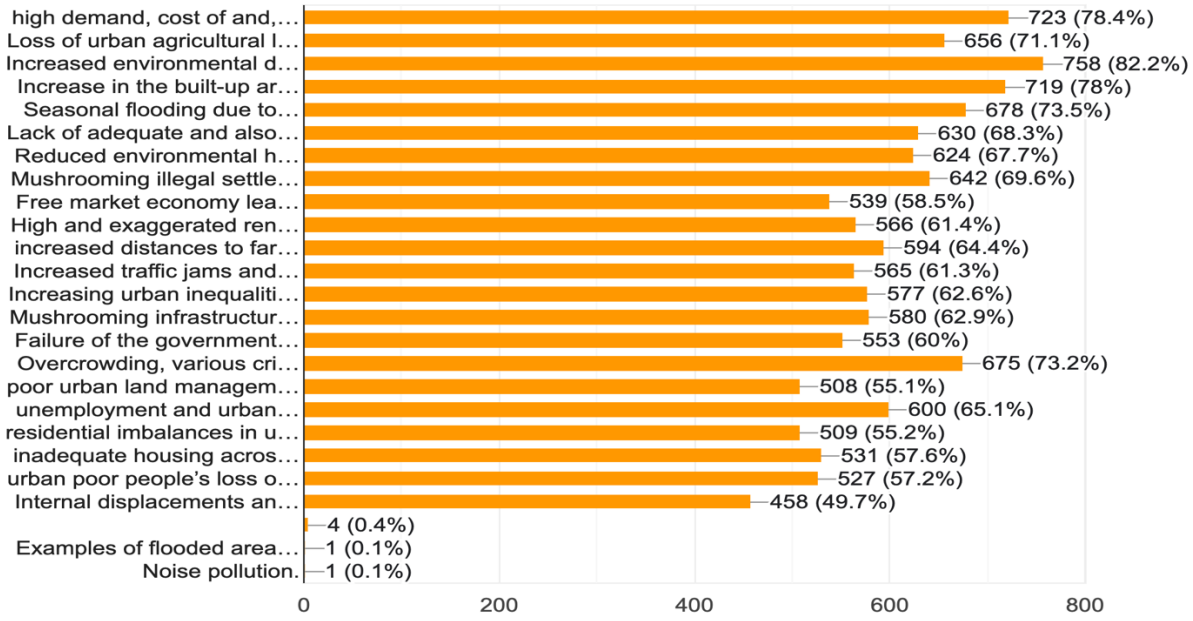
economic purposes. In Zambia, most of this organisation is in the cities along the line of rail and Zambia's urbanisation is 4.23%. It's actually the third highest in Southern Africa and one of the highest in Sub-Saharan Africa. When it comes to land use planning, that is one of the fundamental functions any local authority should execute. The local authority needs to have plans to strategically allocate land in relation to the various competing needs. With urbanisation comes a lot of people, a lot of needs, so the most immediate need when there is urbanisation is land for residential purposes for low income, middle income, or high-income housing. But where people live, you also need schools, clinics/hospitals, you need all these other support infrastructures and that, requires land" KR4.

"When you look at issues of urbanisation in Lusaka, it's about making our areas more urban, what we have noticed is that there has been the urban sprawl that has been happening. For instance, along Great North Road going down to nine/ten miles, all those areas are being taken up. Mostly, those areas were initially farm areas but are now being converted into various uses especially residential but also mixed-use; residential, commercial etc. The areas that were farms are now being gobbled up including the informal settlements that were in those areas. There is a lot of mixed land use change from residential for instance Kalingalinga and the levels of gentrification there, people are being bought off and their houses are being turned into mixed land uses mostly commercial such as office space, trading places/shopping malls etc. Zambia is rapidly urbanizing. The projection is that by the year 2063, we will be at 50% urban and that will continue to about 60% by 2050" KR5.

"Mostly there's been a shift, looking at the comparative analysis of different images over different years, there's a depletion of vegetation mostly towards residential. There's been a lot of change in residential areas especially on the outskirts towards industries like quarrying, mining… We have a lot of changes of LU with industries springing up within residential areas. There's also a change from agriculture to residential especially along the periphery. Initially when the city was small, land on the city fringes was used for urban agriculture but now, people are just subdividing them and applying for a change of LU to residential. A number of them without proper regard to planning standards like minimum road width" KR7.

On the effects of urbanisation on urban livelihoods and communities in Lusaka results indicate increased environmental degradation (82.2%, n=758) as the most prominent effect (Figure 28).

Figure 28: Effects of Urbanisation on Residents in Lusaka.



Source: Field data, 2023.

Respondents were further asked to explain how they had been affected by urbanisation at the individual and family levels. From their responses, various themes both positive and negative emerged as follows:

Economic growth and development: According to participants, urbanisation has brought about development in Lusaka through the construction and concentration of both industrial, commercial and retail infrastructure/activities. Respondents explained that the infrastructure developments around the city i.e. roads, schools, hospitals, drainages, business and commercial properties, public transport and utilities all demand for a diverse labour force. Some KRs however argued that urbanisation has more merits than demerits because cities are the engines of growth everywhere. It's about how best to harness the positive influence that urbanisation comes with, asserted some KRs. Thanks to urbanisation, residents have access to services such as education and healthcare as explained by some residents:

> *"Positive in that out of Lusaka city certain health services can't be accessed anywhere else... proximity of shopping malls, easy access to technology, urbanisation has helped with the sharing of knowledge and technology among people"* (RN 006, female, 35, self-employed, from Garden Chilulu).

> *"It has led to more job opportunities and improved access to jobs and economic activities. Due to urbanisation, we now have better access to many basic social amenities. We have a lot of business activities, there has been improved infrastructure such as roads, schools, public transportation, and communication networks. There is also better access to basic services such as healthcare, education, sanitation, and clean water, which has improved the health and well-being of people"* (RN 321, male, 28, unemployed from Ngombe).

Technological advancements and global connectivity: Respondents explained that Lusaka offers access to information and various innovations by acting as a hub for technological advancements. According to some participants, Lusaka has, unlike any other city in Zambia, adopted modern technologies that reinforce communication, connectivity, and a mixture of various cultures and traditions. Here is what some respondents had to say:

> *"In addition to better infrastructure such as roads, public transportation, and communication networks, urbanisation has improved mobility and connectivity to neighbouring countries and the entire world actually"* (RN 340, male, 23, employed, from Ngombe).

> *"Improved social and cultural opportunities: Urban areas typically offer a diverse range of social and cultural activities, such as museums, theatres, and festivals that have enriched the lives of community members"* (RN 507, male, 33, employed, from Roma Park).

On the downside however, urbanisation has massively produced negatives too. According to the respondents, urbanisation has brought about various ills including overpopulation, congestion and overcrowding, security concerns, environmental degradation, and a strain on natural resources among others. KRs reiterated that urbanisation has gone ahead of planning. From KRs' perspective, poor urban planning has further exacerbated the negative effects of urbanisation as presented in the next paragraphs.

Overpopulation, congestion and health challenges: Respondents complained that urbanisation has led to overpopulation in Lusaka resulting in congestion which has further strained natural resources and ecosystem. According to the participants, Lusaka does not even have agricultural land due to urbanisation-induced population growth and overcrowding in unplanned settlements. Respondents explained how overcrowding is causing the spread of communicable diseases and straining the healthcare system. Respondents further explained that Lusaka is now congested further inducing various challenges including inadequate urban infrastructure, traffic

congestion, housing shortages, gentrification, security concerns and limited employment opportunities. Participants complained about the housing challenges brought by urbanisation and overpopulation as they had this to say:

> *"Has led to the displacement of people, houses, and businesses. For example, where there is Kalingalinga mall, there was once people's businesses and houses. A lot of people are displaced when the land on which they were living and farming is sold to be used for something else"* (RN 386, male, 54, self-employed, from Kalingalinga).
>
> *"The increase in population has also led to encroachment of land leading to conflicts in the community. Some people build houses illegally and are made to demolish them by the authorities"* (RN 151, 33, female, self-employed from Obama;
>
> *"Urbanisation has adversely affected us in a way that it has brought about overpopulation which then leads to overcrowding in homes and this results into increased unplanned settlements. The settlements lack adequate social amenities… Overcrowding in Lusaka has increased pollution due to human activities"* (RN 365, unemployed male, 26, from Ngombe).
>
> *"It has brought a loss of agricultural areas/crop/farmlands which has led to reduced harvest and increased poverty levels, farming activities no longer take place because farms have now been turned into residential areas"* (RN 61, male, employed, 28, Roma Park).
>
> *Cost of living has become expensive; we have lost the spaces where we were doing farming, now using them for residential purposes which is leading to food insecurity in the city"* (RN 367, 24, employed female, from Ngombe)

Key respondents further explained that urbanisation has come with many challenges as much as it is good and had this to say:

> *"The economic part of it is good, people will make money from their commercial and industrial activities but socially, the effects are devastating, and they will follow us for generations on end. Another issue is health, too many complications due to illicit activities. We also have increasing theft incidences; parking spaces are a nightmare in town and places like Kabwata where you have too many drinking places located in the same area… Solid waste disposal anyhow, lack of toilets, and even when provided, people just urinate everywhere. That becomes a health hazard to all people especially residents in surrounding areas, people's wall fences become toilets, their gates, parking slots" KR3.*
>
> "*We're part of the global village due to urbanisation, so globalisation has also impacted the way we look at life, how we plan and how we how we live as a society. Urbanisation*

comes with urban population growth, we have more people coming into the cities and land doesn't grow by the way, so people just try to make use of what they have and also make ends meet from whatever point they are at that particular time in their lives. People are settling anywhere they can. Right now, the population is too high but chasing after very little resources" KR5.

Lusaka's urbanisation is quite depressing. Urban residents are not really seeing a lot of improvements in terms of the community dynamics and service provision. We have rapid urban population growth and regulators who are failing to cope with the rate of urbanisation. Communities are leading themselves without a lot of control from the local authorities. Issues of waste management are getting worse by the day. Access to services; lack of access to water is a continuous thing everywhere you go. Urbanisation and population growth have gone ahead of planning and put a lot of pressure on the limited resources. There is a lot of demand on services and service provision and then the services are not just adequate to meet the demand and the population dynamics" KR4.

"In terms of the effects of urbanisation on urban residents it's twofold. For instance, suddenly there is new development in an area they once lived. That has an impact in terms of their social contacts and interactions. And, because of the rapid urbanisation and population growth, you find that there are some places where communities would meet and mingle but before long, there's concrete coming up. That kind of takes away the space for the interactions of all these communities. Eventually you'll find that that leads to a societal disintegration and also societal decay as what we are now experiencing" KR4.

Social stratification, loss of cultural values and identity: Respondents complained that urbanisation has enhanced income inequalities, and disparities in the city's wealth distribution leading to social tensions and stratification. Participants talked of weakened community ties due to the anonymity that comes with large cities and the fast-paced city life that leads to isolation. Respondents also lamented over the loss of our cultural fabric and our traditional values as they explained that:

"Our tradition is dying; we're slowly losing our culture… even the local news only lasts 15 minutes and the English one lasts longer. We have forsaken our culture, even in our homes, children and young people have no respect for elders and spend more time on the phone than family, they are ever on social media. We have no relationship with our families each one is always on their phone, so the spirit of family has been affected somehow… We don't monitor what our children watch, our schools are teaching sex education at a tender age" (Respondent number 228, 34, businessman, from Obama).

"Increase in population has led to cultural dilution and degradation due to the mixture of people from different backgrounds" (Respondent number 825, Female, 32, employed from Roma Park).

"We have started looking down on our tradition and forgetting its significance, e.g. when we turn on our TVs to listen to music we just see people 'twerking.' This is slowly shaping how the future generations think and now it's becoming normal to see our young girls moving half naked around malls yet that's not our culture, our society just follows trends" (RN 587, female, 36, unemployed, from Garden Chilulu).

"We live in a spacious beautiful compound, our community is beautiful and secure, we have good roads in-between houses and the houses themselves are nice" (RN 601, female, 33, employed, from Meanwood Ibex Hill)

"*It's led to an unconducive environment for us to live in, we don't have a proper place to live in, our houses are too close to each other, sanitation is very poor"* (RN 241, male, 31, employed, from Obama).

Key respondents also explained that Lusaka's urbanisation has come with class divisions within the urban area and had this to say:

"So, when you talk about the urbanisation of Lusaka, its urbanisation that brings about a lot of class plus divisions, we have the upmarket communities or societies, these are societies where we begin to see a lot of improvements as time goes by and then we have the low-income communities where we see a lot of crises arising each and every day. So, when we pick any kind of informal settlement around the city of Lusaka, having talked about the aspect of gentrification, we also have communities that have no access to basic amenities" KR6.

"The sad part of urbanisation is that elite communities such as Kabulonga, Roma, and Olympia are well-planned communities with access to services. The complete opposite is true for the communities in George and Kanyama compounds for instance. Right now, there are certain places in Kanyama which you can't really access with these rains because they are flooded, and those people have no solutions. The people living in Kabulonga et al, have got all their systems; for instance, drainages are well connected and functioning. But if you go to Kanyama and other unplanned settlements, these places do not have drains, so what happens? The clogging of the drainage system starts. People are throwing waste in undesignated places because they don't have the services and money to pay for waste management systems. Furthermore, their drainage systems were either not properly done or are non-existent" KR2.

Traffic congestion and security threats: Respondents explained that overpopulation and congestion in Lusaka have resulted in traffic jams and security concerns. According to the participants, Lusaka has recorded higher crime rates (junkies, armed robberies, thefts, scams etc) that impact on residents' safety and overall wellbeing. Respondents reported being scared of moving at night due to fear of attacks by junkies or their valuables such as phones being stolen too. Respondents' actual words were recorded and presented as verbatim:

> *"With the emergence of unplanned settlements like Ng'ombe, we face challenges with crime and violence due to the lack of proper law enforcement and increase in numbers of gangs. It is not only women and children that are at risk of being victims of violence but us men too, you find that you get mugged even in the early evening around 18:00 hrs*" (RN 447, male, 31, self-employed, from Ngombe).

> "*Urbanisation has led to high numbers of crimes in the community because of the increased number of people and low numbers of employment opportunities. We're not safe due to junkies around this area…Traffic is stressful and unbearable, we're always stuck in traffic, and we spend hours on the road heading to places that can take minutes literally"* (RN 308, 60, businessman, Mtendere East).

Key respondents equally complained that urbanisation has led to an influx of junkies that are now littered around the city threatening the peace and security of the residents. According to key respondents, mixed land use is a security concern. This is what they had to say:

> *"We have the so-called junkies, I don't even know from which planet they came from but there is basically no security, one can be attacked and hacked to death by these junkies"* KR5.

> *"Lusaka lies on dolomite stone; we can't have a lot of pressure in terms of population and activities that take place on such kind of land surface area but unfortunately, there's so much going on. Lusaka has got quarries everywhere; as you go to Chawama, we have the Blue Nile dam/river arising from quarrying activities. There is another one as you enter Kanyama from the industrial area and these have claimed lives. As part of the Urban and Regional Planning Act permitting mixed-use, we now have a lot of mixed LU where, in the middle of a community there's a double-storey building used for offices which kind of threatens security. Kabwata estates for instance, were planned. It has a section for high-rise flats and a road in between the other houses. Now, you find this big double-story building in the middle of a row of houses. What that does is, it compromises the privacy of the surrounding houses and also threatens security. Generally, Zambia is a very peaceful country but let's take it somebody just holds hostage whoever is in that double-storey*

building it means everyone who is down there, their security is compromised because you can easily be surveyed" KR3.

Influx of Foreigners: Respondents complained about the uncontrolled and somehow unregulated influx of foreigners both legal and illegal immigrants. Respondents explained that foreigners are currently buying land indiscriminately and displacing locals even in small-scale businesses that should ideally be left for the locals. Participants explained that the Rwandese for instance, are putting up grocery shops in residential areas along the streets and at every corner. Rich Zambians too are displacing poor locals as respondents expressed their displeasure this way:

> *"It has brought a lot of foreigners, and they happen to be very powerful, have money and can buy huge pieces of land, unfortunately, this seems very wrong! The Chinese people are buying plots at higher amounts and polluting the land. We are being displaced by these activities"* (RN 769, female, 32, self-employed, from Roma Park).

> *"Rich people are going after the poor, in Kalingalinga for example, they are buying off land or plots from the poor to build boarding houses for students... It has brought about insecurities because at any time, you could be kicked out of the house because rich people are buying plots so that they turn them into boarding houses or build boarding houses"* (RN 68, male, 25, employed, from Kalingalinga).

> *"Too many undocumented foreign people, a lot of illegal migrants with no papers from where they come from… and now, foreigners are taking up almost all the business activities. For instance, we have a lot of Rwandan people around and they're just building shops anyhow, every street has a shop belonging to them. Our community has too many shops owned by Rwandans"* (RNs; 409, male, 40, self-employed from Mtendere East; 161, female, 30, unemployed, from Ngombe).

Environmental degradation and strain on resources: Respondents explained that urbanisation, overpopulation, and congestion in Lusaka have led to a decline in the quality of the environment. They lamented that urbanisation breeds environmental degradation through different vices such as pollution whose consequent result is habitat loss and destruction, reduction and scarcity of natural resources and deforestation. Residents expressed concern over the strain on resources that come because of urbanisation and associated anthropogenic activities. Respondents explained that:

> *"Urbanisation has led to environmental degradation such as air, land and water pollution, loss of biodiversity, and urban heat islands, which can have negative impacts on the health*

and well-being of households and communities" (RN 507, male, 34, employed, from Ngombe).

"There is an increase in the built-up areas. As a result, we have lost natural wetlands leading to a lack of natural city drainage" (RN 33, female, 32, self-employed from Garden Chilulu).

"Urbanisation has led to environmental degradation due to the increase in pollution, deforestation, and the depletion of natural resources… Lusaka has no land due to poor planning on how people should build even" (RN 554, female, 21, unemployed, from Meanwood Ibex Hill).

Impact on urban livelihoods: Key respondents explained that some of the effects of urbanisation such as urban LUC, have left the poor and vulnerable residents without an income or the very source of their livelihoods – subsistence farming. Urbanisation, through LUC has also displaced residents from farmlands resulting in the loss of incomes and livelihoods for agricultural workers. KRs explained how this is exacerbating poverty and instilled economic insecurity as recorded during the interviews and presented as verbatim:

"Basically, when you look at urbanisation, the persons who are squeezed into the corner are the poor people because they do not have; a voice, access to basic facilities, a stable income, access to good healthcare and education. We conducted a survey not long ago in Mandevu constituency. It was established that one of the clinics opens at 8AM and closes around 15-16 hours so people have to walk from Kabanana, Mandevu and Kabanana site and service to Chipata clinic to access healthcare. Urbanisation in Lusaka creates opportunities for poor people but the way these opportunities come, don't present an opportunity for an improved livelihood. Poor people end up living in communities where there are no services. Right now, it's a nightmare going into some of these communities; houses are flooding and collapsing. So besides somebody thinking of going to the market or to the streets to do business, they have to worry about the safety of their house first. Unfortunately, it is the poor people and vulnerable groups bearing the blunt of economic opportunities" KR6.

"For the poor, they have engaged in small scale trading such as in perishables, others prostitution but for the children, we are destroying the next generation; children are imitating adult behaviours which they are exposed to; drinking, vulgarity, violence, foul language, etc., and these are the future adults. For instance, along Chilumbulu Rd around 18-19, you will find naked/skimpily dressed kids/adults, people having sex, drunks, and all

sorts of vices. Kids have become junkies stealing and threatening people's livelihoods. We are damaging the future population" KR3.

Shops are emerging in the midst of communities; we now have pubs at every corner and because of high unemployment levels, we have some form of a delinquent youth… We also have filling stations at the corner of each road. We do not have adequate bulk water service supply to our communities, most of us rely on borehole water. These filling stations are digging into the ground for their fuel reservoir tanks. With time, whatever materials they have used will start seeping into the ground. In future, we'll be dealing with diseases that we might not even fully understand nor describe because the compound of petrol if broken down scientifically, has a series of carbons and sulphur. We need proper zoning; we can't have petrol stations everywhere. And safety wise, those are highly flammable products put in the midst of the community. We need designated places for markets and shops, filling stations too; just don't bring them right at our doors. That too has environmental implications, groundwater contamination from the fuel reservoirs as most of Lusaka relies on groundwater, the water is being polluted through seepage from contaminants into the soil" KR4.

Compensation issues: Key respondents complained that even though the displaced people were compensated, the compensation methods were grossly unfair. KRs expressed concern over the compensation methods and explained that residents were given money to leave their land but that this was not the best possible and realistic way of compensating residents especially the poor and vulnerable. KRs explained that:

"Depending on where they would have moved to and the compensation that they have been given, if that money is not enough for them to even buy land or to build, then you've taken away from them three things; their shelter, means of livelihood and, social connections because human beings are social beings. We all need some form of social connection/s, some have to leave so you're breaking their social connections and kind of changing their day-to-day living. It is possible for others to move to another area or community and be able to pick up and live the same kind of life that they lived but not everyone manages to improve their lives around the clock suddenly" KR6.

"Some of these poor people have earned some income especially from the transactions happening in the Kalingalinga area where they are being offered money to leave that land to go and buy land elsewhere. Initially, it could offer them some income, but the question is, how do they handle that income? Giving poor people money in exchange for their land is not always the best compensation for them because in most cases, they may not have the capacity to plan how to invest that resource for sustainable benefits. They get the money,

blow, and spend it. In the end, they have no money and no land. That way, they have completely lost out because the only asset they had was the land, and the land was exchanged for money and the money is wasted and spent, they become poorer than they were before" KR2.

"When you change from agricultural to either residential, commercial, and industrial, there is a hike in the prices of land as everyone is now trying to cash in on the demand for different LU than the original use. Poor people opt to sell their pieces of land and most of the time, they end up poorer than they were before letting go of their properties. They opt to cash in on this income which leaves them rooming the streets a few years down the line after selling their properties. That leaves poor people vulnerable as they are unable to afford the exaggerated pricing of land later on" KR10.

The respondents were asked to explain in detail, their understanding of urban land management. From the responses, the following themes emerged:

Proper planning, development, and sustainable use of land: According to respondents, land management refers to proper planning (both urban and rural) and subsequent land developments including decision-making, intentional organisation, demarcating and using land for its intended use. Many respondents emphasised it as being the sustainable use of land that maintains, conserves, and preserves the value of land and other natural resources as they further explained:

"It is the process of proper planning and deciding where certain developments will be and what activities will be happening in particular areas in a way that doesn't devalue the land" (RN 792, female, 34, employed from Roma Park).

"Land management is how we decide on the planning of the town, where certain things will be and function to maintain the value of land" (RN 597, female 27, employed, from Garden Chilulu).

"Land management is ensuring that the use of land is in a sustainable manner such that whatever activity is being done does not have negative effects on the land" (RN 284, 27, male, employed, from Kalingalinga).

Government and regulatory roles: Respondents explained land management using regulatory roles and functions played by the government in land resources such as regulatory functions, issuing permits, land commissions, planning, and local authorities. According to respondents, land management refers to land ownership (buying, selling, transferring ownership) and

associated regulations, legal and regulatory compliance aspects of land as expressed in their own words:

> *"Land management is how the government manages the land. It has to do with getting land permits from council offices"* (RN 297, female, 41, unemployed, from Garden Chilulu)
>
> *"It's the day-to-day management, development, and administration of land… It is about good leadership"* (RN 351, female, 53, self-employed from Ngombe).
>
> "*Issues to do with buying of land, registration, and transfer… The decision of the government on how they will use the land… controlling of access to land and, country planners are responsible for this"* (RN 608, male, 30, employed, from Obama).

Key respondents further explained that the government and its regulatory agencies face serious challenges that constrain the decision-making process. This results in a lack of accountability in addressing the needs of various stakeholders including urban residents. Key respondents had this to say:

> *"There has been a system failure because of the kind of record keeping at the Ministry of Lands. They have had two systems running side by side, the traditional hard copies and the digital format unconsolidated. Missing or misplaced hard copy records somehow enable duplicate titles for one property since there is no record of a land order on that property. There is also another possibility, that of corruption. We have heard cases where land is already on title and someone else goes there saying that it's on their title too. How that happens, we do not know. For instance, there is a case that happened two years ago where someone was visited by officials from the Ministry of Lands to verify the land because certain things were not clear. They got the title and promised to bring it back since they just wanted to verify what they had at the office. They took that title to the office, then brought it back later but when they did, the plans and all those things had changed on the title and the land had been reduced with a significant part of that land missing as it had been allocated to a different person"* KR10.
>
> *"Poor record keeping where you have the Ministry of Land and the Ministry of Local Government through city councils or town councils both issuing titles and their databases not collaborated or consolidated. You have two players both issuing titles and, as long as they're not exchanging information and comparing notes, two entities to issue titles on the same land. Digitising all the information is a solution that will solve their record issues so that if the records are digital and accessible to all, then no one will have an excuse because the system will indicate the existence if there's no corruption involved"* KR4.

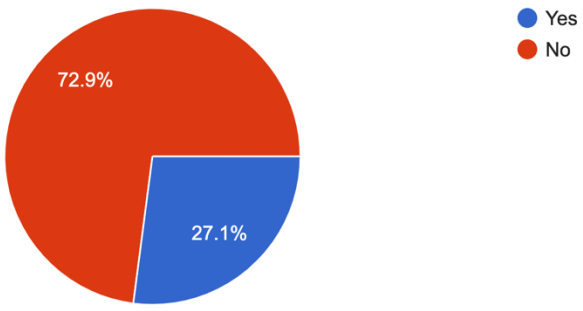
"Most people lack information on LUC procedures, even simple ones, people are not even aware of what to do or not hence they lose out most of the time. We have not done enough on sensitisation especially to the poor people in most of these settlements on most of the procedures on how to legalise their built structures, and get documentation with the council, people are not aware. We have not done much. These are people we can engage and speak to them. And sometimes, the sad part is that we decide to come up with certain developments in our offices without getting onto the ground in the community. We always feel those people don't think! We are totally wrong! They think and reason" KR7.

"The local authorities and the ministry of lands deal with most issues to do with access and records of land. Occupancy licenses and land records are done by the LCC while the Ministry of Lands issues those 99 years land leases. There is also the 15-year lease for agricultural purposes" KR8.

"It is not inclusive; the problem is that a lot of urban residents don't know of the existence of the Regional and Urban Planning Act and how they can participate in urban LU planning and management. This includes people who are quite well informed, they are not aware that there is an Urban and Regional Planning Act. Sensitisation hasn't been done because in certain scenarios, part of the urban land is customary e.g., Mumbwa, Chongwe... The Regional and Urban Planning Act states that even customary land must be planned. Unfortunately, the chiefs are not aware that we are going to enter into planning agreements much less their subjects. There is a need for sensitization of the Act and the modalities of how they can participate" KR10.

The study sought to further explore whether urban land management in Lusaka is good or not. Seventy-three percent (n=668) of the respondents stated that it is not good (Figure 29).

Figure 29: Status (good or bad) of Urban Land Management in Lusaka.



Source: Field data, 2023.

Respondents were further asked to explain and justify their respective responses from which the following themes were derived:

Population growth and urbanisation: According to the participants, there is poor land management in Lusaka attributed to rapid urban population growth and lack of city replanning. Some of the respondents had this to say:

> *"We use the old plan which was fit for a smaller population… The planners only planned for a smaller population but now it's bigger, that's why people end up in the shanties"* (RN 301, male, 36, unemployed, from Mtendere East).

> *"Because of population growth, Lusaka is congested and dirty… we live in the "slums" only a small percentage are better off, the rest of us are suffering from poor living conditions. Our town is very dirty because of haphazard construction, too much littering, poor drainage systems, traffic congestion, and lack of water supply and sanitation. Sanitation is poor, most people (households) are not connected to a sewer line so when it rains, the sewers rise on top of the surface, this smells and it's not healthy"* (RN 212, female, 28, unemployed from Obama).

> *"We have built even in places where we are not supposed to. Already, Lusaka is a rocky area with a poor drainage system. That's why the town floods during the rainy season. People are using land in flood-prone areas to build houses and shops. We are seeing structures being built in areas where there are floods e.g. Kamwala South, Kanyama, part of the Mass Media area... There are residential and economic activities taking place in wetlands. For example, in Kalingalinga, houses near UNZA boundary were built on a wetland, East Park Mall, and Arcades area too is a wetland"* (RN 221, female, 55 unemployed from Kalingalinga).

> *"We are overpopulated, people have left villages thinking they'll find a better life here, but they live in poverty because buying food is expensive here unlike in rural areas where they produce their own food. Moreover, the services and resources needed to make life easy are not enough to cater for the current population in Lusaka"* (RN 850, male, 41, employed, from Meanwood Ibex Hill).

Key respondents explained that Lusaka is undergoing massive LUC because of urbanisation and urban population growth as they had this to say:

> *"We have an increase in the number of residential properties and a reduction of farmland. It is quite evident that the amount of farmland has shrunk because of urban expansion. The population has been growing too, what was thought to be far is no longer far. A long time*

ago, people resisted acquiring land from certain locations because they thought it was far from the CBD. Because of urban expansion and urban population growth, the demand on housing has increased and people are willing to go out of the city and get plots and build. The city has grown because of the expansion that has happened not only for residential but also for commercial purposes" KR2.

"It is the aspect of population growth as well as urbanisation, so we have more people coming into the cities and land doesn't grow by the way, so people try to make use of what they have and also make ends meet from whatever point they are at that particular time in their lives. This includes building in undesignated areas such as wetlands and restricted areas such as forest 26/7" KR6.

Poor leadership and corruption in land management: Respondents explained that there is poor land management resulting from poor leadership and rampant corruption in the land sector. Participants cited ineffective governance and poor leadership as resulting in various irregularities and anomalies such as inadequate urban planning, poor service delivery, lack of proper waste management, and illegal settlements. Respondents also complained that economic disparities and massive corruption have disadvantaged urban residents particularly the poor and vulnerable further resulting in poor land management as they explained that:

"Land-related issues in Lusaka only favours people with money, if you don't have money, you can even be removed from where you are staying and they will give it to anyone with money" (RN 10, male, 36, employed, from Garden Chilulu).

"Land in Lusaka is not used and managed well and also, it is almost done or used up. The majority of it is being used by foreigners… The system has allowed so many foreigners to own businesses in Lusaka. Foreign nationals have the biggest portion of powerful investments and why not because they have the money… the future generation will find itself being indirectly ruled by foreigners" (RN 494, female, 26, employed from Kalingalinga).

"Too much illegal land allocation and corruption which may lead people to be displaced. Too many land disputes as a result of illegal land allocation... The council is not doing their best, they are not doing well where land issues are concerned, too many illegal settlements around Lusaka" (RN 354, male 45, employed, from Obama).

"The management of land in Lusaka urban is not good because of poor leadership" (RN 347, female, 49, unemployed, from Ngombe).

Key respondents also explained that urban residents encounter complications in land and related issues characterised mainly by duplicate land titles, inconsistent records and land tenure security. KRs emphasised the need for a reliable and secure land management system through forward planning to ensure the protection of the rights and privileges of all urban residents as had this to say:

> *"There is a lack of appreciation of the need to plan ahead of time because right now, development is running ahead of planning… And some of these things are happening because of the abuse and monopoly of power/positions/influence by the ones holding authority and power. That level of disregard of policy framework is the one that is creating a lot of damage to the country. Since the population is too high and seems to be chasing after very little resources, the powerful are trying to acquire as much land as they can for themselves. Others feel the need to have connections to that and that person so that they can get what they need. And then, you also have a group of people who simply say, as long as nobody can see me, I'll get it for myself. This disadvantages the urban poor and vulnerable at the end of the day"* KR6.

> *"When you look at the Urban & Regional Planning Act, it seeks to make sure that all places and all communities are well planned. What is missing is the implementation, but then again, we also have the private investors who are going into these places targeting mostly roads that have a high human traffic where they're buying off land from communities and putting up different infrastructure developments there. The thing is that those poor and vulnerable people end up displaced internally and their lives are changed forever"* KR2.

> *"The aspirations of economic growth and those of environmental conservation are always parallel, never in tandem. The possibility is that some of these developments that compromise environmental wellbeing started sometime back before the current law came into effect such that it becomes difficult to approve or disapprove since the law cannot be applied retrospectively. It's already there so now what you do is that you just go in now to start enforcing certain measures or conditions to ensure environmental safety and wellbeing. It's an issue of developments being there before the law, but the planning comes after"* KR1.

> *"The land policy explicitly only recognises the title deed as the only form of security or secure tenure, it does not recognise the occupancy licenses and the traditional land holding certificates. But then, if you're going to give a title to a person who's living in Kanyama for instance, who is entitled only to access to the dwelling so that the surrounding of their dwelling place can be used for other purposes either upgrading or*

other services, then you give them the title, what that implies is that anything that you want to do may demand compensation. You'll have to give them because you are trespassing on their land so now that is going to create a disaster in future!" KR3.

Environmental pollution and climate change: Respondents complained that land in Lusaka is not well managed due to various factors that have resulted in environmental pollution. The interaction of factors has resulted in environmental damage that is resulting in climate change and global warming. Participants had this to say:

"We have too many cars on our roads, they cause carbon emissions in the air and pollute it. Trees are slowly getting extinct, most people in Lusaka have no trees in their yards because there is no space" (RN 411, 41, male, self-employed, from Kalingalinga).

"We have poor mindsets as Zambians, you find cars moving on the road and people still throwing litter outside the window. How can we avoid environmental degradation like that?" (RN 848, 36, female, employed, from Roma Park).

"Lack of trees due to cutting them down creates less shade and less evapotranspiration to help cool the air… Meanwhile, groundwater quality has been affected because of rampant buildings, we are not supposed to build on water collection and recharge points, the water mixes with impurities, and we end up with contaminated borehole water in Lusaka" (RN 908, 51, self-employed, female, from Meanwood Ibex Hill).

Key respondents equally explained that Lusaka is experiencing various key environmental issues due to poor land management resulting from urbanisation activities, urban population growth, and lack of forward planning. KRs went on to say that:

LUCs are a requirement for population growth, in its quest, there's demand for land for settlements and economic growth which drives industrial development. The economy is growing, so, if one wants to do agriculture or put-up infrastructure such as shopping malls or business premises and they buy a piece of land, they'll just get rid of the trees by cutting them down because they don't want them. Instead, they want to plant and possibly settle there so they get rid of the trees leading to deforestation. With economic development and population growth, people just go and construct houses in areas that are not even suitable for human habitation resulting in unplanned settlements and eventually environmental degradation and associated ills" KR3.

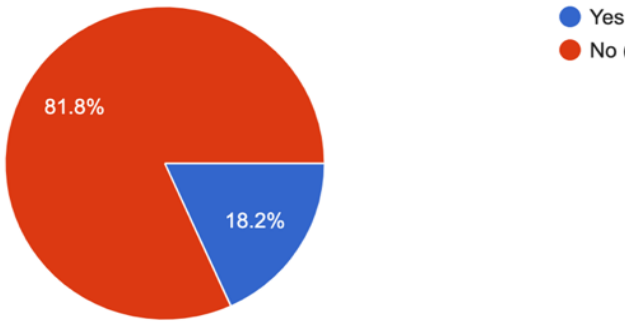
"There are certain areas that are mixed land use; residential, commercial, industrial, literally everything in one place. There is no care for natural resources. We always advise against certain projects that do not consider the plight of our natural resources/natural factors, but people still go ahead. An example are the developments that have been done

in the Mumana area along Great East Road, it floods when it rains, and the road gets blocked. Equally, people construct houses in wetlands (e.g. Kamwala South area) during the dry season and cry foul when the rainy season comes. One tends to wonder why people would play victim in such instances because in the first place, they are not even supposed to put up structures in wetlands. Prevention is better than cure! There is need for us to promote smart growth which considers the natural resource/s around an area. This is contained in a document called the Conservation Value Map of Zambia. This allows planners to practice forward planning. That way, we avoid disasters in advance." KR1.

Stakeholder involvement and participation: Key respondents echoed the importance of involving and engaging all the concerned stakeholders in all stages of LUC and urbanisation processes. They reiterated the need to include them in the decision-making process starting with policy formulation through participatory approaches. This, according to KRs will ensure the formulation of policies that reflect the needs, concerns and aspirations of the communities and everyone involved.

The study further sought to find out if respondents are sensitised whenever there are potential urbanisation and land use changes in their community. According to the results, 81.8% (n= 750) indicated that they are not sensitised (Figure 30).

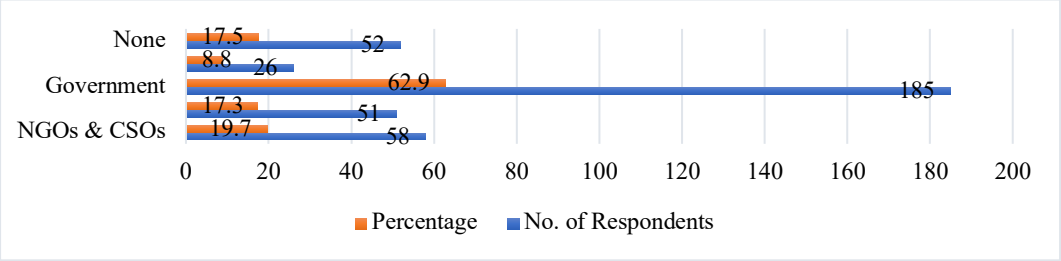
Figure 30: LUC Sensitisation of the Community on LUCs.



Source: Field data, 2023.

Responses on community sensitisation agents, 63% (n=185) cited government and 19.7% (n=58) NGOs and CSOs (Figure 31).

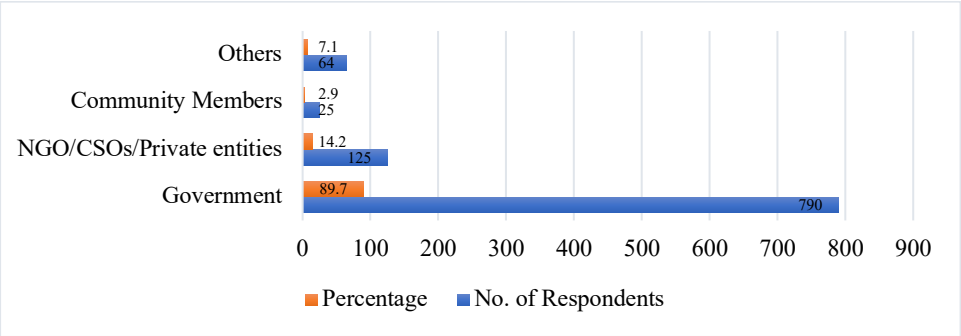
Figure 31: LUC Community Sensitisation Agencies.



Source: Field data, 2023.

The study was equally interested in finding out where participants report land use change-related queries/issues whenever they arise. Ninety percent (n= 790) cited the government while 14.2% (n=125) private entities, NGOs, and CSOs (Figure 32).

Figure 32: Residents Reporting of LUC and Related Issues and or Queries.



Source: Filed data, 2023.

4.6 Coping Strategies to Urbanisation and Urban Land Use Change.

The study further sought to explore respondents' copying strategies to urban LUCs and why they particularly employ those strategies. From the participants' responses, the emerging themes are presented:

Acceptance, resilience and resignation: Many of the respondents expressed a sense of resignation and helplessness to the ongoing LUCs in their respective communities and the entire city. Most participants explained of having no option but to gradually accept, survive and adapt to LUCs as imposed on them by the local authorities and the successive landowners. According to respondents, adaptation, resilience and resignation are key coping strategies as explained through verbatim:

"By just accepting that we are vulnerable people who can't afford certain things… accepting whatever the local authorities bring because if you oppose you can place your life in danger. So, we live with it as it is, at times we just wake up and find structures being built. We have just accepted that because we don't have where to go and from the look of things people just do what they want to do, and we just look on. We can't do anything apart from waiting maybe things will get better in the future" (RN 5, female, 38, unemployed, from Garden Chilulu).

"We stay positive and think of the benefits e.g. we came to the city so that we get access to good medical care, otherwise it's much better in rural areas. This coping strategy helps us to manage to live in the city, otherwise one can be perpetually stressed with these changes" (RN 859, 47, self-employed, male, from Meanwood Ibex Hill).

Economic and business strategies: Respondents explained that they have had to look for additional sources of income through employment or an extra job/s as one source of income is economically unsustainable now. Participants reported adapting their existing businesses or starting new ones including renting out their structures and or diversifying their economic activities to survive. Some of the respondents explained that:

"At the household level we have reduced on the quantities of goods we buy, for example we buy 12kgs of mealie meal instead of 25kg. I have also reduced, on the goods I order for sell, because if I order more, they will go bad because there is competition everywhere especially from Foxdale mall. I chose this coping strategy because it enables me and my family to survive" (RN 160, female, 30, self-employed, from Ngombe).

"We are doing business to meet the high prices of goods and services. We are renting houses per room to generate more income. In fact, with the coming of learning institutions in our neighbourhood (UNZA, Chreso, UniLus among others), accommodation, and more so, boarding houses are on high demand. We are now renting bed spaces instead of an entire house to one family as this allows us to make more money. This coping strategy is good for my family, at least I am able to take care of my family through this business" (RN 477, unemployed female, 65, from Kalingalinga).

Religious beliefs: Some of the respondents referred to their religious beliefs and the grace of God in their lives as a coping strategy. Participants further expressed how their faith in God suggests that they draw their strength to cope with LUCs from their faith, a coping mechanism that is beyond physical and practical strategies. They explained that keeping their faith in God has kept them going and hoping for a better future someday and had this to say:

"We live in the slums because we can't afford elsewhere, we continuously rent because we can't afford to buy the desired land… we're managing only by the grace of God" (RN 603, male, 35, unemployed, from Mtendere East).

"We are coping by the grace of God. We chose this coping strategy because there is nothing else that we can do!" (RNs: 212, unemployed female from Obama; 228, self-employed male, 40 from Mtendere East; 530, 30, self-employed male from Garden Chilulu; 880, female, 34, unemployed from Meanwood Ibex Hill).

Heightened personal and household safety: Respondents reported putting in some heightened security measures at personal and household levels to try and stay safe. Measures include installing electric fences, moving to secure neighbourhoods, hiring security guards in response to potential risks, locking doors even during the day, and avoiding moving at night to avoid attacks by junkies and thieves among others. Some of the respondents explained that:

"Most places lack security and as a way of coping, I moved to a gated community because it's well protected… we're fortunate to live in this part of town because here we do not have such issues and yes, we moved here to avoid such" (RN 54, businessman, 33, from Roma Park).

"We have built an electric wall fence to protect the property from thefts and armed robberies. We keep the doors locked even when we are inside the house as a security measure, our area has too many petty thieves too. We equally avoid moving at night as there are too many junkies so for fear of being attacked, we try and get home as early as possible" (RN 577, female, 35, employed, from Obama).

Environmental awareness and practices: Some respondents explained that they engage in community awareness of LUC and its effects on households, communities and livelihoods. Participants further explained how they mobilise their communities to clean up their areas time and again, pay for local waste collection as a response to limited government intervention. This has somehow helped them to cope with the shifts in LU. Community engagement and participation, unity, and a sense of shared responsibility have worked as coping strategies at the community level as explained by some respondents:

"We advocate for our community - speaking out and advocating for the needs and interests of our community. This includes engaging with local authorities, participating in community planning processes, and organising protests or other forms of public action" (RN 367, female, 24, employed, from Ngombe).

"As a household, we involve people who are willing to help us throw the garbage provided you give them a little something, ba ma bin (local garbage collectors)" (RN 520, male, 40, employed, from Obama).

Information, Awareness, and Education: Some respondents explained that they stay informed and up to date with LUC taking place in their localities and Lusaka at large. Some respondents resorted to taking their children to school as they consider it as a better coping strategy. Respondents further argued that educated people possess greater skills and means (such as financial capacity) to cope and adapt to urban land use change hence the decision to send their children to school. Some of the participants had this to say:

"We stay informed by keeping up to date on the changes in land use and planning policies in our area. We also attend community meetings, read local news, and engage with local authorities to understand how these changes may affect our household and community. We attend community meetings which help us in staying informed and know what we'll do to cope with the changes beforehand" (RN 373, female, 29, employed, Mtendere East).

"We take our children to school; education can take you to another level. We hope that they will do better and cope better with these LUCs in future. It's a good coping strategy because education gives hope and changes things" (RN 402, male, 46, self-employed from Kalingalinga).

These are the findings of this study as collected from urban residents in the selected areas of the Lusaka urban district and the key respondents from government ministries, agencies, authorities, and different NGOs and CSOs.

4.7 Summary

This chapter has presented the findings of the study that was conducted in the seven selected areas of Lusaka urban district on the impacts of urbanisation and urban land use change on urban residents. Empirical evidence has demonstrated that Lusaka urban district has undergone vast transformation in its landscape over the thirty years period under study. The changes have mostly been from bare, forest, grassland and agricultural land to mostly residential and commercial purposes. This has inadvertently left a trail of impacts on the city's landscape, form and shape but more so, on urban residents. Most of the impacts have been felt mostly by the urban poor and vulnerable who lack the financial means to survive these changes and still retain their rights to the city. The next chapter

(five) presents an analysis and discussion of the study results based on the objectives, aim and findings of the study.

CHAPTER FIVE

ANALYSIS AND DISCUSSION OF STUDY FINDINGS

5.0 Overview

This chapter presents an analysis and discussion of the findings of this study on assessing the impacts of urbanisation on land use change conducted in the Lusaka urban district of Zambia. The analysis and discussion of the study findings was guided by the aim and objectives. The discussion starts with the participants' demographic information, followed by an analysis and discussion of the first objective. The first objective forms the basis of the information obtained for the subsequent objectives. The second and third objectives are also analysed and discussed respectively.

5.1 Participants Demographic Information

The gender of the respondents formed part of the demographic information collected for this study. In assessing the impact of urban LUC and urbanisation on the urban poor and vulnerable people's rights to the city, it was extremely important to recognise how many males and females participated in the study. An indication of the gender representation in the study was imperative since gender is considered an indispensable mediator in understanding human perception and interaction with their environment (Xiao & McCright, 2015). The gender of respondents was essential to the study as it provided the study with a gender description of the study respondents. The gender of respondents equally provided a representation of the study population of urban residents who live in the same areas and are affected by the ongoing land use changes, rapid urbanisation and urban LUC, and the shrinking urban spaces and the impacts on their livelihoods.

Gender representation has serious policy intervention implications that can be sustainable when both genders are represented hence the importance of getting views from both genders. This study had equal representation of male and female respondents meaning that the gender representation was statistically sound. This further entails a lack of inherent gender issues in the resulting perspectives since there was equal representation of both males and females. Monde (2023) argues that men and women view the environment and the associated effects differently. Consequently, women tend to be more concerned over the evolving urban LUCs

and rapid urbanisation from men even if they live in the same area/locality (Xiao & McCright, 2015). This is one of the key reasons why representation from both genders was cardinal.

In order to take note of the different age groups that made up the respondents for this study, respondents' age groups were also considered. The consideration of different age groups within the study sample was essential bearing in mind that different age groups consider and relate with their environment differently, an assertion that Xiao and McCright (2015) equally point out. According to the results presented in chapter four, it is worth noting that the majority (over 50%) of the respondents were youthful or in their mid-ages, an indication of the population distribution in the city. Leavy (2022), Kivunja and Kuyini (2017) assert that different age groups consider their environments differently hence the need for and importance of the representation of different ages. It can for instance, be argued that the older a person is, the more LUCs and urbanisation processes they have observed or witnessed over the course of their life compared to a much younger person. Chances too are that the older a person, the longer they may have lived in a given locality/community. Saunders et al. (2012) further point to a highly significant positive correlation between a respondent's age and their environmental awareness, perception, understanding, and appreciation. It was thus, imperative for the study to collect data on the respondents' age groups as a measure aimed at ensuring that respondents have been residents of their particular communities and the city long enough to observe and witness LUCs and urbanisation process.

Demographic information was crucial in the identification of disparities, similarities, trends and patterns across different demographic categories of this study. It furthermore helped in the understanding of the residents' socio-cultural, economic and historical context as failing to understand the social-cultural setting of target communities can result in the wrong target population, wrong study findings and interpretation (Saunders et al., 2012). Wrong study findings and interpretation will consequently have wrong policy interventions which will ultimately undermine any sustainable urban development efforts. This would further affect the realisation of SDGs particularly SDGs no. 11 as UN-Habitat (2020) emphasises that no one must be left behind. Leaving no one behind implies getting views of both male and female respondents including other social groupings on urbanisation and urban LUCs and their impact on urban livelihoods and residents' rights to the city. Concerted views, perspectives, knowledge, conceptualisations and analyses form the basis of sustainable urban LU and urbanisation policies and, land management that does not take away the rights to the city of the urban poor and vulnerable and their very livelihoods. Creswell and Clark (2017) argue that

such information can most importantly help in policy interventions where tailor-made policies and interventions can be developed and implemented with specific targets thereby saving resources and time.

The study also collected information on respondents' employment status and their major sources of income at that time. Respondents' employment status was essential to this study as it gave insights into the distribution of employment and employment status of individuals and communities' contribution to urban economies and urban economic dynamics. As the ZAMSTATS (2023) asserts, residents' employment status reflects the prevalence of various available livelihood and sustenance strategies adopted by a plethora of urban residents, particularly in Lusaka. Furthermore, the employment status of residents has a direct influence on individual and community levels of income and overall wellbeing (Todaro & Smith, 2020). This directly informs the basis of assessment for income disparities intra and inter urban areas and the implications for inequality, poverty and social inclusion.

Employment status information was cardinal in this study as it is intertwined with urbanisation processes that encompasses LUCs, spatial expansion and patterns of economic activity in Lusaka urban. For instance, the concentration of employment in one part of an urban area will inevitably influence transport and infrastructure planning and, LU zoning (Nuissl & Siedentop, 2021). This is in accordance with Hoyt's sector model that explains city expansion that mostly takes place along the major transportation arteries of the city (Hoyt, 1964; Mekara, 2020). Lusaka has grown outwards from the CBD as outlined by the sector model of urban land use, city expansion and development. To promote sustainable urban growth, it is imperative to understand the symbiotic relationship between employment status and the socio-economic development of Lusaka through the collection of employment status information in the context of this study.

Moser et al. (1998) argue that an individual's employment status does affect their social cohesion to a greater extent. Stable and secure employment offers and promotes mental health and wellbeing and further enhances social inclusion and community resilience. The opposite of this scenario leads to mental and psychological distress, social isolation, and economic stress hence the importance of understanding residents' employment status. Most importantly, data on the employment status of residents helps to inform policy formulation and other intervention measures that are tailor-made for the intended audience/communities as echoed by Creswell and Clark (2017), Saunders et al. (2012). Such policy interventions will be deliberately aimed at fostering and promoting social inclusion, sustainable urban livelihoods and development

thereby leaving no one behind and ultimately achieving sustainable cities as per SDG no. 11 and Africa's vision 2063 as set out by UN-Habitat (2020).

Information on individual households' major source/s of income was collected as part of the demographic information for this study. Household income measures the available resources to a household and further provides valuable and essential insights into respondents' socio-economic status. This is a fundamental demographic variable that inevitably affects different aspects of an individual's life and wellbeing including their consumption patterns, health status outcomes, and education (Todaro & Smith, 2020). For instance, urbanisation does affect urban LUC which has significant implications on urban livelihoods and local economies (Li & Siame, 2020). Knowledge of the relationship between these variables provides valuable insights into how changes in urban LU impacts on income generation and urban food security where the majority of residents are dependent on agriculture for income and employment. In this study, an assessment of individual household incomes provided a measure of the vulnerability and resilience of particularly, the urban poor and vulnerable to urbanisation, urban LUCs, environmental and socio-economic factors.

An assessment of household incomes helps by providing essential information that offer discernment into income and economic inequalities within the Lusaka urban area. Todaro and Smith (2020) argue that income inequalities highlight the disparities in economic opportunities and subsequent wealth accumulation of individuals, households, and nations at large. An understanding of these disparities is needed to address issues that border on social injustice and the formulation of policies addressing the same. Knowledge and understanding of individual household incomes is important, particularly to policy makers and urban planners in the formulation of targeted policies and tailor-made interventions that address the specific needs of different community members belonging to different income brackets (Thuo, 2013). For instance, government social welfare programs might be prioritised over job creation policies if the majority of the population relies on government assistance and not wage income and investment incomes (Todaro & Smith, 2020). According to Simwanda et al. (2021), demographic information including the main source of household income is used by researchers in predictive modelling and forecasting of future economic trends, urban LUCs, urbanisation and socio-economic outcomes.

The role of education in determining the types of jobs available to urban residents can never be overemphasised. Higher education attainment levels translate to greater knowledge, skills and abilities possessed by an individual that influence the availability of employment

opportunities, livelihood options, socio-economic status, and income levels (Todaro & Smith, 2020). For instance, professional and managerial jobs are mostly a preserve of the highly educated residents while unskilled jobs are reserved for the uneducated ones. Understanding the education attainment levels of the respondents was of paramount importance to this study as it provided data on human capital potential within the Lusaka urban district population. An understanding of the intricate relationship between individual livelihoods and education attainment levels is crucial in addressing sustainable urbanisation processes, unemployment, underemployment and urban poverty. Education helps to alleviate poverty and advocates for the social inclusion of all urban residents, an aspect that is overemphasised by the critical urban theory as cities move towards planetary urbanisation. Overall, higher education attainment is analogous to improved quality of life through better employment opportunities and higher earning potential (Mwanza, 2016).

An assessment of residents' education attainment levels helped this study to recognise disparities in the quality of and access to education and its associated socio-economic benefits. This data can be used to help with the formulation of deliberate policies aimed at addressing social injustices, social exclusion and class divisions and further redirecting resources to where they are needed the most (Todaro & Smith, 2020). This might include allocating resources for improving school and vocational training quality and, education equity at all levels. An understanding of the education attainments of residents might equally inform and promote sustainable and inclusive urban livelihoods. Education attainment levels have an influence on urbanisation trends and LUC patterns where the highly educated are more likely to advocate for and participate in better and sustainable urban land use and management planning that does not compromise urban livelihoods. Education attainment levels of residents to a large extent, help to promote inclusive urban development and inform policy formulation and targeted interventions aimed at addressing certain identified socio-economic barriers.

The type of accommodation that residents occupied at the time of the study was important demographic information collected for this study. Respondents' type of accommodation helped the study to understand the housing challenges faced by the urban residents particularly the poor and vulnerable since housing options vary among the different socio-economic classes of urban residents. This is consistent with findings by Chileshe (2018) on rapid urbanisation and the challenge of providing low-income housing since independence. Chiwele et al. (2022) equally emphasise on the importance of housing information in their study of informal settlements in the Lusaka urban district. The only way that poor and vulnerable groups will be

taken care of accommodation wise, is through the availability of housing data. This data provided insights into the affordability of urban housing options, an indispensable aspect affecting urban residents' wellbeing, quality of life, and urban livelihoods. Urban housing options can be used as an indicator of amenities (such as access to water, sanitation, electricity, education) and quality of housing available to urban residents as these normally vary between public housing, rented homes, and informal settlements as Collier and Venables (2017) and Bird et al. (2017) asserts. Understanding respondents' housing access is critical in addressing housing inequalities prevalent in urban social strata as well as promoting adequate and decent housing for all.

Data on respondents' housing is essential for policy formulation, implementation and urban planning and may help our local policymakers and urban planners. For instance, a significant proportion (about 75%) of Lusaka urban residents reside in overcrowded informal settlements (Chileshe, 2018; Chiwele et al., 2022). Data on housing will help to come up with slum upgrading programs that offer decent and affordable housing options that enhance urban livelihoods and the quality of life for all. Furthermore, the type of residents' accommodation has inevitable social, economic and environmental impacts on residents. This is emphasised in similar studies conducted elsewhere by Kombe (2005) in Tanzania, Collier and Venables (2017), Bird et al. (2017) in Kenya. For instance, highrise buildings may reduce urban sprawl and ecological footprint while sprawling developments will inevitably lead to urban environmental problems such as pollution, overcrowding, and traffic congestion. Researchers can use data on housing to inform policy on sustainable urban livelihoods, guide urban LUC planning and management, residential mobility patterns, and future urban demands. Understanding these dynamics is essential in any meaningful study that hopes to inform policy on urban LUC, urbanisation and sustainable urban livelihoods that ensure a quality life for all urban residents thereby achieving SDG no. 11 and Vision 2063, the blueprint for the African continent as a whole.

5.2 Lusaka Land Use Land Cover Change from 1990-2020

The first objective sought to create an inventory of the spatiotemporal changes in urban LULCC of Lusaka urban district and some selected areas. These are Kalingalinga, Garden Chilulu, Ngombe, Roma Park, Mtendere East, Obama and Meanwood Ibex Hill residential areas. GIS and remote sensing were used to ascertain the magnitude of the LULCC in Lusaka and the selected areas. The classes that were considered and assessed to determine LULCC

were built-up, bare land, forest, water, and grassland. Results of this study indicate that all the assessed classes experienced a drastic change in LULC similar to what Alemayehu (2016), Frélichová (2014), Hudak (2022), Jew (2016) observed in their respective studies. While the area covered by the built-up land use land cover class increased in size, the other classes reduced in area coverage except for the land surface area covered by water.

Information obtained from GIS and remotely sensed imagery presented in chapter four indicate that land in the Lusaka urban district has undergone massive transformations during the period under study. Most of the land has been converted from bare, forest, crop and agricultural land to mainly built-up mostly for residential and commercial use. LULC analysis revealed that built-up land increased to 80% during the thirty years under consideration. For instance, only 7% of Lusaka's total land surface was built-up in 1990 but had increased to 63.3% by 2020 representing an 80% increase in the total built-up area of the city. An increase in the built-up area indicates a reduction in the other parameters that were equally under consideration and ultimately, a disruption in urban livelihoods especially for the poor and vulnerable ones.

The increase in the built-up area has resulted in the spatial expansion of Lusaka city. The city has also expanded within its confines as there is densification compared to thirty years ago in 1990. As noted by Chiwele et al. (2022), Lusaka's total urban extent has doubled from 17,992 in 2000 to 41, 490 hectares in 2020 implying a 131% spatial increase. Conversely, there has been a reduction in other land uses such as grassland, forest, and bare land. For instance, grass and cropland reduced from 56.8% in 1990 to 16.7% in 2020 representing a 71% loss of grass and cropland. Forest land reduced from 20.6% in 1990 to 11.2% in 2020 implying a forest cover loss of 84%. Bare land reduced from 14.8% in 1990 to 6.2% in 2020 representing a 58% loss of bare land.

In 1990, forest land cover had the highest percentage area size (37.7%) in Lusaka but saw a reduction to the lowest percentage (13.95895%) of land cover in 2020. From 1990 to 2020, there were significant increases in bare and forest land area covers in Lusaka. Similarly, the land area covered by water increased significantly from 0.2% in 1990 to 0.6% in 2020. Water covered the lowest percentage of land cover in 1990, a scenario that changed as the area covered by water increased over the years. For all the land use and land cover classes under consideration, the highest percentage change was between 2010 and 2020. It is worth noting that most of the land is changing use from bare/crop land and forest to built-up as noted by Simwanda (2018), Monde (2023), Hampwaye (2020), Simatele et al. (2012).

Findings of the study presented in chapter four indicate that the land surface area covered by water increased over the thirty-year period alongside the area covered by built-up land use class. This study is of the view that the land surface area covered by water has been increasing in size due to anthropogenic activities particularly small-scale and commercial quarry mines dotted across the city. As argued by Tumbama (2019), mining, in whatever form, results in land use change as large tracts of land are required for extraction and waste disposal purposes. Quarry mining in Lusaka has led to land degradation, biodiversity loss, species extraction and habitat destruction including pollution. According to this study's findings, land degradation that has left large tracts of land open long after the quarrying has been done is a significant effect of the various quarry mines across the city. Over the years, these abandoned quarry mines have filled up with mainly rainwater that has remained stagnant hence the increase in the land cover areas now characterised as water land cover. This is similar to a discovery made by Monde et al. (2023).

Some people might argue that the abandoned quarry mines have been a blessing in disguise for the urban poor and vulnerable who depend on the dams for their everyday water use. The increase in land surface covered by water might even offer a solution to vegetable farming as the water can be used for irrigation purposes. This study is however, of the view that the increase in the land surface covered by water has taken up productive land that is now unavailable for urban use, an assertion shared by (Glaeser & Xiong, 2017). Furthermore, in the recent past, some accidents of drowning and in some cases, losses of lives both young and old were recorded in some of these overly large quarry mines especially the ones located in Chawama and Misisi compounds. See the following links for some of the accidents that were captured by the media. [6][7][8][9][10]

In the case of Lusaka as evidenced by the study findings presented in chapter four, urbanisation and land use changes have not only disadvantaged urban residents in some instances, but they have also led to the loss of life. That is the reason why this study is of the view that urban land

[6] https://www.facebook.com/ZambiaReports/photos/a.651330624984966/3871206692997327/?type=3

[7] https://luganophotodays.photocontest.ch/luganophotodays2018emerging/2621/view

[8] https://m.facebook.com/story.php?story_fbid=734965268302353&id=115252513606968&m_entstream_source=permalink

[9] https://www.facebook.com/Spring24TV/videos/man-retrieved-blue-water-dam-buried/4891819114278938/

[10] https://www.youtube.com/watch?v=0iH3IqA1iCI

use changes must be regulated, monitored and evaluated in order to avoid such unfortunate incidences that mostly affect the poor and vulnerable people. The critical urban theory argues for the urbanisation of cities (Lusaka) coupled with land use changes that are socially and economically inclusive and, will improve urban livelihoods in the long run (Brenner, 2009; Brenner, 2018; Ruddick et al., 2018; Schmid, 2018). Such urban land use change will not only improve the city but will also improve the quality of life and uphold the RttC of all urban residents (Simone, 2020), a prerequisite to the achievement of SDG No.11 and Africa's Vision 2063.

According to this study's findings, the fast-paced urbanisation of Lusaka and its urban population increase have exerted pressure on land through the various urban land use changes. Olorunfemi et al. (2022) are of the view that rapid urbanisation and urban population growth in SSA have given way to increased demand for housing, infrastructures and economic activities. The demand for requisite goods and services led to the spatial expansion of the city (Chileshe, 2018; Chitonge & Mfune, 2015; Simwanda et al., 2020). The spatial expansion and the increase in the urban population has in turn, given birth to urban sprawl which has characterised Lusaka for the longest time now.

From 2000 to 2020, the findings of this study indicate that the built-up area in Lusaka increased from 62% to 70%. These findings are similar to what was noted by Chiwele et al. (2022) who reported that Lusaka's built area doubled in size from 63% in 2000 to 70% in 2020. This doubling in size is attributed to the increase in the urban population in Lusaka and the subsequent demand for more land to accommodate Lusaka's growing urban population. According to the Central Statistical Office (2012), Zambia's population grew by 39% in 2010 while the urban population density increased from 40.6% in 2011 with a projected increase to 46.1% by 2035. Hampwaye (2020) further assert that over 44% of the Zambian population lived in urban areas by 2020. It is this increase in Lusaka's urban populations that has placed a strain on land to the extent of changes in urban land use. The critical urban theory places urban population growth as an inevitable factor and aspect of planetary urbanisation of cities (Brenner, 2018; Brenner & Schmid, 2015). The critical urban theory further recognises that various other factors that influence the growth of urban populations such as rural-urban migration, the dynamic nature of cities and, urbanisation processes. The theory further argues that urban land use changes result from an interplay of factors that knit and weave the urban fabric to produce the urban landscapes that we all know. Land is an integral product of any urban land use change, urbanisation and sustainable urban development.

As pointed out by Todaro and Smith (2020), land is one of the three factors of production without which, no developmental/urbanisation activities and processes can take place. The rapid change in land use over the years has been detrimental both directly and indirectly to urban residents. The urban poor and vulnerable who directly depend on land for sustenance, have over the years lost their source of livelihood due to land conversions. Furthermore, there are various ecological goods and services obtained by the urban poor and vulnerable from the environment in its natural state. According to Monde (2023), LULCC reduces the quality and quantity of goods and services derived from the ecosystem, consequently affecting the quality of life of urban residents. Due to changes in LU for instance, urban residents who relied on the natural environment for their food needs, medicinal and aesthetic benefits no longer derive those goods and services today. This is because, the biophysical environment (forests, bare land and agricultural land) that used to supply the goods and services is unable to do that as the land has been converted into buildings (mostly residential and commercial). This is similar to what was observed in Ghana by Appiah, Asante, and Nketiah (2019), Tanzania by Jew (2016) and Kenya by Alemayehu (2016), in China by Shouying (2019), Wang et al. (2015) and Wang et al. (2012). These studies all assert that ecosystem products have over the years drastically reduced due to agricultural land, forest and mangrove swamps encroachments, and the subsequent change in land use.

The rate and amount of change from mainly bare, grass and cropland to built-up is highly significant that it cannot go unnoticed. Results presented in Chapter Four indicate that most of this land, about 70% has been lost to residential areas construction and household expansion around the city between 1990 and 2020. Land conversions have unfortunately, been at the expense of other land use and land covers such as forests and cropland. The construction and expansion of households has both positive and negative effects on urban residents as presented in Chapter Four of this study. On a positive note, more people now own homes and are rent-free. On the negative side for instance, houses have been constructed in wetlands or natural drainages of the city. This has left some parts of the city flooded every rainy season as the city no longer has natural drains nor adequate drainages to drain the rainwater.

The flooding, according to the study findings presented in Chapter Four, have left not only streets and highways but also individual homes flooded and inhabitable during the rainy season. Areas such as parts of Kalingalinga, Mass Media, Kanyama, Kamwala South and parts of the CBD are subjected to flooding during the rainy season. This has left a trail of property destruction and families have had to move out of their own and rented homes while businesses

have to close or relocate too. This was also noted by Monde (2023), Simwanda (2018), Li and Siame (2020) in their respective studies. In high-density areas, the annual flooding presents other challenges such as overflowing faecal matter mixed with all sorts of waste as the findings presented in chapter four revealed. The resulting consequences are different water-borne diseases such as typhoid and cholera that have been making rounds in Lusaka almost every rain season.

The findings of this study also revealed that the construction and expansion of households across the city has affected groundwater. This is primarily because most areas are not serviced by the Lusaka Water and Sewerage Company (LWSc). And, because houses have been constructed, people have resorted to drilling their own boreholes in proximity to their sewerage tanks as revealed by this study. Monde (2023) has made similar observations and argues that groundwater and other water bodies in Lusaka have been reducing in size due to urbanisation-induced uses. Such uses of water, as presented in this study's findings include among others; house construction and expansion, an increase in the demand for water due to increased urban population and the associated demand, the increase in water consumption per household and individuals, and other industrial and commercial uses. All these interact in such a way that coupled with land reclamation for residential and commercial purposes, the result is a decrease in water supply by both the LWSC and boreholes drilled across the city. A growing urban population, by default, calls for growth and increase in the number and amounts of natural resources that support life such as land and water. Frélichová (2014) recorded similar results in Czechia where urbanisation has been cited as a major reason accounting for the decrease in total water availability in Czechia.

A highly significant loss of urban land to built-up indicates a high rate of urbanisation of the district. Using the critical urban theory lens, Lusaka is rapidly urbanising not because half of the country's population lives in urban areas but because of various economic, social, political and environmental factors. These factors include changes in urban land uses which, according to Schmid et al. (2018), Ruddick et al. (2018), Brenner (2018), is an indispensable aspect of urbanisation. As the results of this study indicate, 80% of the entire Lusaka urban land space is now built-up, the notable change from bare, grass, forest and cultivated land to built-up has taken place during the last thirty years from 1990-2020. Most of the converted urban land has been used up for residential housing signalling an increase in urban population and the subsequent demand for housing land/needs. This scenario, according to the sector model of urban LU, is what has led to the outward and sectoral expansion of the city. As noted by

Simwanda (2018), the original design of the city and its CBD can no longer support the growth in urban population figures and the resultant demands in living space, commercial and industrial amenities within and around the CBD. The critical urban theory explains these changes in land use as results of the due processes of the urbanisation of the city that is ultimately resulting in the global urbanisation of cities everywhere. From the critical urban theory perspective, it is not a question of whether changes in urban land use will occur but that of when and how hence the explanation of the urban LUCs taking place in Lusaka urban district.

5.2.1 Land Use and Land Cover Change in Selected Residential Areas

This section presents an analysis and discussion of the land use and land cover changes that took place in the selected residential areas of Lusaka starting with Mtendere East. For all the seven residential areas that were considered for this study, the results presented in Chapter Four indicate changes in all the classes under consideration. All the residential areas witnessed an exponential increase in the size of their built-up areas compared to any other class of land use and land cover. All the other areas saw a drastic decrease in the other land use land cover classes including a reduction in the land area covered by water in the Garden Chilulu area.

5.2.1.1 Mtendere East Residential Area

The results for Mtendere East presented in chapter four show that there were changes in all the classes of land use land and cover that were considered. The results show evidence of a drastic reduction in all the classes except for the built-up area class which increased tremendously. The increase in the built-up area covered 89% of the entire residential area in 2020 from the initial 0.20% in 1990. The major increase happened between 2010 and 2020. Cropland equally reduced drastically during the 2010-2020 period from 79% to 0.67% in 2020 indicating a -134% reduction. Monde et al. (2023) made a similar observation in their study conducted in Kalikiliki residential area of Lusaka. This is evidence enough that there has been an exponential increase in the amount of built-up in Mtendere East much to the disadvantage of the urban poor and vulnerable whose livelihoods depend on the biophysical environment in its pristine state. Onyebueke et al. (2020) argue that urban developments, mostly the conversion of land from grass/crop land happens at a very fast rate due to urbanisation and urban population growth that place a strain and demand on urban land. Urban developments in turn, compromise the availability of ecosystem goods and services that urban residents get from the biophysical environment when it remains undisturbed. This scenario was equally observed in Czechia by

Frélichová (2014) who observed that ecosystem services and goods had drastically reduced due to urbanisation and urban land use changes and this affected urban residents greatly.

5.2.1.2 Garden Chilulu

All the different classes of land use and land cover change that were assessed for the Garden Chilulu compound indicate that they changed from 1990-2020. Significant changes were recorded with the built-up area that increased by 86.1% by 2020 while crop/grass experienced a -150% reduction from 1990-2020. This was a significant loss of crop and grassland by the urban community, translating to a loss of ecosystem goods and services as well as sources of livelihoods. Monde (2023) argues that both the quality and quantity of ecosystem goods and services produced and derived from the environment is dependent on the nature of the natural environment. Garden Chilulu area can no longer provide ecosystem goods and services as was the case before 1990 due to the increase in its built-up area and reduction in other classes of land cover such as grass/crop land. The reduction in grassland for instance, indicates a reduction of over 100% in the availability of most ecosystem goods and services. The increase in the built-up area of garden Chilulu is a clear indication of the demand for built-up space particularly residential houses. The growing demand for houses is equally an indication of the growth in urban population numbers where outward urban expansion becomes inevitable in a bid to accommodate the growing population figures. The Hoyt Sector model asserts that urban expansion happens outwards due to the growth in urban population and the demand for various urban land uses (Mekara, 2020).

The findings of this study indicate that the amount of land covered by water has been reducing in Garden Chilulu compound from 5.8% in 1990 to 1.20% in 2020. Undeniably, population growth has resulted in urban land use change where residents have even resorted to building and living in proximity to the sewerage ponds, an area that is supposedly protected and must not be built on. Population growth has strained urban populations to an extent of living in hazard-prone areas such as the sewer ponds, an observation that was equally brought out by Simwanda (2018) in their study. The desperation by urban residents to build and settle in the protected area explains the reduction in the amount of water, particularly the sewer ponds over the thirty-year period of study. Turning the area around the sewer pond into concrete dried up the surroundings around the ponds consequently resulting in the pond size reduction. Much as people have settled around sewer ponds and are going about their lives as if nothing happened, Monde (2023) argues that living around sewer ponds is both illegal and most importantly,

unhealthy. Sewer ponds contain significant pathogenic microorganisms that cause harm to human life. This is where laws, rules and regulations are effected promptly to prevent complications to human life and save the environment too. Both the Hoyt Sector model and the critical urban theory in their respective explanations of how urban areas expand outwards have no mention of people building and expanding their areas to unsafe habitats that pose danger to them. With such trends, Zambia will have a hard time achieving SDG no.11 whose core concern are sustainable cities and urban livelihoods.

5.2.1.3 Roma Park

Roma Park had a steady increase in the amount of land covered by built-up during the thirty years period under consideration. In 1990, 54.53% of the total area was initially covered by grassland while 27.38% was covered by bare land. This trend was almost constant until 2010-2020 when Roma Park significantly changed most of its land cover to built-up. The increase in the built-up during this period represents a 71% increase in the area covered by the built-up land cover for the area. For the Crop/grass land initially covered 54.53% of the total land surface area of Roma Park in 1990 but reduced drastically by 2020 to only 27.13% representing a decrease of over 200% particularly between 2010 and 2020. The loss of grass/crop and bare land to built-up in Roma indicates a high rate of urbanisation that has seen major shifts in urban land use. Most of the built-up in Roma Park has been taken up by residential houses, social and business amenities which are also indications of urbanisation of the area. Rapid urbanisation has been taking place in different cities as urban areas have been urbanising at a rapid pace world-wide particularly in the developing countries of Africa and Asia (Lubowski et al., 2008; Nuissl & Siedentop, 2021; OECD/UNECA/AfDB, 2022; Potts, 2012; Wu et al., 2011). The conversion of land from crop/grass land in Roma Park led to a decrease in the amount of land available for agricultural purposes, a bedrock of urban food security. Furthermore, there was a loss in forest cover and inevitable changes in natural ecosystems and the resultant ecosystem goods and services, a finding that was also noted by Hampwaye (2020), Monde (2023).

5.2.1.4 Kalingalinga

The results presented in chapter indicate that in 1990, Kalingalinga was mainly bare land covered with grass land. Bare land covered 42.57% of the total area in 1990 but this reduced to only 2.38% in 2020 representing an area land cover percentage loss of 40%. Built-up land cover on the other hand increased to an extent where in 2020, the total area covered by built-

up was 88.73% of the entire Kalingalinga residential area. The other significant loss was the amount of land covered by water which had reduced by over 57% by 2020. Part of Kalingalinga was initially covered in marshlands that saw a drastic reduction as more and more people settled in the area. The more people settled in the area, the more they built to the extent of building in wetlands/marshlands. The entire wetlands have been built in such that the area is prone to seasonal flooding as the rainwater has got nowhere to quickly drain from. This was also observed by Simwanda (2018), Monde et al. (2023) in their separate studies conducted in Lusaka district. Results of this study indicate what was initially wetlands has now been turned into a concrete jungle and residents are paying a steep price for this, especially the urban poor and vulnerable who have not been able to move from their flooded homes. In a study conducted by Hua (2017) in China, urbanisation was cited as one of the key reasons why the nation's water resources have drastically dwindled in well-urbanised areas.

Most of the land use and land cover change for Kalingalinga took place between 2000 and 2010. What happened between 2010 and 2020 has mostly been the densification of the area and the subsequent change from residential to mixed-use. Kalingalinga is now characterised by mixed land use where most of the initial occupants of the area have been internally displaced to pave way for urban developments mostly commercial entities such as malls and business premises. By 2020, the entire Kalingalinga residential area was covered by built-up land cover at the expense of the other land use and land cover classes that have been swallowed up by the built-up area. Other sections of this discussion shed more light on the ills of these land transformations in Kalingalinga to urban residents with particular emphasis on the urban poor and vulnerable compliments of urbanisation and urban land use change. In their study, Li and Siame (2020) also produce compelling evidence of the land use changes and urbanisation effects on urban residents with emphasis on the poor and vulnerable people in Lusaka.

5.2.1.5 Ngombe Residential Area

According to the analysis of the land use and land cover change results presented in Chapter Four, all classes that were considered for this study underwent some changes. Grass/crop, bare land and built-up underwent significant changes from 1990-2020. Ngombe residential area was in 1990 covered with 55.34% of grass/crop land while bare land covered 38% of the total land surface area. Build-up only covered 11.97% which was by all means negligible. As of 2020 however, built-up had undergone massive change as the area covered by the built-up land cover class had risen to 92.72% which is literally, covering the whole residential area. The increase

in built-up coupled with the decrease in all other land cover classes particularly bare and grass/crop land is an indication of the surging demand for built-up space. About 90% of this built-up space is comprised of residential housing which gives an indication of the increasing urban population and urbanisation activities and processes. The rate of urbanisation coupled with the increase in the urban population inevitably dictates the urban land use changes that take place in urban areas. In their study of Chinese urbanisation trends, (Glaeser & Xiong, 2017) found out that urbanisation dictates how urbanising areas use up their land and in most instances, the urban poor and vulnerable are the most affected by the outcomes of these decisions and actions. Most of the times, the urban poor are left vulnerable by these developments and changes as they lack the financial muscle to counter the effects that include lack of proper access to basic social amenities, internal displacements and absence of land for agricultural purposes. The decrease in the grass/cop and bare land has over the years, taken away the very source of livelihood for the urban poor who have since time immemorial, depended on these spaces to farm and feed their families.

5.2.1.6 Obama Residential Area

According to the results of the land use land cover change analysis for Obama residential area presented in chapter four, all the various classes of land use and land cover experienced some changes for the duration of this study. With the exception of the built-up area, all classes reduced in size while the built-up increased from the initial 0.5% in 1990 to 90.21% 9n 2020 representing a 90% increase in built-up. Initially, in 1990, Obama was mainly a forest covering 46.38% of the total land surface area and 41% grass/crop land. By 2020, these had drastically reduced to 0.22% and 5.10% respectively. By 2020, the forest that characterised Obama farm in the early 1990s and 2000s had been reduced to nothing as the population increased and the demand for built-up space particularly buildings gave way to the construction of houses for residential purposes. Built-up land cover/space increased at the expense of the other classes of land use and land cover change that were considered for this study. The area was initially forest and cropland as it was a farm owned by the NRDC where they were able to employ locals on their farms who benefited alongside the college.

Due to urbanisation and urban population growth pressure, this area today houses residential homes without any inch of agricultural land where residents can continue to practice agriculture. In their study of Makeni farm blocks in Lusaka, Hampwaye (2020) made a simillar observation where the area, characterised by farms and farming blocks has been turned into

mixed land use consisting of settlements and commercial establishments. Simatele et al. (2012) in their study conducted in Lusaka also noted that urban agriculture has not been prioritised in national land use change planning. The implications of such transformations in urban land due to urbanisation are loss of livelihoods for the urban poor and vulnerable as well as the threat to urban food security. As urban land use has been expanding inwards (densification) and outwards through the Hoyt sector model perspective, urban food production has been relegated to the city fringes. Consequently, the amount of food available and the prices have gone up as traders now have to cover longer distances and transportation costs than before. This is similar to the findings by Nyawali (2018) in his study conducted in Lusaka district.

5.2.1.7 Meanwood Ibex Hill

Results presented in chapter four indicate that Meanwood Ibex Hill was 54% forest and 44% crop/grass land cover respectively. Built-up was only covering a negligible 0.05% of the entire land cover area. The percentage of the area covered by water in 1990 was even more than the area covered by settlements or built-up as water covered 0.80%. Over the thirty years, the built-up area increased to 46.85% implying over 100% increase in the built-up area class. This increase was at the expense of the other classes that drastically reduced during the same time under study. For instance, forest land cover reduced from 43.68% in 1990 to only 20% in 2020. The 20% was only available in 2020 because of people who had purchased residential plots but had not yet put up structures on their pieces of land. The area covered by water equally reduced during the thirty years of the study. The possible explanation in this area is that the amount of water available has been reducing due to land reclamation for construction purpose both industrial, commercial and residential. Monde (2023), in her study conducted in Lusaka made a similar observation that the amount of water available for use in the district had drastically reduced to 24.72 hectares by 2015 and attributed the erratic water supply in the district to this decrease in the overall amount of water.

Just like the other residential areas that were sampled, results of this study indicate that changes in Meanwood Ibex Hill land use occurred due to mounting pressure from urbanisation processes and the growing urban population. These have undoubtedly spiked the demand for land for various urban uses especially residential housing, social amenities and commercial enterprises. Land is converted from non-urban to urban uses due to people's reckless consumerism behaviour where each one is deeply focused on themselves and the amount of

real estate property they can amass at the expense of all urban residents and the environments wellbeing overall.

Simwanda et al. (2020) observed that urban sprawl was among the key drivers of urban land use and land cover changes as population growth pressure leads to a demand for more built-up space. With time, this trend evades the city and its CBD right into the peri-urban areas and city outskirts as the trend has been in Zambia. Over 15 years ago, residential areas such as Obama and Meanwood Ibex Hill were considered as city outskirts but that is not the case right now as the increase in the built-up space can attest. This is how the sector model explains city growth and expansion and urban land use as growing in sectors that expand outwards from the CBD (Hoyt, 1964). Studies conducted by Masumbu (2018); Li and Siame (2020); Chungu and Dittgen (2021); Olorunfemi et al. (2022) in Zambia and elsewhere assert that urban population increase, urban and economic development activities such as urban construction lead to urban expansion, urban sprawl and changes in urban land use as the findings of this study presented in chapter four indicate.

5.3 Urbanisation, Urban Land Use Change, and Rights to the City

Objective number two sought to explore how the urban poor and vulnerable groups negotiate their right to the city and urban citizenship within the rapidly urbanising city of Lusaka. This objective was achieved through data collected using questionnaires for urban residents (HH) and interviews conducted with key respondents across different government institutions, ministries and departments, CSOs and NGOs in Lusaka.

The study had questions that sought to explore participants' knowledge of urban land use change, urban land management, and urbanisation. The study asked respondents if they understood what was meant by urban land use change, urbanisation and urban land management. These three questions sought to establish whether or not, respondents were aware of the topic at hand. These questions were cardinal in this study as they formed the basis on which all other questions were premised on. The responses provided by both residents and KRs, presented in chapter four of this study indicate that more than half of the respondents were aware of the concepts of land use change, urbanisation and urban land management implying that the responses were in turn, informed. Needless to mention, some residents did not understand what was meant by land use change, urbanisation and or urban land

management in an urban context. Fortunately, these made up the minority respondents and did not affect the validity and trustworthiness of the data collected in any way.

The question of the meaning of urbanisation and urban LUCs specifically in an urban context elicited various responses. Definitions of urban LUC included change of an area/place from rural to urban, changes on land necessitated by growth in population, use of land by people living in an urban area, development of a town and, urban infrastructure development among others. Respondents understood land use change as the urbanisation of formerly rural and peri-urban areas into fully developed and urbanised areas. Other changes, including the constant and indiscriminate removal and clearance of natural environmental features to pave way for other urban activities in Lusaka or any urban area amounted to urban LUC. These definitions are consistent with what other studies have brought out (Ahmed, 2011; Alemayehu, 2016; Butt et al., 2015; Cahya, Martini, & Kasikoen, 2018; Frélichová, 2014; Hampwaye, 2020).

According to KRs, LUC has to do with the urbanisation of the city and the associated urban developments. This study is of the view that urbanisation and urban land use changes are two sides of the same coin. The reason for this intertwined relationship between urbanisation and urban land use is that urbanisation makes up the crux of the structural organisation of any country's social and economic development (Venables, 2018). Social and economic development on the other hand, always involves the conversion of land and the subsequent change in land use from non-urban to urban uses. As the results of this study indicate, land use change in Lusaka is synonymous with booming economic and industrial activities. According to residents, economic growth is intertwined with urban LUCs, associated with infrastructure development, creation of job opportunities and attracting of foreign investments. This implies that urban land use change and urbanisation are inevitably linked as one cannot happen without the other. This is in line with assertions from studies conducted in Zambia and elsewhere by Cahya et al. (2018), Alemayehu (2016), Gitau (2018), Hampwaye (2020).

Urbanisation was defined by respondents as the increase in the number of people/residential areas, growth in infrastructure, an increase in urban population over time, conversion of land from bare/agricultural to urban use, high demand for and cost of land and spatial expansion of the city among others. The critical urban theory equally defines urbanisation using urban population, increase and improvements in urban infrastructure such as communication and transportation, conversion of land from non-urban to urban use, and many other aspects that make up the urbanisation of a city (Brenner, 2009; Ruddick et al., 2018; Schmid, 2018). Nuissl and Siedentop (2021) also talk of the urbanisation of cities in the context of urban land use

change, increasing pressure on land as a resource, growth in urban populations over time, the resulting pollution, and the socio-economic inequalities between and within cities.

Results of the study presented in chapter four highlight how the urban landscape and spatial extent of Lusaka has grown over the years and the past few decades due to urbanisation. The results of this growth are the changes in urban land use and the increased demand for mixed land use comprising mostly residential, commercial, and industrial properties. According to the results of this study, formerly residential land and areas around Lusaka now house commercial properties. These areas include among others, Rhodespark, Northmead, Manda Hill, Kalingalinga, Fairview, Longacres, Olympia, Handsworth, Roma and Kalundu. In China, Li et al. (2017) revealed that urbanisation has been converting land to mixed urban land use comprised of mostly residential, commercial and industrial. This has been the trend in the USA (Lubowski et al., 2003; Lubowski et al., 2008), South Africa (Home, 2021), Zimbabwe (Muchadenyika, 2015; Mujeyi, 2021), Tanzania (Kironde, 2009; Kombe, 2005), Kenya (Bird et al., 2017) and many other developed and developing countries alike. Urban developments through land use changes take place inwards and outwards as the Hoyt sector model puts it. Lusaka has experienced both in and outwards growth in its land that has resulted in its growth in the last three decades.

Land management was defined as the process of properly planning of the placement of urban developments and activities to avoid devaluing land. Other respondents defined it as the sustainable use of land, demarcating and using land, the regulatory functions of land use by the government, the day-to-day development and administration of land and, issues to do with the buying, selling, registration and transfer of land. These varying definitions were given by both residents and key respondents. There were some attributes in the definitions that were common across the definitions of urbanisation and urban LUCs. One prominent aspect was that of the change in the use of land over time, an aspect that others such as Alemayehu (2016); Song et al. (2018) and Mubanga (2019) also noted in their respective studies.

Urban LUC involves shifts in the utilisation of urban land, regardless of whether the shifts are planned or not. Most land conversions are from bare, grass and agricultural land in preference for urban uses such as infrastructure construction and development, residential housing and others such as transport and communications infrastructure. This is consistent with findings from a similar study that was conducted in Lusaka by Hampwaye et al. (2020), Simatele et al. (2012). The rapidly growing population, urbanisation and mixed land use have limited the availability of land for residential and agricultural purposes and have further left residents with

limited access to such resources. Furthermore, the clearance of formerly agricultural tracts of land has an impact on urban livelihoods particularly loss of jobs and sources of income for the urban poor and vulnerable whose source of livelihood depends on agriculture. Besides that, there is also a threat to urban food security as agricultural land keeps reducing in preference for modern uses.

Hampwaye et al. (2020); Simatele et al. (2012) assert that the changing uses of urban land coupled with urbanisation have pushed the urban poor and vulnerable people to more poverty by taking away their very livelihoods and economic source of livelihoods. This assertion resonates with the findings of this study. Urban residents, particularly the poor and vulnerable indicated finding it hard to continue living in the city but then again, they have nowhere else to go because Lusaka is the place they have ever known, and they call it home. The changing land uses have compromised their food security as most of them have historically been dependent on backyard vegetable gardens that no longer exist. This compromises the urban poor and vulnerable people's rights to the city as most of them have ended up more desperate and poorer than before. Residents of Garden Chilulu compound for instance, complained of how life has become unbearable over the years. Most of them were displaced from the place where they used to grow their vegetables and fruit gardens that served as sources of household income and food needs for their families. Garden Chilulu compound was in fact, named after the infamous gardens, that were replaced by houses even if the residents were compensated with a K600 (about $23) each that time. At the time of data collection, almost all of those who were compensated had nothing to show for the compensation monies, they could not even remember what they did with it.

The findings of this study further indicate that urban spaces and residential plots have been shrinking over time. Residents are unable to practice subsistence farming and backyard vegetable gardens for their daily vegetable needs. This is impacting local food production (Hampwaye, 2020) consequently forcing residents to buy vegetables and fruits at exorbitant prices due to rising prices of vegetables and fruits both from the farms and city market where retailers order from. This is in line with findings from the study conducted by Nyawali (2018). Due to the demand for more agricultural produce and food due to the growing urban population, farming inputs have become extremely expensive. Individual, subsistence and small-scale farmers who are involved in crop and agricultural farming have to deal with the high demand for farming inputs thereby exacerbating the threat to Zambia's food security. This has further

led to the production of unsustainable farming inputs that harm the biophysical environment and, the biophysical environment pays the price ultimately.

Regardless of the reasons why urban land changes use, it is worth noting that LUC is dynamic so variations in the utilisation of land will occur over time as long as human civilisation persists. As long as people live, different people will have different ideas and uses over the same land. Different generations and the passage of time will mean varying utilisation of the same pieces of land spanning different lifetimes. This is an explanation equally advanced by the Hoyt model and the critical urban theory in explaining the current and rapid rate of urbanisation and urban LUC of cities worldwide as the cities move towards global urbanisation (Brenner, 2009; Brenner & Schmid, 2015; Hoyt, 1939). The only aspect of the current rate of urbanisation and the shifts in urban land use is the rate at which the changes are taking place and the seeming lack of attention to the urban poor and vulnerable groups of people. This then validates the critical urban theory's main assertion of urbanisation and the associated urban LUC. According to the CUT, urban land use change is inevitable provided urban populations continue to grow as the world is moving towards planetary urbanisation (Ruddick et al., 2018; Wilson & Jonas, 2018).

The critical urban theory explains the urbanisation of cities across the globe by postulating that cities lack empirical, conceptual and spatial boundaries as they are now considered as one entity, an important aspect of the global urbanisation process. Considering the dynamic nature of the changes in LU in Lusaka, it is safe to agree that Lusaka is experiencing changes in land use because of planetary urbanisation. While urban LUC can be controlled, urbanisation cannot easily be contained or controlled as noted by Nuissl and Siedentop (2021). This then gives rise to the need for urban land planning and implementation to consider the urban poor and vulnerable to ensure that they are not neglected in the process and continue to enjoy their rights to the city (Pierce et al., 2016). This study holds the view that taking care of land from planning to demarcations and actual use minimises negative impacts of both land use change and urbanisation and further preserves environmental health. Proper planning ensures that diverse needs of urban communities are all taken care of be it rural or urban. This will then underscore the role played by the empowerment of citizens and effective leadership without which management of land is impossible or chaotic. Land use planning and citizen empowerment can be realised through the implementation of a timely and functional land policy.

The current land policy unfortunately, has gaps that hinder its effective implementation. These include the inadequacy of existing policies in addressing and protecting the rights of urban citizens (particularly the urban poor and vulnerable). The findings of this study indicate that the policy also has gaps and challenges in land use planning, land management, effective policy implementation and political interference (which was particularly rampant in the previous PF government). Ineffective communication, lack of stakeholder (government officials, traditional leaders/rulers, urban residents, community representatives, vulnerable groups, policymakers and members of parliament) consultations, awareness and communal sensitisation emerged from this study's findings. The findings of this study further indicate other challenges including gaps in information provision by the relevant authorities (Government ministries and agents e.g., LPPA, LCC), difficulties in accessing land and related services (especially for the poor and vulnerable) such as title deeds and, inadequate resources for operations. These challenges make it difficult for policymakers to formulate, implement and evaluate LUC planning, management, and urban planning policies. Empirical evidence suggests that the region suffers from inadequacies in their land policies that end up disadvantaging their urban residents particularly the urban poor and vulnerable (Allsobrook, 2019; Collier & Venables, 2017; Deininger et al., 2012; Hilhorst, 2010; Mandhu, Mulenga, & Mushinge, 2019; Mujeyi, 2021).

The removal of natural features was also prominent in the definitions for urbanisation and urban LUCs. Natural features such as flora and fauna are displaced or removed from their natural habitat during urbanisation processes and whenever changes in land use occur. This is consistent with findings from Monde (2023), Monde et al. (2023). Alemayehu (2016) found out that human population pressure, the impact of land use change among others have led to the removal of mangroves which are a prominent natural feature that provide numerous ecosystem goods and services. Jew (2016) argues that natural environmental features such as flora and fauna support livelihoods on a large scale and also provide ecosystem goods and services. Urban land use and related urban developments inevitably affect natural features in the process and even after the completion of the process (Frélichová, 2014). In some instances, significant organisms might be relocated to entirely new habitats that may not be conducive to their existence. While some organisms may adapt to their new homes, some fail to adapt and become extinct while micro-organisms are destroyed during the changes in LU. This inevitably disturbs the natural order of things and the delicate ecological balance.

Monde (2023); Cahya et al. (2018) argue that clearance of natural features is counterproductive as residents are denied of various and beneficial ecosystem goods and services that can be

derived from the environment in its natural setting. As further revealed by Camacho, Ruiz-Luna, and Berlanga-Robles (2016), Aziz et al. (2015), the removal of natural features leaves urban residents prone to various ills such as the loss of the environment's climate change and pollution control functions, soil stabilisation and groundwater reserves purification among others. In its pristine condition, the environment provides all living things with countless benefits that can be grouped into three major functions of supply depot/sustenance base, waste sink and living space.

Residents and KRs also talked of urbanisation and development in the definitions of urbanisation induced LUC. From the definitions, it is clear that urbanisation, urban development and urban LUC are intertwined as already mentioned. An advancement and or disturbance in any one of the three inevitably affects the other two. As the findings of this study revealed, LUC in the Lusaka urban context is associated with urban development activities such as the construction of new infrastructure for communal use and benefit. Infrastructure includes roads and road networks, public amenities (schools, hospitals/health centres etc), residential housing units, commercial (such as shopping malls) and industrial amenities in formerly unutilised lands or areas, urban zones or formerly agricultural and residential spaces. There are massive infrastructural developments around the city translating into changes in the urban landscape and the spatial expansion of the city. Urbanisation and urban LUC are synonymous with urban growth and development. There cannot be urbanisation or the associated changes in land use without infrastructure construction and development. As land changes use from one form to another, the urban poor and vulnerable are affected in various ways. Various scholars all over the world (Brenner, 2018; Brenner & Schmid, 2015; Herrmann et al., 2020; Hersperger et al., 2020; Nuissl & Siedentop, 2021; Schmid et al., 2018) assert that it is often the urban poor and vulnerable people who bear the brunt of urbanisation and LUC related activities and changes.

The use of for instance, formerly agricultural land for urban development infrastructure affects the urban poor and vulnerable groups who practically depend on land for survival and often don't have a stable source of income. A study conducted by Li and Siame (2020) in Lusaka showed that urban residents are inconvenienced by urban development processes that come with changes in land use. With up-market buildings springing up everywhere, the urban poor are relegated to the city fringes or pushed to the already congested peri-urban areas thereby causing further overcrowding in those parts of the city (Simwanda & Murayama, 2018). Up-market buildings have equally brought about a housing challenge and stiff competition among

different entities such as residential, commercial, agricultural, industrial and mixed use. Many families, especially in medium and high-density residential areas are struggling with finding and maintaining decent but affordable living spaces, a scenario that has been happening in Kenya (Bird et al., 2017) and Tanzania (Kombe, 2005). These changes are necessitated by the surge in urban populations and urbanisation processes.

The findings of the study pointed to various concerns raised over the expansion of Lusaka through urbanisation and land use change as it was initially meant for a smaller population than what is currently obtaining. The rising urban population and urbanisation are massively contributing to the mushrooming of unplanned settlements (Simwanda, 2018), haphazard constructions (buildings wrongly constructed e.g. in wetlands) and unplanned settlements leading to high population density with certain areas being overcrowded (Chiwele et al., 2022). Coupled with inadequate drainages, disorganised and congested settlements, the urban poor are disadvantaged through flooding and air and water-borne diseases (such as Cholera). This is made worse by the inappropriate location of buildings such as bars and taverns in the midst of residential areas or churches right next to bars. There are mushrooming bars, taverns and all sorts of drinking places that are now a nuisance in and to the community. This consequently leads to a breakdown and inadequacy in urban systems such as water supply and sanitation, education and health provisioning services, transport and communication infrastructure, waste disposal and management, decent housing and accommodation among others (Collier & Venables, 2017).

According to the findings of this study, there is a lack of basic social amenities such as water and sanitation, proper drainage systems and clean toilets (where toilets are mostly communal). Despite the urban developments and land use changes taking place, Lusaka still has inadequate infrastructure, fiscal resources, basic social services and amenities provision to carter for the growing urban population. The urban poor and vulnerable are at the tail end as they are the ones who lack basic social services and amenities. Residents in Lusaka are faced with for instance, traffic challenges stemming from inadequate infrastructure, narrow and poorly constructed, unmaintained roads covered in potholes resulting in transportation and intra-urban mobility challenges. These challenges are similar to what the urban poor and vulnerable experience elsewhere especially in developing countries (Cobbinah et al., 2020; Collier & Venables, 2017; Côté-Roy & Moser, 2019). Furthermore, the increase in the urban population and the urbanisation of the city has brought more vehicles on the limited roads thereby causing air pollution and road traffic accidents that have unfortunately also claimed lives.

The study findings presented in chapter four further revealed that for instance, mixed land use has brought about a lack of security in urban neighbourhoods thereby exposing residents to different dangers and vices such as junkies, thefts and robberies, street vending, violence, indiscriminate waste disposal among others. In town for instance, this is compounded by the existence of various incomplete buildings around the city (e.g. Mususu Kalenga building in town and unfinished buildings everywhere) that harbour and encourage illicit and criminal activities. Bird et al. (2017), Kombe (2005) argue that lack of security for instance, affects the urban poor and vulnerable as they lack the financial capacity to counter such. At the end of the day, they end up settling in areas unfit for human habitation and engaging in bad activities such as street vending as a result of urbanisation and developmental land use changes.

In Kalingalinga for instance, urbanisation-induced LUC and related developments, the road frontage has been turned into commercial enterprises resulting in the urban poor being internally displaced. Most residents are offered compensation to willingly leave their "homes" to go and settle somewhere else. Even if compensation is given, it does not equal the actual cost of the land they give up in real terms. Results of this study indicate that these poor and vulnerable residents get overwhelmed with the amounts of money offered and, without a second thought and proper plan for the money and their lives, they accept the offer. Furthermore, they squander the money as they only look at their immediate financial needs and neglect the long-term needs that include accommodation in the city. These findings resonate with the findings of study that was conducted by Mungu (2017) in Mazabuka district of Zambia. The internally displaced persons who are mostly poor and vulnerable, lack adequate financial literacy to manage the lump sum payments as evidenced by the study findings presented in chapter four. This study holds the view that this is day-light robbery in that, as much as the residents are offered compensation for their land, the compensation is not enough to buy them decent pieces of land where they can build and settle or even to purchase decent houses in middle-density residential areas. There is a need to offer financial literacy to such residents to ensure that they understand the dynamics of money. This will further equip them with relevant financial knowledge and management skills that will not leave them worse off, a few months or utmost, years after they sell their land to business enterprises.

From the findings of this study, some residents who are still resisting being bought off know too well that it is a matter of time, as they will eventually have to accept the dangling carrot in their faces. They have, over time, found themselves misplaced as they are now surrounded by business and commercial premises thereby losing their social ties and connections. We are

social beings and as Mungu (2017) rightly explains, social ties and relationships are broken when communities that have fostered such bonds over time, are forced apart by circumstances external to them. Besides that, due to the nature of the transformation of the area, the cost of living has gone up with the coming of developments such as shopping malls and other high net-worth properties that have rendered the place, a mixed LU area. Worth noting is that most of the LUCs, urbanisation and development are taking place in formerly agricultural land and peri-urban areas much to the detriment of poor and vulnerable urban residents. This has also been noted by Mweemba and Monde (2018), Hampwaye (2020), Li and Siame (2020) in their respective studies.

Lusaka has grown in leaps and bounds spatially, consequently raising the demand for land for various urban uses. For instance, in Kalingalinga along Kamloops Road frontage and some sections, boarding houses are now famous and more lucrative compared to ordinary family homes for rent or purchase. Kalingalinga as a case example further sheds light on the mixed urban land uses that have plagued the city and, the proliferation of social-economic infrastructure and services in the last few decades. Other areas include Meanwood Ibex Hill, formerly smallholdings for agricultural purposes, now mainly residential and, Obama, formerly farms for the National Resources Development College (NRDC), now a residential area born out of plot giving. These and other formerly agricultural lands, now serve various land use functions including residential, commercial, industrial and mixed-use. Urban LUC as pointed out by Teixeira et al. (2014), Olorunfemi et al. (2022) is the impact of anthropogenic activities on the biophysical environment and the associated ecological impacts that include biodiversity loss, habitat loss and fragmentation and the loss of green spaces. Lusaka has changed land use over time that it is now a concrete jungle where flora and fauna cannot thrive anymore. East Park and Arcades are vivid examples of how former wetlands or natural drainages are now concrete spaces resulting in rainwater having nowhere to drain from. The pictures below illustrate the flooding of Arcades shopping mall during the 2022/23 rain season. Arcades shopping mall was built on a wetland which explains the annual flooding of the place every time there is a heavy downpour. Protea hotels were so flooded that there was no access to the hotels from anywhere on the ground.

Figure 5.1: Flooded Different Access Points to Protea Hotel Tower at Arcades Shopping Mall.



Source: Field data (2023).

Urban population growth, rural-urban migration and adaptation were also used in the definition of urbanisation and urban LUC. Urban population growth results in demand for more land for various urban uses such as housing and commercial infrastructure development. Rural-urban migration on the other hand increases urban population numbers that in turn, affect urban land uses. According to Mulenga (2003), Mekara (2020), Kombe (2005), Chigudu and Chavunduka (2021), changes in urban land are purely driven by the surge in urban population numbers. Izakovičová et al. (2017); Swerts et al. (2018) equally argue that a combination of rural-urban migration and urban population increase largely contributes to urban LUCs. For instance, about 30% of India's urban population is from rural-urban migration (Swerts et al., 2018) A similar study by Yogi et al. (2022) revealed that Indonesian urban areas record higher numbers of urbanites resulting from rural-urban migration compared to those already living in cities. Similar trends were recorded in China by Song et al. (2018), Zhang (2016), Bird et al. (2017); Thuo (2013) in Kenya, Kombe (2005) in Tanzania, Hunt (2004) in Uganda and Simwanda and Murayama (2018) in Zambia.

It is undeniable that the demographic concerns of any given urban area translate into changes in the spatial distribution of people, urban LU patterns and spatial expansion of the city. Whichever way we look at it, urban population growth is inevitably linked with urban LUC. Consequently, a surge in urban population growth affects how urban land changes use from one form to another. The findings of this study indicate that rural-urban migrations also define urban LUC in that as more and more people come to urban areas for various reasons including economic emancipation, search for better livelihoods and the need to earn a better income, urban land changes use too in the process. This is in line with what studies conducted elsewhere by Tacoli et al. (2015), Yogi et al. (2022), Swerts et al. (2018) also noted. In the process, urban land changes use from one form to another to accommodate these migrants together with the existing urban residents.

Rapid urban population growth has unfortunately resulted in overcrowding, unsanitary and inhabitable living conditions in certain areas that are mostly inhabited by the urban poor and vulnerable groups. This is similar to what was observed by Simwanda and Murayama (2018), Chileshe (2018), Chigudu and Chavunduka (2021) in Zambia and Zimbabwe. Rapid urban population growth has also resulted in difficulties in intra-urban mobility, increased and uncontrolled traffic congestion and the creation of unplanned settlements in Zambia. This is consistent with similar studies conducted elsewhere (Glaeser & Xiong, 2017; Kamete et al., 2001; Kuddus et al., 2020).

The findings of this study indicate that peri-urban areas or high-density residential areas are overcrowded due to rural-urban migration. Many HHs complained that their relatives just come to the city, mostly unannounced in the search for employment and better living conditions. Unfortunately, the city life dream is not what they envision it to be when leaving the rural areas for the city. Once in the city, they come face-to-face with the grim reality of how hard life can be in the city and the need to survive amidst scarce resources. Other studies echo this sentiment as they argue that life in urban areas is not easy and as such, the urban poor and vulnerable particularly, have to work twice as much in order to cope with the glittering city life (Pierce et al., 2016; Tacoli et al., 2015; Thuo, 2013).

Many rural dwellers leave their rural areas for the city which promises a glittery and easy life through employment in various sectors of the job market not found in rural areas. Unfortunately, they end up as unskilled labourers and small-scale traders or even artisanal workers over time. These become urbanites who live in uninhabitable areas that are not suitable for human habitation (Tacoli et al., 2015; Thuo, 2013; Zhang, 2016). Many high-density areas

in Lusaka were born that way. Most of them started as squatter compounds for unskilled workers and were later legalised by the government (Simwanda & Murayama, 2018). Kalingalinga and Mtendere East are good examples of residential areas where unskilled labourers illegally settled as they got jobs at UNZA, Chainama Hospital and NRDC over time. Most of them moved to Lusaka and ended up in the city looking for better livelihoods. Bird et al. (2017), Van Leeuwen et al. (2018), Kombe (2005) reveal the same pattern and trends hence the realisation of the urban age according to the critical urban theory. CUT asserts that the urbanisation of cities and their spatial expansion is inevitable over time largely due to urban population growth, urban LUC and rural-urban migration as cities move towards the boundaryless urbanisation of cities. Cities mainly pull people towards them due to massive infrastructural and socio-economic developments that characterise them, a preserve of urban areas especially in the SSA context.

Some of the urban developments are to a certain extent, unsustainable. This is attributed to the fact that they mainly ignore/neglect the need for sustainable urban developments that do not deplete natural resources, leave urban residents vulnerable and destitute nor preserve their dignity. Sustainable urbanisation, urban developments and urban LUC must not only focus on Lusaka and other cities but other towns and regions too as that will deter prospective rural-urban migrants ultimately decongesting Lusaka. The development of rural areas will leave people without an incentive to migrate to Lusaka or other urban areas in Zambia and SSA in search of better livelihood options. As noted by Cobbinah et al. (2020), Kombe (2005), a combination of urbanisation and urban development activities, rural-urban migration and urban population growth are compounding the unsustainability of urban areas across the SSA landscape. A focus on other urban areas in Zambia will give life and meaning to other areas thereby reducing and abating the rural-urban migration trend.

Land ownership, land tenure and tenure security were used by urban residents to define urban LUC and urbanisation. According to Chitonge et al. (2017), Zambia has a dual land tenure system, traditional and state. Urban LUC is defined and viewed through the changes in use as dictated by the state of tenure and tenure security. When land changes ownership and title from mostly traditional to titled land under government, there will definitely be changes in its utilisation. A common feature in Lusaka today and even the entire country is the Chinese people who purchase traditional land in the peri-urban areas and city fringes. This finding of the study as presented in Chapter Four is consistent with findings from a similar study by Li and Siame (2020). Most of the times, this is residential or agricultural land that the Chinese, by virtue of

owning the land, change use to something else mostly commercial, residential and mixed use. The obtaining scenarios is where some people have had to vacate their homes as that land has supposedly been bought and under new management who will have different use and not the initial residential use.

Li and Siame (2020) observed the trend where most of Lusaka now has the Chinese owning land and changing the use thereof. The findings of this study confirmed this as both residents and key respondents indicated that the Chinese and other foreign nationals are buying land in urban and peri-urban areas and proceeding to change use from mostly bare, residential and agricultural land to mostly commercial and or mixed-use. This scenario is a clear indication of the city's loss of sovereignty and unfortunately, it is the urban poor and vulnerable people who mostly pay the price. They mostly end up displaced either willingly by selling their own pieces of land or through their landlords auctioning off their rented premises to the highest bidder. Evidence on the ground suggests that the Chinese are 'big' buyers of land and properties in urban and peri-urban areas of Lusaka as their financial prowess cannot even begin to compare to the poor locals who, even when offered the same pieces of land, cannot readily afford to buy them. Li and Siame (2020) shed light on how the Chinese are now buying huge tracts of land anywhere they can in the country. Besides that, tenure security documents such as occupancy licences and title deeds are marred with a lot of institutional bureaucracy that residents struggle with besides the high fees that are required to obtain the security of the land/properties as revealed by this study. Collier and Venables (2017); Bird et al. (2017) in their studies conducted in Ghana and Kenya respectively, further argue that court processes in Africa lack independence and are prone to corruption and bribery, much to the detriment of the urban poor and vulnerable.

According to the critical urban theory, the world is moving towards planetary urbanisation. This entails that cities across the globe are increasingly becoming globalisation centres providing for a mixture of cultures, nationalities and socio-economic activities in the same spaces. It is thus, not surprising that Lusaka, just like many other urbanising cities around the world, is increasingly becoming a mixture of different nationalities and cultures. It is just unfortunate that all these processes have somehow taken away the rights to the city of the urban poor and vulnerable groups. Focusing on urban growth, the Hoyt model explains why certain areas such as Kalingalinga seem to be areas of preference for urbanisation and related urban LUC activities. According to the model, urbanisation and spatial expansion activities are conducted by mostly the affluent as they have the financial capacity to transform any area

where urbanisation activities are concentrated. Using Kalingalinga as a case example, we can see the applicability of the Hoyt model as most of the developments and changes in LU are taking place along the major transportation artery of the area, Kamloops Road.

5.3.1 Drivers of Urban Land Use Change

Apart from the proof of urbanisation and urban LUCs generated using GIS and RS, it was important for the study to establish, from the respondents' point of view, drivers of urban land use changes. To achieve this, respondents were asked what they perceived to be the drivers of urban LUC. This question was relevant in the context of this study as it gave the researcher an idea of the respondents' understanding of the intricacies surrounding urbanisation processes, urban LUCs and urban livelihoods. Respondents' knowledge and understanding of the complexities surrounding these factors indicates informed responses to the study. As Alexander et al. (2015) puts it, understanding the drivers of urban LUC is inevitable in any land management and policy formulation, urbanisation and urban development efforts. Song et al. (2018) equally argue that understanding the drivers of urban LUC is essential as drivers have profound effects on urban livelihoods, urbanisation and rural-urban migrations including intra-urban mobility. For instance, increase in urban population results into demand for more land for housing and infrastructure development consequently resulting in the conversion of bare/agricultural land to accommodate urban populations and their various unending needs.

From the responses gathered, it is clear that respondents understood and knew what is meant by urban LUC, management and urbanisation. Responses ranged from rural-urban migration, influx of foreign nationals, urban population growth, internal displacements, urban developments to economic growth and development and, lack of policy implementation and monitoring. Izakovičová et al. (2017) argue that LU is influenced by various drivers which are economic, environmental, social and demographic in nature. This study is of the view that LULCC are not static but dynamic hence will keep changing over time as people and communities evolve and as areas evolve too. What is cardinal as cities and the world move towards the global urbanisation of cities in the context of the CUT, is to make sure that urban injustices, inequalities and class divisions are dealt with. This will ensure inclusive urban areas that do not risk and jeopardise urban livelihoods particularly, those of the urban poor and vulnerable who are always at the receiving end. They too, just like the upper and middle classes, have rights to the city that must be enjoyed by all urban residents regardless of their socio-economic status (Amin & Thrift, 2002; Simone, 2005). Adhering to urban residents' RttC is

the only way that issues that come with urbanisation, urban LUC, gentrification, and urban sprawl among others, will be addressed, SDG 11 realised and Africa's Agenda 2063 achieved.

The process of change in human communities, their compositions, aspirations and dreams will equally transform the face of urban and even rural land spaces. What is worth noting according to Teixeira et al. (2014) is that these changes will either be anthropogenically or naturally induced. Human-induced drivers are anthropogenic activities or factors that alter the normal functioning of the land and related ecosystems (Izakovičová et al., 2017). Natural drivers are those factors that occur or are induced by nature and alter the normal functionality of the land ecosystem (Elliott, 2002). Three broad themes, i.e. political, social and economic are used to discuss the drivers of urban LUC as gathered from the respondents' perspectives.

5.3.1.1 Economic Drivers of LUC

Economic drivers of urban LUC according to the results of this study presented in chapter four are; demand for farm, agricultural and crop land, demand for commercial, office and industrial building space, technological innovations and, growing demand for land for various urban developments. At the core of all these developments is the growth in the urban population. Urban population in Lusaka has been growing and with the growth, has come the demand for more land. Land to carry out massive agricultural activities so as to meet the food demands of the growing population, land to put up various infrastructures such as office space, industrial and commercial premises as well as other urban developments such as roads, schools and, hospitals. Growth in urban population inevitably leads to the spatial expansion of the urban space to accommodate everyone and their various needs. The findings of this study demonstrate the intricate relationships and interconnectedness of various aspects of urban life.

As noted by Monde (2023); Teixeira et al. (2014), urban economic activities influence and affect human wellbeing and urban livelihoods. Similar studies by Mweemba and Monde (2018); Hampwaye et al. (2020); Simatele et al. (2012), revealed that economic activities coupled with urban population growth have a bearing on urban consumption patterns and the demand for various requisite goods. This leads to the expansion of agricultural land and consequent changes in urban landforms. In the case of Lusaka urban, land has changed use from one form to another, mainly from bare/forest and agricultural land to built-up, residential and mixed-use. In the case of Kenya, due to urban population increase, the Watamu Mida Creek has changed from mainly mangroves to various urban uses, a disturbance in the various

ecosystems that co-existed before urban developments such as the expansion of the tourism sector and an increase in human population set in (Alemayehu, 2016).

It is an undeniable fact that economic activities greatly affect urban land use. Li and Siame (2020) argue that all economic and developmental activities in Lusaka urban inevitably lead to changes in the land ecosystem. This further affects urban livelihoods in various ways such as the surge in the urban population of an already overcrowded and congested city. Coupled with technological advancements, the impact on urban LUC has been significant. Glaeser and Xiong (2017) argue that infrastructure and economic development together with technological advancements are some of the key drivers of urban LUC. The findings of the study presented in chapter four corroborate this assertion. Some of the KRs explained that the use of GIS and RS technologies has for instance, revolutionised LUC assessment, planning and monitoring. Similar studies also allude to the fact that technology has further enhanced the manipulation and conversion of forests, formerly bare and agricultural land for various urban land uses (Membele et al., 2022). Overall, economic and technological innovations and advancements have inevitable effects on urban LUC and livelihoods as evidenced by this study's findings.

5.3.1.2 Social Drivers of LUC

The results presented in chapter four point out social drivers of urban LUCs as being urban population growth, internal displacements, rural-urban migration, influx of foreign nationals, demand for residential land, poverty and, the need to own personal homes. An analysis of these drivers clearly indicates and places urban population growth at the centre as the main factor. As the urban population grows due to factors such as rural-urban migration, the demand for residential land and the need to own personal housing, urbanisation processes, the results are internal displacements and changes in urban LU. Displacements, be it internal or external affect urban livelihoods in various ways. Human beings are social beings who pride and identify themselves as such. Displacements due to urban LUCs leave societies and communities disintegrated. Close family ties and bonds built and fostered over time are broken in the process. Families lose their homes and community sense of belonging and interconnectedness in the process of LUCs. This is in line with findings from studies conducted by Mungu (2017), Tumbama (2019).

According to the findings of this study, urban land has transformed greatly and changed use over time due to various demands by urban residents. Mweemba and Monde (2018) agree with this finding as they argue that Lusaka has now been turned into a concrete jungle much to the

disadvantage of urban residents particularly the urban poor and vulnerable. Due to the high demand for land, residents have ended up building houses in areas that are meant to naturally drain rainwater and water recharge areas/zones such as forests (the case of Forest 27 in Lusaka). Others still, have put up buildings in ecologically sensitive zones that have further left them vulnerable. Olorunfemi et al. (2022), Monde (2023) further argue that social drivers of urban LUC have significant negative implications on the environment and the associated ecosystems. For instance, constructions be it access roads or residential/commercial constructions result in biodiversity loss and pollution in various forms (e.g. noise, solid and liquid waste, and air pollution among others). As argued by Moussa Kourouma et al. (2022), Olorunfemi et al. (2020), LULCC continue to impact the biophysical environment, weather patterns and climate change locally and globally.

This study holds the view that modifications in urban land in Lusaka have caused various environmental mishaps such as flooding and droughts that have an impact on urban livelihoods. As evidenced by the findings presented in chapter four, Lusaka experiences seasonal flooding and diseases outbreaks such as cholera. The 2023/2014 rain season's cholera outbreak saw the loss of lives on a large scale, this was an unprecedented loss that could have been avoided since the rains were not even adequate. Literature equally suggests that changes to urban land use, driven by social factors such as spatial expansion have significant outcomes that include climate change and changes in the hydrological cycles (Lambin & Meyfroidt, 2011; Li et al., 2017; Ross et al., 2021). This study agrees that Zambia experienced serious weather fluctuations (mostly drought and few isolated flash floods) during the 2023/2024 farming season. This is a major threat to urban food security. As a matter of fact, the Republican President, HE Mr Hakainde Hichilema has declared the 2023/24 farming season drought occurrence as a national disaster and emergency.[11] Urban residents need to take care of their environment, particularly urban LUCs if calamities of this nature are to be avoided.

According to the findings of this study, poverty and urban livelihoods have been identified as the key drivers of urban LUCs, an assertion shared by Monde (2023) and Li and Siame (2020) in their respective studies. Most of the urban poor and vulnerable directly rely on the biophysical environment for their day-to-day needs such as agricultural crops, produce, food and energy needs. The conversion of urban land from agricultural to built-up for instance,

[11](https://www.aljazeera.com/news/2024/2/29/zambia-declares-national-disaster-after-drought-devastates-agriculture).

denies the urban poor of their food needs as they are unable to continue with their backyard gardens that have served as their lifeline for a long time now. This is consistent with studies conducted by Sumari et al. (2020) in Tanzania, Appiah et al. (2019) in Ghana, Geyer Jr et al. (2012) in South Africa and Gitau (2018). These studies argue that urban livelihoods and their food needs have been compromised due to land conversions from mainly agricultural to built-up areas. Unfortunately, it is the urban poor and vulnerable who mostly lack the financial and physical land capacity to cope with all these urban adjustments that bear the brunt. As lamented by some residents, deprivation of goods and services provided by the biophysical environment in its natural state leads to adverse mental and physical effects experienced by urban residents. This assertion is also shared by Monde (2023), McMichael (2000), Wang, Chai, and Li (2016).

We are social beings, the changes in LU and growth in urban populations have been fragmenting society slowly but surely. Urban communities are not as closely knit as they used to be decades back. Changes in urban land use have created an urban divide that has particularly affected the urban residents particularly, the poor and vulnerable. For instance, families have been displaced and communities disintegrated to pave way for urban land uses such as the construction of mixed-use properties and gated communities resulting in the loss of our 'Ubuntu" as Zambians. In fact, respondents complained bitterly about how the influx of foreign nationals has disadvantaged the locals land-wise as these come with a financial muscle that is alien to most urban residents especially the poor and vulnerable. The influx of foreign nationals has seen families internally displaced from their rental homes where landowners prefer to sell to the foreigners who have money. This is consistent with Chungu and Dittgen (2021); Li and Siame (2020) who also made similar discoveries as they assert that the influx of foreign nationals is disadvantaging the locals in various ways.

Findings of the study as presented in chapter four indicate that most of the foreigners do not even have legal documentation that allows them to stay in the country, yet they are the ones amassing large tracts of land and changing the use. Once the land is sold, there is a total transformation from residential to mostly commercial, office and mixed land use. Transformation of urban land mostly from residential to commercial and mixed-use has through community disintegration, eroded critical cultural values and diluted our culture such that we are now a hybrid of all cultures that we have been exposed to. This has further been compounded by the existence of social media, the internet, and cable television networks that have taught us different unrelated cultures that we have adopted as a people. This has led to social and community disintegration that has over time, seen the emergence of social

stratification in urban areas, Lusaka particularly (UN-Habitat, 2020). Similar studies by Mungu (2017) and Tumbama (2019) have revealed that communities particularly poor and vulnerable ones, pay the price of urban LUCs through disintegrations of closely knit community relations and loss of sense of belonging through internal displacements.

In Lusaka's high-density areas such as Garden Chilulu (named Garden because of the presence and abundance of scenic vegetable and crop gardens back in the day) internal displacements have largely affected the urban poor and vulnerable mostly. For instance, garden owners were compensated with K600 for their gardens. Where the gardens used to be then, today are concrete buildings for residential purposes. Other areas like Ngombe, Kalingalinga, Mtendere East, Obama, Meanwood Ibex Hill, and Roma Park no longer practice vegetable farming due to lack of space. Plots are only as big as the houses/structures put on them, leaving no space for any backyard vegetable farming. This has a direct bearing particularly on the urban poor and vulnerable who cannot easily afford to purchase fruits and vegetables. This is compounded by the lack of readily available water due to borehole drilling that has plunged Lusaka urban. Monde (2023) argues that borehole drilling in Lusaka is unsustainable as it depletes groundwater reserves while the lack of serviced sewer lines contaminates groundwater. Ultimately, this is a threat to urban food security (Hampwaye et al., 2020) and an infringement on the RttC of the urban poor and vulnerable (Pierce et al., 2016). In light of the Hoyt model, the urbanisation of cities transcends beyond the socio-economic aspects of a city and its inhabitants. This is a call for urban LUC and urbanisation that is socially inclusive and considers the RttC of every single resident regardless of their socio-economic status. This way, land use change will be sustainable as every resident will consider their role in sustainable urban LUC hence the achievement of SDG no.11.

5.3.1.3 Political Drivers of Urban LUC

Political drivers of urban LUC include lack of land policy implementation, poor monitoring of implemented land policies and related laws and lack of political will. As revealed through literature and findings of this study presented in chapter four, Zambia has land laws including the land policy of 2021 (GRZ, 2021). The problem, as identified by respondents, is the lack of policy implementation and the lack of political will to ensure that policies are adhered to, rules followed and that implementation of policies to do with land is monitored throughout. Most of the urban LUC problems are driven by poor land management and governance according to Mubanga (2019); Lupale and Hampwaye (2019).

This is in tandem with the findings from Mushinge and Mwango (2017) that Zambia's legal framework, land governance framework, lack of land policy (up until 2021) and the state of land governance were dysfunctional for a long time. Similar trends have been observed elsewhere in SSA by Van Leeuwen et al. (2018), Kironde (2009), Collier and Venables (2017). Home (2021) and Rutherford (2017) argue that African governments have for a long time struggled with effective land management and governance due to systems that were left behind by the colonial masters much to the detriment of the locals. Unfortunately, land governance has been successively abused by governments through political and administrative powers (Collier & Venables, 2017; Kombe, 2005; Mubanga, 2019). Land in many SSA has become a subject of land-power relations between those who wield power and the urban poor and vulnerable people.

Steel et al. (2017); Van Leeuwen et al. (2018) note that much of the SSA region still grapples with issues of adequate and functional land management mechanisms. This study is of the view that good land policies are the cornerstone of good land administration, management and change use. This view is similar to those held by Mubanga (2019); Mujeyi (2021); Lupale and Hampwaye (2019). Weak laws, policies and their implementation disadvantage the masses particularly the urban poor and vulnerable whose social beliefs and behaviours towards land will remain unchanged. This study calls for an urgent need for policy and lawmakers to prioritise spatial and LU planning decisions at various levels that will ensure sustainable utilisation of land and the subsequent changes in urban LU. Good land governance and management are prerequisites to economic development particularly in developing countries like Zambia.

From the critical urban theory perspective, it is important to understand the drivers of urban LUC as that is what fosters sustainable urban development and the global urbanisation of urban areas such as Lusaka. The changes in LU and urbanisation of any city including Lusaka are largely driven by an interaction of the different economic, socio-cultural and political elements that make up the city. Lusaka cannot sustainably urbanise and use its land without an understanding of these differences and how they complement each other to weave the city that we know as Lusaka. Consequently, problems resulting from urbanisation processes and urban LUCs can never be solved by focusing on any one sphere but on all of them and only when they are considered as one entity. Furthermore, problems and challenges will be solved through understanding of how direct drivers of urban LUC feed into indirect drivers and how they ultimately interact to cause and influence LUC across the Lusaka urban landscape.

5.3.2 Rights to the City and Urban Citizenship in Lusaka District

Lusaka has been urbanising rapidly and consequently, there have been inevitable changes in LULCC. These two aspects of city growth and spatial expansion have had their effects on urban residents and have over time, created the urban divide characterised by the urban rich and urban poor, the haves and the have not as argued by Kombe (2005) and Tacoli et al. (2014). According to Li and Siame (2020), the urban poor bear the brunt of urban land use changes and urbanisation through the various consequences that emanate from such activities. This is consistent with this study's findings of the various effects of urban LUC and urbanisation on urban residents. It is worth noting that urban residents belong to different socio-economic classes and that is what determines where one ends up settling in the city. The study recorded various effects of urban LUC and urbanisation that compromise urban residents' livelihoods and their RttC particularly the urban poor and vulnerable.

Notable effects at the individual, household, community and city levels include increased pollution, reduced security, exposure to environmental and health hazards, increased cost of living, environmental degradation and traffic jams. The study also revealed in chapter four that Lusaka is experiencing steep and rising purchase/rental costs of commercial, residential and office space/infrastructure. This implies that as Lusaka urbanises and its land changes use, the urbanites are paying the price while their rights to the city continue being compromised. Particularly, the urban poor and vulnerable have been finding it extremely difficult to live in the city as the price of land and property, thanks to urbanisation, has over time become unaffordable. As noted by Hampwaye et al. (2020); Simatele et al. (2012), this has further reduced the amount of land available for agriculture, an aspect that further threatens urban food security and the ability of the urban poor and vulnerable to remain in the city. Land has increasingly become expensive for an average urbanite in Lusaka besides the reduced access to land-related resources.

As indicated in the findings of the study in chapter four, urban land use changes, precipitated by urbanisation and the growth in urban populations in Lusaka have brought about an erosion of historical, social, and cultural organisation and values. Furthermore, social ties and a sense of community belonging have been done away thanks to urbanisation and urban LUCs. This has further deprived the urban masses particularly the urban poor and vulnerable, of their right to community association as they have mostly been displaced by urbanisation processes and activities such as road and other infrastructure developments in the city. This is in tandem with

findings from similar studies conducted in different parts of the country by Mungu (2017) and Tumbama (2019). Where the urban poor and vulnerable have been able to salvage their dignity in relation to changes in urban LU, they have ended up as internally displaced persons with land power relations further stripping them of their rights to the city. More often than not, the poor and vulnerable groups have ended up leaving their homes/pieces of land due to foreign invasion of the city, see Li and Siame (2020).

Results presented in chapter four indicate that there have been too many foreign immigrants coming into the city and the country at large. Residents indicated that some of these foreigners do not even have papers that allow them to live, work and conduct businesses in Zambia. However, due to relaxed immigration policies, rules and regulations, Lusaka is filled with illegal immigrants. As alleged by Li and Siame (2020), foreigners have invaded the city and settled in by acquiring land and other properties from the local people using their financial muscle. Foreigners are equally taking advantage of the inadequacies in the land access and acquisition process/system and also through politically exposed persons or those who weld political powers through bribery and related means. Lupale and Hampwaye (2019); Mubanga (2019); Masumbu (2018) have in their respective studies, pointed out the inadequacies in the land administration and governance system that have given foreigners a leeway into land acquisition in the city/country mostly at the expense of the urban poor and vulnerable. The Chinese, West Africans, South Africans and the Rwandese were cited according to the findings of the study, as the most prominent foreigners taking over the city through land purchases and businesses. The influx of foreigners has in turn, pushed the urban poor and vulnerable into inhabitable and unsanitary living conditions that have not only compromised the quality of living but also led to overcrowding. Many urban poor and vulnerable people have resorted to living in the already congested and mostly poorly or not serviced areas as a way of maintaining their rights to the city.

Residential areas such as Obama lack basic social amenities and services such as government schools, health centres/posts, communal recreation amenities, defined communal markets and trading places, and clean and piped water supply among others. For some areas like Kalingalinga, Mtendere East, Ngombe and Garden Chilulu, waste management and water reticulation services were almost non-existent according to the results obtained by this study. This has a direct effect on urban residents and their quality of life and has consequently birthed various ills such as junkies, annual floods, and diseases outbreaks (for instance, the cholera pandemic that ravaged the city and claimed a lot of lives in the first quarter of 2024). Most of

the times, it is the urban poor and vulnerable who have felt the effects of these changes as they for instance, lack financial capacity to seek better and advanced medical care in the case of disease outbreaks. Sometimes, health centres and hospitals are located in faraway areas and the poor have no means of getting to the hospitals on time. If and when they do, our hospitals are poorly stocked with medicines and overwhelmed with the number of patients such that the doctor patient ratio is high, and patients are not availed personalised attention. In most government-owned hospitals, patients are mostly issued with a prescription that requires them to purchase medicines. There is, however, a glimpse of hope especially with the coming of the National Health Insurance Management Authority (NHIMA) as privately owned hospitals and clinics also offer services under NHIMA.

While some residents with the financial capacity have resorted to living in low density secure areas as a way of keeping safe in the city, the urban poor have had no option but to remain in congested areas with unfavourable living conditions. As a way of maintaining their rights to the city, a delinquent youth that has been birthed has resorted to various vices and activities that threaten the security of all urban residents. Lusaka is currently infested with junkies and all manner of bad vices including theft, street vending, indiscriminate waste disposal, noise pollution, traffic congestion, reduced security, and environmental degradation among others. These findings are consistent with studies conducted in Zambia and elsewhere by Simwanda (2018), Li and Siame (2020), Kombe (2005), Kamete et al. (2001). Urbanisation, urban LUC and urban population growth have been cited as leading causes of these vices by Herrmann et al. (2020); Lambin and Meyfroidt (2011); Foley et al. (2005). As the urban population grows, so does the need and demand for requisite goods, services and amenities. When these needs and demands are not met, the result is overcrowding, congestion and overall chaos as the poor and vulnerable devise ways (some unorthodox) of surviving the harsh urban economy and claim their RttC regardless of the means and the cost of doing so.

Urban residents maintain their RttC by engaging in different economic activities. For many poor and vulnerable people, they have had to either take up extra jobs or start up some sort of business or agricultural activities out of Lusaka. This is consistent with findings from Li and Siame (2020) who also retaliated that urban residents have engaged in other economic activities away from their regular jobs to survive in Lusaka. In Kenya, Bird et al. (2017) assert that the urban poor and vulnerable are continuously selling off their land out of desperation and vulnerability to survive in the city. Due to low educational levels or backgrounds, the urban poor have mostly remained unintegrated into the skilled urban job market leaving them

vulnerable to manipulation into selling their land cheaply by the affluent, politicians and foreign nationals. Monde (2023) points out that urban residents have over time, engaged in survival mode where they have overexploited the environment through various activities such as charcoal burning. It is now common knowledge that vices such as charcoal burning are detrimental to the wellbeing of the environment and result in different effects such as deforestation and ecological loss and scarcities.

Results presented in chapter four of this study indicate that most residents with inadequate financial resources have had to buy land in the neighbouring areas of Chongwe, Chibombo, Chilanga, Kafue, and Kabwe. This is in line with Chitonge and Mfune (2015)'s assertion that land in Lusaka has become extremely expensive and unaffordable for an average urban resident. This is the main reason why urban residents especially the poor and vulnerable are now opting for customary land in the surrounding areas and city fringes. Where this has still not worked, others have resorted to buying land in their villages where they go during the rainy season to plant maize and other crops that help with their food and financial needs through selling after harvesting. Residents have resorted to such measures due to lack of land in Lusaka, inadequate and expensive pieces of land when available and the silent preference of foreigners by landowners to locals as revealed by this study. Foreigners are preferred to locals over land deals and transactions as they have ready cash compared to the urban poor and vulnerable who must negotiate for part payments as and when they can afford. These results are consistent with Chitonge and Mfune (2015), Li and Siame (2020) who point out that urban residents are now going for customary land and later changing tenure to titled land as a way of surviving the harsh urban life to do with land.

With the increase in the urban population, has come the increased demand for urban land. As revealed by Kombe (2005), Simwanda (2018), Bird et al. (2017), the demand for urban land forces the urban poor into uninhabitable areas that mainly lack public amenities and services as they are not serviced. Results presented in chapter four indicate that some of the prominent residential areas are not serviced. Garden Chilulu, Ngombe, Mtendere East, Kalingalinga, Obama and even Meanwood Ibex Hill and Roma Park lack public amenities and services such as government-owned hospitals/clinics, schools, water reticulation and sewerage services that characterise well-planned residential areas. It is the increase in the urban population coupled with rapid urbanisation that dictate the changes in urban land use. Furthermore, it is the demand and change in urban land that pushes the urban poor and vulnerable into marginalised areas, a compromise of their RttC as observed by Bird et al. (2017), Chiwele et al. (2022), Thuo (2013).

The CUT posits that more and more people are living or will be living in urban areas soon due to the global urbanisation of cities and urban population growth. More and more people will continue living in urban areas, Lusaka inclusive because the world is moving towards boundaryless urbanisation of global cities. Regardless of the increase in the urban population and the resultant urbanisation and urban LUCs, all urban residents possess RttC by virtue of living and working in the city. This means that, all urban residents must thrive and live comfortably in the city and possess fundamental privileges and rights over their residential areas and the city at large regardless of their socio-economic status (Amin & Thrift, 2002). The findings of this study as presented in chapter four however, present a different scenario in that, the poor and marginalised do not enjoy certain privileges and rights inherent to urban residents such as basic social amenities and services. Instead, some high-density residential areas, due to urbanisation and changes in the utilisation of urban land, do not have ready access to water supply and sanitation, public health service provisioning in their areas, schools and hospitals, public recreation and play parks among others.

Kalingalinga, Ngombe, Mtendere East and Garden Chilulu reported having no piped and clean water supply while Obama, Meanwood Ibex Hill and Roma Park all use borehole water. For instance, drilling of boreholes in proximity compromises the quality of groundwater aquifers and overall environmental quality through contamination of groundwater reserves. It is unsustainable in the long run as sewer contents gradually mix with groundwater and negatively affect the water quality consumed by urban residents, a grave concern that was equally noted by Monde (2023). From the Hoyt model perspective, population growth and urbanisation consequently result in spatial expansion of the city outwards. The unfortunate part is that these spatial expansions do not consider forward and adequate planning that does not leave urban livelihoods and environmental wellbeing compromised. This is an oversight on the part of the theory in explaining the outward spatial expansion of the city and the resultant LUCs.

This study is of the view that urban residents, particularly the poor and vulnerable people's RttC have been neglected and ignored as revealed by urban residents through the study findings. This is the reason why most if the urban poor and vulnerable people have found themselves in uninhabitable living spaces with almost zero social services and amenities provision. Furthermore, Lusaka is now characterised by the urban divide; the have and have not, the rich and the poor within the same urban area. A drive through for instance Meanwood Ibex Hill, Kabulonga, Ngombe and Garden Chilulu will leave one wondering whether they are in the same city or not. Areas like Kabulonga and Meanwood Ibex Hill are well planned and

arranged with access roads for instance while areas such as Garden Chilulu and parts of Ngombe do not have proper access roads. RttC for the poor and vulnerable in Lusaka urban have been neglected to a point of non-existence leaving the urban residents merely fighting for survival. As one local artist put it *"survival ni nkondo"* (meaning that living in Lusaka is a daily struggle and fight)[12] Living in Lusaka for most of the urban poor and vulnerable people has been a nightmare as they have been reduced to survivors without RttC since their livelihoods have been compromised over time.

The findings of this study revealed that often, residents are barely informed when there are new infrastructure and LUC developments that affect them. Consequently, residents fear speaking up for fear of their lives and wellbeing as indicated in the study findings presented in chapter four. This is not what RttC entails nor advocates for since RttC deals with holistic rights and benefits of all urban residents irrespective of their socio-economic class (Pierce et al., 2016). Furthermore, the CUT emphasises the global urbanisation of cities as being all-inclusive as it does not reflect the Western idea and main affirmation that urbanisation reflects the economic efficiency of a given city according to Brenner (2018), Brenner (2009), Ruddick et al. (2018). CUT emphasises that the entire urbanisation process is multifaceted, includes urban LUCs, and calls for alternative ways of urbanisation that are socially inclusive, sustainable and do not ignore the urban poor and vulnerable people's RttC. Robinson and Roy (2016) affirm CUT's emphasis on the importance of understanding the ownership, distribution, use and access to urban land by urban residents. Unfortunately, this is not the reality on the ground as revealed by this study's findings.

This study's explanation for the neglecting of the urban poor and vulnerable RttC could be their lack of awareness of the rights that pertain to them by virtue of being urban residents. This then places the urban poor and vulnerable groups in areas that are inhabitable and yes, they settle for that as they believe that that is all there is for them, and they are somehow unworthy of the RttC that accrue to well-off urban residents. They consequently end up exerting more pressure on the environment (through various activities such as small-scale quarrying, deforestation etc) in a bid to maintain their urban citizenship and survive the harsh economic times. Monde (2023), using systems theory, explains that environmentally uneducated individuals and communities prefer to damage the environment/ecological wellbeing for immediate gain such as construction of houses in wetlands. Poverty, illiteracy

[12] https://youtu.be/IP7464IuR4U?si=uICgSHPGjjAWRopT

and lack of economic activities account for some residents' lack of awareness of the LUC and urbanisation processes taking place around them and ultimately, their RttC, revealed the findings of this study. Simooya (2012) further argues that an environmentally illiterate citizenry will have no incentive to take care of the environment owing to lack of understanding of its ecological importance and overall benefits. Mungu (2017), Bird et al. (2017), Kombe (2005), Simwanda et al. (2020) all affirm the contribution of poverty and illiteracy to the lack of environmental and their RttC awareness hence the destruction of the environment.

RttC calls for deliberate LUC, urbanisation and economic development policies that are all-inclusive of urban residents regardless of who they are. RttC demand for non-discrimination of any class or urbanites and calls for social inclusion and an increase in equality thereby achieving SDG no. 11 which talks about sustainable cities and communities (UN-Habitat, 2020). From the CUT lens, urbanisation encompasses more than just a city's LUCs, social, economic and spatial expansion but also the political, ecological, and even historical context of the city and its people (Nuissl & Siedentop, 2021; Oswin & Pratt, 2021). This is in tandem with the RttC notion that seeks to be all inclusive of all urban residents including the urban poor and vulnerable. From the CUT perspective, more and more people are living or moving to the cities hence the focus on global urbanisation. The global urbanisation of cities upholds the RttC of all urban residents and treats all urbanites as people deserving of the city residents' status regardless of their socio-economic status or the part of the city occupied. As the world moves towards global urbanisation, there is a need for all urban residents' RttC to be upheld as that is the only way the world will achieve social inclusion, sustainable cities (SDG 11 and Agenda 2063) that offer quality urban livelihoods devoid of inequalities, exploitation and power injustices (Brenner, 2009; United Nations, 2019).

Much as the CUT and the sector model explain the urbanisation of cities and the resultant urban LUCs in most cities worldwide, they do not account for the differences in the urbanisation processes in different cities. These theories assume that all cities are homogenous when in fact not. For instance, these theories do not consider the various socio-cultural dynamics and the historical contexts that shape different urban areas and set them apart from each other. No two cities are exactly the same meaning that, much as they may experience urbanisation and urban LUC, there will be definite differences in the way they will experience these processes. For instance, despite helping to explain and understand the urbanisation of cities and urban LUC, the CUT and sector model theories do not account for the RttC of the urban poor and vulnerable people in specific contexts like Lusaka urban. That then explains the negligence of the urban

poor and vulnerable people's RttC in Lusaka and across SSA countries where socio-economic classes are prevalent and inherent. This suggests that these theories, just like many others, do not thoroughly address the complexities surrounding urban livelihoods particularly in the Zambian and SSA countries context. Somehow, the theories are deficient and African scholars must write their own narrative of urbanisation, urban LUC and the RttC of the urban poor and vulnerable to fit African cities and not Western cities as is the case now.

5.4 Urbanisation, Land Use Change and Urban Livelihood Strategies

Objective number three sought to explore how the urban poor and vulnerable groups meet their livelihood requirements and incomes in ways that are sustainable for socio-economic growth and development of the Lusaka Urban district. The achievement of this objective was made possible through data that was collected using questionnaires for urban residents (HH) and interviews conducted with key respondents across different government institutions, ministries and departments, CSOs, and NGOs in Lusaka urban district.

Respondents were asked a question on how they cope with urbanisation processes and LUCs in ways that are socially, economically and environmentally sustainable and how they contribute to the growth of the Zambian economy. Respondents gave various responses including engaging in second or third jobs where the odds allow, changing jobs and entrepreneurship. Many respondents agree that times have changed and with the changes, comes urbanisation and numerous changes in urban land use. They too, have had to somehow adapt and co-exist with the changes. According to the findings of this study, urbanisation and LUC have been hard on the urban poor and vulnerable who mostly lack the financial muscle and capacity to keep up with the challenges that come with that. This is consistent with findings from studies conducted elsewhere by Southall (2005), Kombe (2005), Kamete et al. (2001).

Some urban residents for instance, those with the means, have moved out of certain areas where security has been compromised due to these changes to more secure (gated) neighbourhoods such as Roma Park and Meanwood Ibex Hill. Meanwhile, the poor and vulnerable have had to change locations to other high-density areas and or houses within the same insecure communities. UN-Habitat (2016) argues that urbanisation and urban LUCs have created an urban divide characterised by gated communities for the rich and affluent and, slum dwellers on the other hand. Lusaka, like many cities in SSA, Lusaka is characterised by urban injustices and inequalities such as exclusion and deprivation based on socio-economic classes. Studies conducted both in Lusaka and elsewhere by Li and Siame (2020); Nuissl and Siedentop (2021);

Bird et al. (2017) also confirm that it is the urban poor who mostly bear the brunt of urbanisation and urban LUCs.

Findings of the study presented in chapter four indicate that some of the urban residents have accepted their fate, that they are poor with no capacity to cope with the LUCs and urbanisation. The acceptance comes considering lack of alternative options, the fear of some unknown danger or what might happen if they oppose and resist and, their perception that it's a free world where people can always do what pleases them regardless of the consequences on the other community members. These residents have no means of contributing to the socio-economic and environmental wellbeing of the city and the country at large. This resonates with findings from Kombe (2005); Bird et al. (2017); Ranagalage, Morimoto, Simwanda, and Murayama (2021) where some urban residents have no option but to accept the changes, survive alongside the changes as they believe that they have no say because they are poor and vulnerable. Such residents have accepted their lives as being helpless as they lack alternative coping strategies to changes that come with urbanisation and urban LUCs. Some of the residents fear 'doing anything' as they foresee some hidden dangers hence the adaptation and resignation as a coping strategy. Findings of this study indicate that certain sections of Lusaka residents would rather not speak out about anything regardless of the discomfort as they believe that speaking out is dangerous since they do not have any sort of protection from their leaders and the government.

Results presented in chapter four indicate that residents have had to wake up from their glory days when they could easily put-up vegetable gardens and practice backyard agriculture during the rainy season. Due to the increased urban population and subsequent growth, urbanisation and urban LUCs, the city no longer has land for backyard gardens which were a major source of income and food for the urban poor. Today, residents must buy their vegetables and fruits including maize and mealie meal at exorbitant prices from farms/farmers. Prices of fruits and vegetables have drastically increased due to distances covered by retailers and or farmers from the farms up to the retail markets. This was also noted by Nyawali (2018) and Abrahams (2010) in their respective studies. Prices of vegetables and fruits have further gone up in residential areas as traders also need to make a profit, recover their initial capital and transport refunds to the farms and city market.

This study is of the view that urban food security is currently threatened by the increasing cost of living and the urban poor are barely coping with the status quo. Other studies such Hampwaye et al. (2020); Simatele et al. (2012); Mweemba and Monde (2018); Holden and

Otsuka (2014); Appiah et al. (2019) as also attest to the threat of urban food security in Zambia and SSA due to urbanisation and urban LUCs. Besides, prices of all other essential goods/foods/services have been rising hence, residents must look for additional sources of income to meet their daily needs. This is consistent with studies conducted elsewhere by for instance Holden and Otsuka (2014) in three different countries, Appiah et al. (2019) in Ghana, Sumari et al. (2020) in Tanzania, Geyer Jr et al. (2012) in South Africa and Alemayehu (2016); Ogechi (2014) in Kenya. This is a clear indication of the need to utilise urban land sustainably to ensure that the threat to urban food security does not escalate further than the current status. If left unchecked, achieving SDGs and Africa's Agenda 2063 – the blueprint for the continent's sustainable development as envisioned by the UN-Habitat (2016) will be impossible.

The consensus from the residents from the findings of this study is that one source of income is economically unsustainable as it is inadequate and unable to meet the day-today needs of an average family. So, for residents who have historically been involved in business, they have had to venture into diversification of their businesses or even start new ones altogether to survive in the city. Residents have had to engage in fruit and vegetable trading and all sorts of businesses while others have taken up crafts and trades such as tailoring, carpentry, catering among others. Even with such efforts, large-scale traders such as shopping malls and the influx of Chinese goods have not been of much help as they have flooded the market and displaced the locals.

Li and Siame (2020) in their study confirmed the impact of Chinese and South African enterprises on the locals and their livelihoods. They further argue that local businesses have been greatly impacted and displaced to the extent of some of them collapsing. Many fruit and vegetable traders end up with their merchandise going bad due to overstaying and the pricy nature of ordering the same. Added to the Chinese and South Africans are the Rwandese shop owners mostly found in medium and low-density residential areas that sell everything from groceries to liquor, fruits, and vegetables, further disadvantaging the locals. The Lebanese nationals on the other hand, have taken over the block and pavers making business much to the dismay and disadvantage of the local small scale and medium business enterprises. This has further denied the locals the much-needed business and revenue which can help them to cope with urbanisation and land use changes.

It is, however, worth noting that sometimes, locals fail to run their businesses successfully due to poor work/business ethics, something that foreign owned businesses are clearly good at. This study is of the view that locals need to adopt better business management strategies and ethics

to compete favourably with foreign owned small-medium businesses, all things being equal. Rather than complaining and wining about the Rwandese, Lebanese, Chinese and South Africans mostly, the locals can learn from them and pick a leaf as that is what will offer environmental protection and conservation and contribute to the social and economic development of the city and country. As argued by Nuissl and Siedentop (2021); Brenner and Schmid (2015) through the critical urban theory, urbanisation and urban population will continue to grow and urban land use will keep on evolving. Consequently, the urban poor will continue to be displaced internally as cities continue to expand outwards towards the city peripherals and along the major transportation arteries even as LU keeps changing according to the Hoyt model (Hoyt, 1964). CUT also places emphasis on the global urbanisation of cities where urbanisation processes and urban population growth will continue to take centre stage regardless of the main actors involved. So, if foreigners are running businesses ideally meant for locals, then locals must be equal to the task and do the same as that is the only way they will be able to contribute to the growth of the city and the country.

While some residents have kept downgrading their housing needs as a way of coping with urbanisation and urban LUC amidst the growing urban population, some residents have adjusted their lifestyles too. Results presented in chapter four indicate that urban residents have on average, reduced their household food and grocery requirements in order to keep up with the current demands of modern life. Some residents intimated how they now buy a 12.5kgs of mealie meal instead of 25kgs as has been the trend for a long time now. Some traders in Ngombe, Kalingalinga, Obama and Mtendere East have resorted to ordering less merchandise due to competition from Foxdale and Kalingalinga malls coupled with Rwandese-run shops. Others are now living on a hand-to-mouth kind of life as it helps them to cope with the changes. This resonates with Li and Siame (2020); Kamete et al. (2001); Akubia (2019); Brenner and Schmid (2015); Kombe (2005) and the critical urban theory whose argument is that urbanisation, urban population growth and shifts in urban land have life-altering effects particularly on the urban poor and vulnerable. This is because, these groups of people lack the financial capabilities required to keep up with the changing times. Most of the time, these groups of people have no option but to settle in uninhabitable areas of the city such as slums or squatter compounds as the only option. In agreement with findings from Kombe (2005); Bird et al. (2017); Tacoli et al. (2015), Simwanda (2018), this study is of the view that the urban poor and vulnerable find themselves living in unserviced areas as that is what they can afford. Despite living in such locations, the urban poor and vulnerable are not able to provide

for their family's decent accommodation and meals including services such as education and healthcare.

Living in squatter compounds presents massive challenges. Residents mustwake up earlier to run errands and work twice as hard as their well-off counterparts in order to survive in Lusaka and maintain their RttC. As findings of this study revealed in chapter four, the urban poor for instance, subject themselves to unsanitary living conditions including overcrowding. During the rainy season for instance, areas such as Garden Chilulu, Ngombe and Kalingalinga experience seasonal flooding where sometimes, faecal matter from pit latrines rises to the surface and mixes with water in shallow wells consequently leading to diseases (such as Cholera and typhoid) outbreaks. In certain instances, residents are forced by circumstances to use plastics as toilets that are later disposed off anyhow and anywhere within the residential areas. Coupled with the indiscriminate disposal of all sorts of waste, these residential areas are normally unsafe for human habitation. This is consistent with what Kombe (2005); Bird et al. (2017) found out in Tanzania and Kenya respectively. These areas also lack a supply of clean piped water for domestic consumption and serviced sewer systems. Where there is water rationing through water kiosks, residents must wake up early to stock water for the day. In the absence of water kiosks, residents rely on shallow wells as they cannot afford to drill water boreholes due to lack of financial capacity.

Gated and well-off communities on the other hand, rely on borehole water, something that is not environmentally safe and sustainable. In line with the findings of this study, Monde (2023) argues that borehole drilling is contaminating groundwater reserves/aquifers and water recharge zones, a current and future threat to safe water for the city in the long run. Together with the concrete jungle being realised, the biophysical environment is paying a hefty price for it. There is massive environmental pollution and degradation whose effects are felt more by the urban poor and vulnerable who rely on the environment for their survival. The results of environmental damage and pollution, as revealed in this current study include among others, weather and climate change, habitat loss and fragmentation, various forms of pollution, seasonal flooding, and species extinction (Monde, 2023).

Various studies have equally been conducted that show that urbanisation, and urban population growth have life-changing effects on the urban poor and vulnerable and the biophysical environment (Lambin & Meyfroidt, 2011; Mather, Needle, & Fairbairn, 1998; Meyfroidt et al., 2013; Monde, 2023; Rudel, 2013). The biophysical environment serves different ecological and ecosystem functions that are essential to all life forms. As noted by Simooya (2012), there

is a need for an environmentally informed citizenry who will be environmentally conscious in their daily lives and quest for urban economic development. There is also need for policy formulation, implementation and monitoring that responds to the current urbanisation, urban population and urban LUC needs of our times. This will ensure a sustainable Lusaka (and elsewhere) urban space that is socially inclusive of all urban residents and upholds the RttC of every urban resident. These are prerequisites to the achievement of SDG No.11 and Africa's Agenda 2063 according to the UN-Habitat (2020).

Studies conducted in Lusaka by Li and Siame (2020); Chiwele et al. (2022) and elsewhere by Collier and Venables (2017); Lubowski et al. (2008); Tacoli et al. (2015) all point out the housing problem that emanates from an increase in the urban population and urbanisation. The current study found out that there is a housing problem in Lusaka particularly in high-density residential areas that house most of the urban poor. Peri-urban areas house about 70% of all urban residents in Lusaka (Chileshe, 2018; Chiwele et al., 2022). Residents have responded to this problem by moving to smaller houses with affordable rentals despite their huge families. For others who own houses particularly in areas such as Kalingalinga and Ngombe, they have put up their houses on rent. Furthermore, landlords have decided to rent their homes not to an individual family but to different individuals per room while others still are renting per bedspace. The argument advanced forward is that individual rooms and bedspaces fetch more money in rent compared to renting it out to one family. It is a good coping strategy that is being used by houseowners and landlords to feed their families and meet their livelihood requirements. Furthermore, this coping strategy contributes to the economic growth of the country although it borders on selfishness on the part of landlords who seek to maximise profits. Unfortunately, there is no way to stop them from doing that as Zambian operates under a free-market economy.

For most urban residents, hard work is a prerequisite to contributing to the city and national economic growth. Consequently, it has been adopted as a coping strategy by many urban residents. There are, however, residents who have resorted to religion as a strategy for coping with changes in urban LU and urbanisation. Instead, they are trusting God for a better day someday. Granted, Zambia is a Christian nation whose declaration is embedded in the national constitution. As results presented in chapter four indicate, some residents use their religious beliefs and the grace of God as coping strategies. According to the findings of this study, life is hard but residents' belief and faith in God has kept them amidst the changes in urban LU and urbanisation processes, a coping mechanism beyond physical and practical strategies.

From an economic growth point of view, this coping strategy is not good as it does not change nor improve the lives of urban residents. Instead, it further perpetuates poverty as residents do not work hard nor see the value of hard work (Simwanda, 2018). Moreover, the Bible (in James 2:26) admonishes Christians to combine faith with works as faith without work is dead. Zambia and SSA have been infested by religion to a point of hypnosis. As findings of this study indicate, Lusaka is a mess as there are more churches and drinking places dotted everywhere than there are factories and or skills centres. High and medium-density residential areas are filled with churches of all sorts. Responses from some KRs indicate that churches have now become a nuisance as they are a source of noise pollution through loud music and overnight prayer meetings. These modern churches are now a source of income and fundraising ventures rather than places of worship as followers have to sustain their *'papas'* (pastors) extravagant lifestyles. An average urban resident in Lusaka spends more time at church or running church programs/errands compared to their productive time. It is worth noting that there is nothing great that was ever achieved in life without any effort (work) so this mentality and coping strategy must be discouraged at all costs and replaced with productivity of some sort.

The difference between developing countries and the developed countries lies in our work culture, ethics and attitude, productivity levels and education systems that train Africans for 'white collar' jobs. On the other hand, the Western countries and others such as China and Japan for instance, train and orient their people for productivity. This study is of the view that it is plain laziness to depend on God and religion even for things that we can do for ourselves. As noted by Tacoli et al. (2015), Li and Siame (2020), Zambia and Africa as a whole needs a paradigm shift or poverty will continue to haunt residents for centuries to come. As cities everywhere move towards global urbanisation according to the CUT, there is a realisation that cities are not homogenous and as such, the need to understand the dynamic nature of urban space as postulated by Wilson and Jonas (2018). CUT argues that the global urbanisation of cities, compared to the urbanisation of individual cities is socially inclusive, democratic and sustainable. There is nothing socially inclusive, sustainable or democratic about reliance on religious beliefs without hard work. It is unfortunately, far from what is required and accepted of any urban resident who wants to maintain their RttC regardless of their socio-economic status (Brenner, 2009; Simone, 2020; Wilson, Boodram, & Smith, 2019).

The findings of this study indicate that urban LUCs and urbanisation processes have come with various security concerns. For instance, increased population has led to increased mobility and traffic congestion where residents now spend longer productive hours stuck in traffic jams.

Furthermore, the heavy reliance on transportation and fumes from automobiles is contributing to air pollution and ultimately contributing to health issues. These concerns are similar to what was noted by other studies conducted elsewhere by Venables (2018), Thuo (2013), Shi et al. (2018). Other key concerns raised and presented in this study results include; reduced personal and household security, noise and sight pollution, land degradation, environmental damage, mushrooming, and illegal drinking places, solid waste mismanagement, street vending, violence, liquor trading at every corner, theft and junkies.

Most of these vices are prevalent in medium and high-density residential areas. Similar trends and observations were made and documented in Nigeria by Bodo (2019), in Kenya by Bird et al. (2017), Kombe (2005) in Tanzania and Allsobrook (2019) in South Africa. To cope with these vices, residents with money have moved to more secure low-density gated communities such as Meanwood Ibex Hill and Roma Park. The urban poor and vulnerable who cannot afford to move have put heightened personal and household security measures such as getting home before nightfall, installing electric wall fences, keeping their doors locked at all times and most of all, avoiding moving at night to avoid attacks by thieves and junkies.

Results of this study indicate that junkies are a growing social and security concern in Lusaka which, if left unsolved, have the potential to cause chaos and massive problems for all urban residents. Results of the study presented in chapter four indicate that almost half the population are unemployed youths and young adults who resort to vices such as theft and armed robbery, heavy drinking. Others become junkies who are always terrorising and stealing from the residents. This resonates with findings from Kenya (Bird et al., 2017; Southall, 2005), Tanzania (Kombe, 2005), in India (Swerts, Denis, & Mukhopadhyay, 2018). Findings of this study further indicate that urban LUC, increasing urban population, and urbanisation have raised and left serious security concerns associated with high crime rates, greatly compromising personal, household, and community safety and security. With reduced security measures, urban residents are vulnerable to thefts, armed robberies and attacks especially in the night.

Some residents have opted to stay abreast with current affairs to avoid lagging behind where urban development and LUCs are concerned. Some environmentally aware residents have resorted to being up to date with current affairs and the urbanisation related urban land use changes in their communities as a coping strategy. Other residents still, have resorted to community action mobilisation and action for the environment where they organise their communities for occasional clean-ups. Results of this study indicate that residents have resorted to this measure as a copying strategy due to limited government intervention and the dangers

of environmental degradation further prompting community action as a coping mechanism. In her study, Monde (2023) established that environmentally aware residents possess skills and behaviours that prompt and enable them to protect their communities and the wider environment through various individual and community-oriented actions and programs. Simooya (2012) asserts that it is an environmentally informed citizenry that will act and exhibit positive behaviour towards their immediate and extended biophysical environment thereby protecting the environment. Jew (2016) made a similar discovery to do with the depletion of Miombo woodlands in Tanzania due to forest communities' overexploitation of forest services and goods. The destruction and depletion of the Miombo woodlands have been attributed to a lack of community ecological knowledge and further action that promotes positive community behaviour and resulting actions.

In Kenya, Alemayehu (2016) discovered the encroachment of Mangroves due to urbanisation and land use changes precipitated by urban population growth. While environmentally aware citizens will act for the environment as a way of coping with urbanisation and land use changes, the opposite is also true. This study holds the view that environmental awareness and knowledge must be encouraged and enforced on citizens not just as a coping strategy, but as a solution to most environmental problems, issues, challenges and crises. This can be enhanced through relevant legislation and or policies implementation and monitoring, deliberate environmental advocacy programs such as offering environmental education at all levels of education, use of local media, deliberate community environmental advocacy programs and activities among others. Urbanisation and land use change are dynamic and, as pointed out by the sector model, cities expand inwards (already existing urban spaces) and outwards and land changes use hence the need for concerted community mobilised environmental advocacy and action (Mekara, 2020). Community action and a shared sense of belonging enhances the idea of belonging and reduces free riders' problem that brings ruin to all. This will produce urban residents who can cope with land use changes that characterise and shape cities particularly in SSA countries.

Findings of the study presented in chapter four indicate that some residents have turned to education as a coping strategy to urbanisation induce land use changes in Lusaka. Residents pointed out that *'knowledge is power'* [*emphasis supplied*] and that being informed and educated will help their children to cope with urban land use changes. Being in the know-how and staying abreast of the land use changes in their respective areas and the city at large has been used as a coping mechanism as it psychologically equips residents with the ability to put

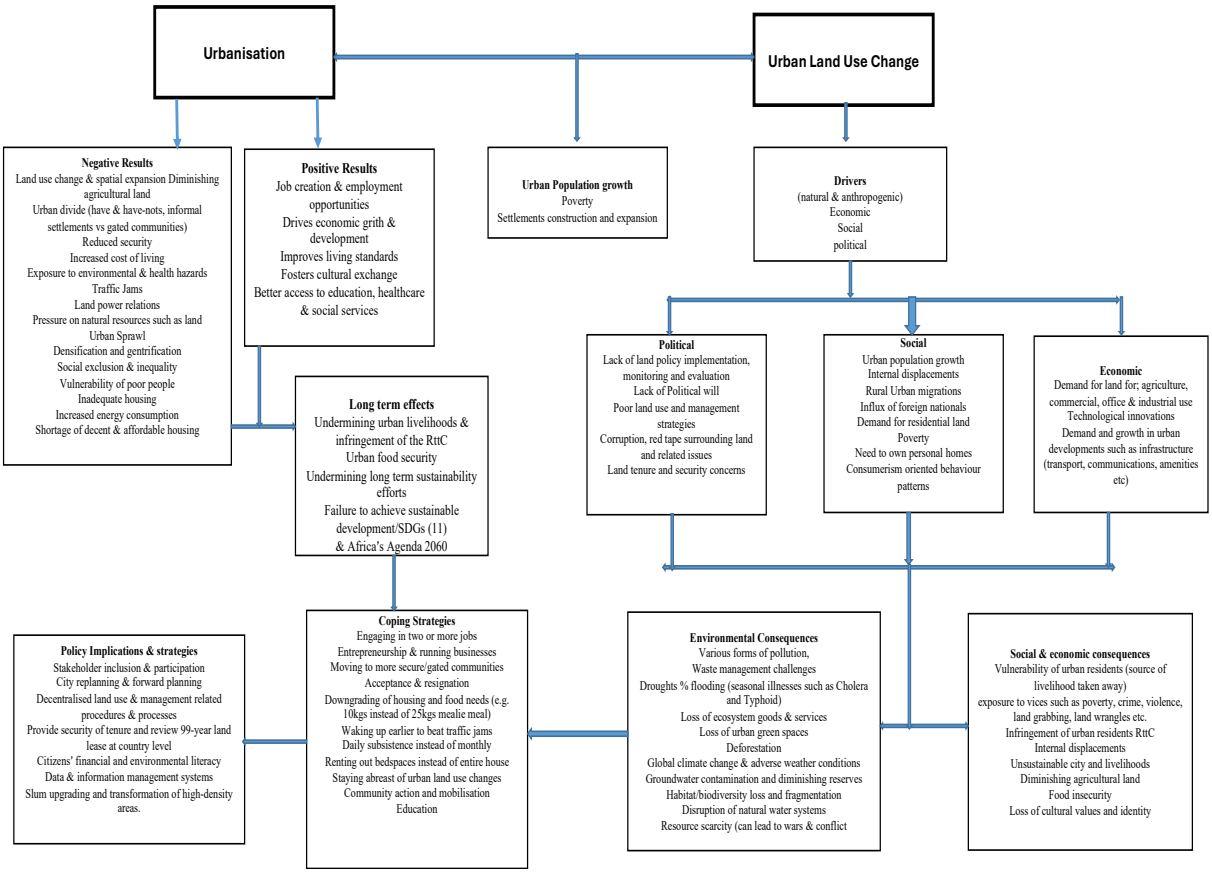
up with their changing physical urban environment. Educated children and or residents, according to the findings of this study, will be in a better position to either work or run personal and or family businesses, earn livelihoods and escape urban poverty perpetuated by changes in land use. Education gives hope and further helps to change things and scenarios in life.

Todaro and Smith (2020) are of the view that there is a direct correlation between education attained and the various employment opportunities available. They further argue that higher educational attainment levels predispose one to better knowledge, skills, abilities, employment opportunities, livelihood options and socio-economic status overall. In his study, Mwanza (2016) similarly asserts that education helps to reduce and alleviate poverty and further advocates for social inclusion of all urban residents in matters that concern them and their livelihoods. Education makes this possible through better employment opportunities and earning potential that are synonymous with an improved quality of life. This study is also of the view that education does change circumstances and state of mind as it broadens residents' thinking and problem-solving skills and capacity. Conversely, an educated citizenry will be able to adapt and cope with urban land use changes and where necessary, their financial and economic prowess can be used to navigate the ills that come with urbanisation and urban land use change. Education presents a better case for urban social inclusion as cities worldwide move towards the boundaryless and planetary urbanisation of cities as postulated by the critical urban theory. In this context, education will help urban citizens to work towards the achievement of a just and sustainable city in light of SDG no.11 that promotes sustainable urban livelihoods (UN-Habitat, 2020; United Nations, 2019).

As much as some residents have turned to education as a coping strategy, it is sad to note from the findings of this study that in most scenarios, some residential areas lack government schools and where they are there, school infrastructure is inadequate and or dilapidated. In some instances, schools are not up to date with teaching and learning materials as they are in short supply ultimately compromising the quality of education that is offered to the learners. This then acts as a barrier to access to quality education which is a universal human right that even urban residents in Lusaka and everywhere else in Zambia are entitled to. This means that the government must pull up its socks in enhancing the provision of quality education to all their citizens since rights accrue to every citizen of any given nation (Kuymulu, 2013). With government efforts and policies such as free primary, basic and secondary education, the future is bright as results of this study indicate optimism by the residents.

Figure 33 below presents a model that explains the intricate relationship between urbanisation and urban developments, urban land use change and livelihoods. Urbanisation is intertwined with urban land use change and livelihoods hence the need to look at the whole picture and not consider the three aspects in isolation.

Figure 33: Graphic Presentation of the Relationship Between Urbanisation, Land Use Change and Urban Livelihoods.



Source: Based on Field Data Surveys (2024).

5.5 Chapter Summary

Chapter five presented the analysis and discussion of the study findings that were presented in the previous chapter. The analysis and discussion were based on the objectives of the study. The chapter analysed and discussed the results of the study whose major finding were that the selected residential areas has undergone drastic changes in their land cover and land use changes over the thirty years period of study. The chapter equally presented and analysed the drivers of urban land use change categorised into political, economic and social drivers. The chapter also analysed and discussed the rights to the city pertaining to urban residents amidst

the rapid urbanisation and changes urban land use in the context of Lusaka. The chapter finally presented a model that was designed to represent the nexus between rapid urbanisation, drastic shifts in urban land cover and land use change, rights to the city and, urban livelihoods. The next chapter presents the conclusion and recommendations of the study.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Overview

This chapter is a presentation of the conclusion and summary of the key findings. Based on the study findings, discussion and conclusion, the study also makes some recommendations that are presented in this chapter. Further, suggestions for further research withing the fields of urbanisation, urban land use change and urban livelihoods are made. The conclusions and recommendations are based on the findings, analysis, and discussion of the findings of this study.

6.2 Summary of Key Findings.

Based on all the findings of this study, the study findings are summarised in the following way:

Significant changes in urban land use have occurred over the three decades of the study. Land use changes are still taking place and will continue to take place as human urban populations are increasing. All areas that were considered for the study had undergone tremendous changes in their land use and land cover. There were changes in all the classes of land use and land cover change that were considered. Results indicated an exponential increase in the land covered by the built-up class of land use and land cover in all the seven residential areas and the entire district. In all the residential areas and the district, built-up had increased by about 90% compared to the initial year of the study, 1990. On the other hand, all the other classes have reduced to an extent where in some instances, they have completely been overtaken by the built-up area. All these developments and changes in the urban landscape have taken place at the expense of other equally important ecosystems such as forests and agricultural land. Consequently, Lusaka is now a concrete jungle as everywhere it has been built-up, and the building continues up to date.

Rapid urbanisation, urban land use changes in Lusaka urban district have come with both opportunities and challenges for urban residents. The challenges have mostly been felt by the urban poor and vulnerable people. Urbanisation and urban land use change through urban developments such as settlements and infrastructure construction have knowingly and unknowingly infringed on the urban citizens' RttC particularly the urban poor and vulnerable.

These groups of people often lack the physical voice and the financial muscle to counter developments that compromise their livelihoods and infringe on their rights to the city. Urban residents have had to adjust to the changing city landscape where most of them have been disadvantaged. Some urban residents have ended on the city fringes not out of their own free will or choice, but because of urbanisation, the associate urban developments and the evolving shifts in urban land.

Lusaka is now characterized by the haves and have-not, the affluent and the poor, gated, low density settlements and overcrowded informal settlements on the other hand. Lusaka is further characterised by increases in all sorts of negative vices that include crime (junkies), liquid and solid waste accumulation and lack of management of the same. Lusaka is riddled with social injustices, corruption in almost all sectors of society, resource (water, forests, land, natural resources, water recharge zones among others) urban food insecurity due to the diminishing agricultural land. All these challenges pose as infringements to urban livelihoods that are particularly felt by the urban poor and vulnerable people living in Lusaka urban district.

6.3 Conclusions of the Study.

The study concludes that Lusaka is rapidly urbanising and that in the context of this study, urbanisation is synonymous with urban land use change. Urbanisation has taken place with the corresponding shifts in urban land evidenced by massive constructions taking place all over the district including on the city fringes and the peri-urban areas. Almost all of the urban land has been lost to mainly urban infrastructure and human settlements (residential houses) construction. Various ecosystem goods and services, habitats, flora and fauna have been lost in the process of construction of various infrastructure. About 70% of the construction has been towards human settlements as a response to the growing urban population and the demand for settlements. The study is concluding that human settlements are a key driver of urban land use change in the wake of urbanisation and the increase in urban population growth. Human settlements and other drivers of urban land use change are propelled by gaps in land policies and related legislation and the enforcement of the same. The study further concludes that the current urban citizenry is to a large extent, environmentally illiterate, unconcerned and consumerism behaviour oriented. The main focus is real estate acquisition and the construction of social amenities at the expense of the common good and overall health of the biophysical environment.

The study is also concluding that urbanisation and urban land use change have far-reaching effects on urban livelihoods. As revealed by the study, the urban poor have felt the brunt of the rapid urbanisation of Lusaka district and the consequent urban land use changes. In some instances, these developments, much as they have been positive, have further rendered certain sections of urban citizens more vulnerable than before. Some urban residents have been pushed to the peri-urban areas and the city fringes as urban developments and changes in land use have displaced them from their original homes. As the urban space extends its spatial extent, agricultural land has been diminishing and reducing drastically. This has posed a challenge to urban food production and security, a threat to urban livelihoods and the realisation of SDGs particularly SDGs No.11, 2 and 3 respectively. Furthermore, the threat to urban food security poses a challenge to the achievement of the continent's Vision 2063, a blueprint for Africa's sustainable development.

The study concludes that urbanisation and the shifts in urban land cover and land use over the years, have infringed on the RttC for many urban residents. The urban poor and vulnerable have particularly felt the impacts of rapid urbanisation of the city, the changes in urban land use and the consequent infringement of their RttC. Through the lens of the Hoyt sector model and the critical urban theory, the urban poor are literally going with the flow, existing and not living their lives to their full potential as the city expands outwards and experiences densification within. The critical urban theory places much emphasis on the observance and respect of all urban citizens' rights to the city as its core argument is planetary urbanisation that is socially just and all-inclusive. CUT refers to the sustainable urbanisation of all cities worldwide, urbanisation that does not create class societies intra urban areas and unfortunately, the findings of this study are telling a different study altogether. As revealed by the findings, Lusaka is now characterised by gated communities, the have and the have-nots, the rich and the poor separated by their social and economic classes. Lusaka is unfortunately, stratified according to residents' socio-economic classes and characterised by the urban divide. This study holds the view that drastic steps have to be taken to correct the status quo and protect the rights of all urban citizens as these rights accrue to an individual by virtue of their being an urban citizen and not their socio-economic status.

There is need to consider the whole picture and not just look at the problem as that of urbanisation, urban land use change, urban livelihoods or urban residents' rights to the city. This study is of the view that solving these problems requires a deep ontological positionality that requires addressing the problem from a causal link rather than being reactive to the effects

as suggested by much of the literature. Otherwise, urbanisation will continue affecting urban livelihoods and the urban poor and vulnerable will continue to pay the hefty price as Lusaka and other cities continue to urbanise and change uses of urban land. Their rights to the city will continue being infringed and their livelihoods compromised should nothing change. With this, the achievement of SDGs and Vision 2063 will remain a dream from which Zambia will never wake up from.

6.4 Recommendations

Based on the findings of this study presented in chapter four, the following are the recommendations:

a) Policy Development, Implementation and Evaluation

The key recommendation of the study is to ensure that we have functional urbanisation, land use, and land management policies that will prioritise urban land whose utilisation and change of use will be sustainable. The current land policy for instance, has gaps that do not adequately protect the land rights and RttC of the urban poor and vulnerable groups. According to key respondents, traditional leaders are dissatisfied with the current land policy formulation as their views were not considered at certain levels of its formulation. A sustainable land policy, therefore, will ensure that the rights of urban citizens are protected regardless of their social class. This will equally protect the biophysical environment from undue exploitation to the extent of ending up with concrete jungles everywhere in the district. In this regard, policymakers must ensure that they come up with policies that do not favour nor disadvantage one group of urban residents over another. They must ensure the formulation of urbanisation and urban planning, urban land use and land management policies. These policies must be clear and concise to guide decision-making processes at all levels and stages. Clear policies will also ensure accountability of all stakeholders whilst addressing their various needs. Policies must not only be formulated but must also be properly implemented and further evaluated in the short, medium, and long term. There must be mechanisms that ensure continuous monitoring and evaluation of the implemented policies to ensure that they are relevant and responsive to the needs of urban residents at any given time. To achieve policies, rules, laws and regulations that reflect the needs of urban residents, there is urgent need to move from old archaic legislative frameworks that do not serve current

interests and needs to new laws, regulations, policies and acts that govern urban developments, urban land use and management.

b) Stakeholder Involvement and Participation

The study recommends the involvement of all stakeholders at all levels of policy formulation, implementation and evaluation. It is extremely important to involve and engage the various stakeholders involved in policy and decision-making processes at all levels. This can be done through public consultation and community engagement in reality not just on paper. In the past, as revealed by this study's findings, there was an absence of working individuals and groups in most of these processes. The study findings indicate that community members especially the poor and vulnerable are mostly left out for unknown reasons. Collaboration with and the involvement of all stakeholders is extremely important as that is the only and sure way of ensuring that policies and policy documents reflect the concerns and needs of urban residents. Stakeholders include government officials, policymakers, community representatives, members of parliament, councillors, CSOs and NGOs, urban residents, and vulnerable groups. This study emphasises and recommends community involvement and empowerment through participatory approaches to urbanisation, land use and land management policies to ensure that policy documents (such as the Integrated Development Plans and the Urban and Regional Planning Act) reflect the needs, concerns, and perspectives of all stakeholders. Efforts must be made to actively engage urban residents and their communities through public forums, consultations and participatory planning initiatives at all levels of planning, implementation, monitoring and evaluation. The driving force behind stakeholder participation must be the concept of inclusivity as that is the only way we can achieve a just and sustainable Lusaka city.

c) Sustainability and Urban Livelihoods Support

Government, through the relevant ministries and agencies must consider sustainability of its cities and urban livelihoods of its residents particularly the urban poor and vulnerable people. There is urgent need for financial and environmental literacy among the urban citizenry coupled with the provision of support for sustainable urban livelihoods. These can be achieved through livelihood support programs and services aimed at transforming urban livelihoods especially those of the poor and vulnerable groups. Deliberate empowerment programs (such as entrepreneurship, microfinance and, skills training) that diversify from agriculture dependence can also be introduced

to reduce the effects of urbanisation and urban land use change on the urban poor while providing economic stability and reducing social injustices. The government needs to consider maintaining both occupancy licences and land titles as a way of ensuring social justice and inclusivity for different classes of urban residents with different financial capacities and needs within Lusaka district. There is need for that delicate balance between the economic development of the country, environmental conservation, preservation and, social equity to be sustained. This can be achieved through the promotion of sustainable land use and land management practices that will promote and improve urban livelihoods. Social equity and urbanisation balance will also put in place, compensation mechanisms that will protect urban residents, urban livelihoods and will equally safeguard the rights of the urban poor and vulnerable communities in all urban expansion and development programs. Socially equitable urbanisation, urban land use and management will ensure the respect of all urban residents and their rights to the city. Environmental conservation will ensure environmental and ecological sustainability and, the provision of ecological goods and services. Sustainable economic development will ensure socially inclusive urbanisation that improves urban livelihoods and does not threaten urban food security in line with the critical urban theory. This will enable the realisation of SDG No.11 and Africa's Agenda 2063.

d) Data and Information Management Systems

There is an urgent need for good land use change and land management information and data management systems. The presence of these will ensure accessible, accurate, and reliable information since we are living in an information age. Additionally, there is urgent need for comprehensive mapping programs and land surveys, up-to-date record-keeping mechanisms that record land use change in real time and, spatial data infrastructure. This will usher in a seamless land management system that will be transparent and user-friendly. The government must further improve on the efficiency and effectiveness of land policies, land use change planning and management. There must be efficiency and effectiveness in the access, acquisition and registration of land acquisition and titling processing. There is also need for streamlined procedures with reduced red tape and, enhanced service delivery accompanied by government ministries and or agencies capacity building in urban developments, land use planning and management.

e) Review and Adjustment of the 99-year Lease

The government must review the 99-year land lease particularly for foreigners. Zambian land belongs to Zambians before outsiders. Foreigners who come in to engage in business must be given a maximum of a 15-year lease on land where they can be monitored and evaluated during that period. Good performance can then warrant an extension while the opposite can ensure that land is re-allocated to another deserving investor. This recommendation stemmed from the findings where almost 90% of land in Lusaka was given to Galaunia who was of foreign origin. This is the land that urban residents were later offered for sale at exorbitant prices by Galaunia's grandchildren. This is a huge anomaly that can never happen in a functional society and must be stopped at all costs as it renders urban residents vulnerable and compromises livelihoods. There must be land designated for locals only where they cannot sell the land but only bequeath it to the next of kin. In an even where the land or title holder has no relatives, the land can be handed back to the state or government for re-allocation.

f) Slum Upgrading and Transformation of High-Density and Peri-Urban Areas

There is need for deliberate slum upgrading programs and the legalisation of all informal settlements. This will bring sanity to the city and make it easier for the government to provide basic social amenities and services. The government must, through the relevant ministries and agencies come up with deliberate housing schemes and programs that will benefit urban residents particularly the poor and vulnerable. In most of the high-density areas, land is owned by mostly the urban poor and vulnerable. These people lack the financial capacity to transform their living spaces to habitable standards hence their willingness to sell to the highest bidder. The government needs to invest in high-rise buildings that will free up land that can then be allocated to other urban uses such as recreation, education, health and other social amenities construction. Some of the land can then be leased to investors with a limited-time lease of about 15-25 years. This will protect the locals from exploitation by the so-called investors who are busy buying massive tracts/plots of land. Urban residents in high-density areas do not have land for backyard gardens and they lack the provision of basic social services and amenities so upgrading their homes to high-rise flats wouldn't be a problem. Slum upgrading programs will make it easy for the government to provide such services like waste management, piped water reticulation and sewerage services. Families that own land can be issued with titles to their flats that must equally not be sold but can only be bequeathed to the next of kin. Brazil has favelas that use the same model of providing

low-cost urban housing. The urban poor and vulnerable also have a right to decent urban accommodation.

g) Political Will and Administration

The study recommends the need for political will as a key driving force in any effective urbanisation, land use and land management planning. Without political will, it is almost impossible to achieve any of the outlined plans, policies and programs. As a sign of good and political will, there is urgent need for collaboration and cooperation between line ministries that are involved in urban development, urban land use and management such as the Ministries of Land and Natural Resources, Green Economy, Local Government and Rural Development, and Infrastructure, Housing and Urban Development. Other government stakeholders are government agencies and departments including the local and municipal councils, ZEMA and the LPPA. This will also reduce duplication of duties and responsibilities, duplication of land titles documentation and the massive corruption that characterises the land system in Zambia as all loopholes in the system will be sealed. This will further ensure the reduction of red tape and an increase in efficiency and effectiveness in planning and addressing challenges for sustainable urban development, land use change and management.

h) Adoption of a Mega-city Concept

In order for Lusaka district to achieve sustainable urban development that will utilise and manage urban land conservatively, there is need to adopt the mega-city concept. Plans and strategies can be put in place where city planners acting together with the government and all stakeholders can work towards the realisation of this. Lusaka is growing spatially and population-wise. Pretending that this is not happening is tantamount to burying our heads in the sand. This is time to put in motion forward planning as evidence from the study findings presented in chapter four indicates that the current scenario regarding urban developments, land use change and management will only get worse if nothing is done now. Lusaka district's population is already dense and its spatial extent growing as evidenced by the study findings in chapter four. With adequate forward planning, planners and the government can work on the city transportation system and upgrade to a mega-city. Chongwe, Chibombo, Kafue and Chilanga can be urban centres within Lusaka urban district while new areas can be identified for urban development. This will in turn, improve urban livelihoods, make the city all-inclusive as we work towards the realisation of SDG no.11.

6.5 Suggestions for Further Research

Urbanisation, urban land use change and management are complex and multifaceted fields or topics that can never be exhaustively studied in a single study. As such, there is need for further studies to be conducted on various aspects that affect urban livelihoods beyond urbanisation, urban land use change and management. Based on the findings of this study and the recommendations, the study suggests further research in:

a) Perspectives on urbanisation and informal settlements in rapidly urbanising cities (to further understand the multifaceted challenges faced by the urban poor and vulnerable).
b) Urban Developments, Green Spaces and Livelihoods in Lusaka (the role of urban green spaces amidst urban developments in ecosystem goods and services provision and the enhancement of urban livelihoods).
c) Urban Land Use Change, Transport and Mobility in Zambia's Major Cities (To investigate the effects of urban land use change and management on urban transportation systems and urban mobility patterns).
d) Urban Development, Land Use, Climate Change and Resilience
e) Urbanisation and Health: The effects of urban land use change and heat islands on residents' health.
f) Urban Development, Agriculture and Food Security.

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Appendices

Appendix 1: Participant Consent Form

Participant Consent Form

(TELEPHONIC/ ONLINE/ ONE TO ONE INTERVIEW RESPONDENTS)

'Assessing the Impacts of Urbanisation on Land Use Change in Zambia: A Study of Lusaka Urban District'

by

Steriah Monica Simooya

I, ……, agree to take part in this research project as a participant.
I further agree to the following (please circle the applicable option below):

The research study was explained to me by the researcher and, I understand what this study is about.	YES	NO
I understand that my participation in the study is voluntary	YES	NO
I consent to the audio recording of the entire interview	YES	NO
I agree that the researcher can use direct quotations from my interview in their research report which will strictly be for academic purposes only	YES	NO
I agree that my participation will remain anonymous (my name will be withheld by the researcher and will not be mentioned anywhere in their report	YES	NO
I consent to the use by other researchers of the information that I will provide in my interview (subject to their own ethics clearance) but that my identity or any personal identifying information will be withheld	YES	NO

Name: ……...

Signature: …….

Date: …….

Steriah Monica Simooya



Date: ……..

Appendix 2: Participant Information Sheet

School of Geography, Archaeology and Environmental Studies

Private Bag 3, Wits 2050, South Africa Enquiries: **GEOGRAPHY:** TEL: +27 11 717-6503 · FAX: +27 086 651 6366
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http://www.wits.ac.za/geography/

Participant Information Sheet

Ref: 'Assessing the Impacts of Urbanisation on Land Use Change in Zambia: A Study of Lusaka Urban District'

Dear Sir/Madam,

My name is Steriah M. Simooya, a PhD student at the Witwatersrand University in South Africa. I am investigating Urbanisation and Urban Land Use Change specifically, '*Assessing the Impacts of Urbanisation on Land Use Change in Zambia: A Study of Lusaka Urban District'* under the supervision of Prof. Mulala Danny Simatele and Dr. Serge Nzalalemba Kubanza.

I am requesting for your voluntary participation in this study through an interview. If you are agreeable, the interview which will last for about 30 minutes, will take place at your office anytime between 08:00 – 17:00 hours during working days depending on your availability.

With your permission, your responses will be audio recorded and used for academic purposes only. The data obtained during the study will be encrypted and stored on a password protected computer, uploaded to my google drive and further deleted after five years. I will be the only one with access to the data during the five years.

The interview will be confidential, and anonymity will be upheld – your name or any identifying information/features will not be included in the research report. With your permission, other researchers may use the information that you will provide but your name and any identifying information will be withheld.

You are not obliged to participate in this interview, so your participation is voluntary. You do not have to answer any questions if you do not want to. Should you feel like withdrawing at any time, you are free to do so. Kindly note that no direct benefits will accrue to you for taking part in the study and, there will be no risk in you participating in the interview as the risks involved in this study are not more than what we experience in our day-day lives.

Upon completion of the study, the findings will be compiled into a research report that will be available on the university library website. Should you require the results of the study upon completion, I would be glad to share the study findings report with you.

If you have any questions, concerns, or complaints during or after the interview, do not hesitate to contact me or my supervisors using the details provided below. If you have any concerns or complaints regarding the ethical procedures of this study, you can contact the University Human Research Ethics Committee (Non-Medical) on hrecnon-medical@wits.ac.za.

Your sincerely,

Researcher: Steriah Monica Simooya, 2411302@students.wits.ac.za, +260979176984

Supervisors: Prof. Mulala Danny Simatele, mulala.simatele@wits.ac.za, +27-11-717-6602

Dr Serge Nzalalemba Kubanza, serge.kubanza@wits.ac.za, +27-11-7176515

Appendix 3: Sample Permission Letter Request



University of the Witwatersrand,

School of Geography, Archaeology and Environmental Sciences

The Town Planner,

LPPA.

4th October 2022

Dear Sir/Madam,

Re: Permission to Conduct Research at the Lusaka Provincial Planning Authority.

The above captioned subject refers.

My name is Steriah M. Simooya. I am studying for a PhD in the school of Geography, Archeology and Environmental Studies at the University of the Witwatersrand. I am seeking permission to do research at the Lusaka Provincial Planning Authority.

I am conducting research on Urbanisation and Urban Land Use Change specifically, '*Perspectives on Urbanisation and Land Use Change in Zambia: A Study of Lusaka Urban District'* under the supervision of Prof. Mulala Danny Simatele and Dr. Serge Nzalalemba Kubanza.

The research will entail collecting data from members of staff in your organisation. I will invite individuals from your organisation to participate in this study specifically, planners and or surveyors. If they agree, they will be asked to have an interview with me For example: answer questionnaires; be interviewed; focus group discussions. State how much time recipients will be required to set aside, and whether data collection will take place on the premises and/or during work hours. State whether participant's responses will be audio or video recorded].

Participants will be asked to give their written or verbal consent before the research begins. Their responses will be treated confidentially, and identities (their names and the name of the organisation) will be anonymous unless otherwise expressly indicated. Individual privacy will be maintained in all published and written data resulting from the study.

The results will be communicated through a research report and articles where necessary.

The research participants will not be advantaged or disadvantaged in any way. They will be reassured that they can withdraw their permission at any time during this project without any penalty. There are no foreseeable risks in participating in this study. The participants will not be paid for this study.

All research data will be preserved for 5 years after which it will be destroyed. During the 5 years of data storage and archiving, the data will be preserved anonymously for reuse by other researchers as and when needed.

I therefore request permission in writing to conduct my research at your organisation. The permission letter should be on your organisation's headed paper, signed and dated, and specifically referring to myself by name and the title of my study.

Please let me know if you require any further information. I look forward to your response as soon as is convenient.

Your sincerely,



Steriah Monica Simooya
2411302@students.wits.ac.za, steriah.mudenda@unza.zm, simooya@gmail.com
Cell: +260979176984
Supervisors:

Prof. Mulala Danny Simatele, mulala.simatele@wits.ac.za, +27-11-717-6602
Dr Serge Nzalalemba Kubanza, serge.kubanza@wits.ac.za, +27-11-7176515

Appendix 4: Sample Permission Letters

ZAMBIA LAND ALLIANCE
Plot No. 401A, St. Johns Road,
Makeni Bonaventure,
P O Box 51156, Lusaka, Zambia.
Tel: +260 967469581 Email: info@zla.org.zm

4th October 2022

To whom it may Concern.

RE. CONSENT TO BE A RESEARCH RESPONDENT.

Zambia Land Alliance (ZLA) is a network of NGOs promoting fair land policies, laws and land administrative systems, which take into account the needs of the poor. ZLA's mission is to be a platform for collective action committed to promoting equitable access and secured ownership of land by the poor, through lobbying and advocacy, networking, research and community partnership.

I write on behalf of ZLA to affirm that ZLA staff will be available to be interviewed by Ms. Steriah M. Simooya-Mudenda during her research on *PERSPECTIVES ON URBANISATION AND LAND USE CHANGE IN ZAMBIA: A STUDY OF LUSAKA URBAN DISTRICT.*

ZLA works with academic institutions to carry out its own research and is therefore keen to support other researchers working within ZLA's thematic focus.

Should you require more information on the work of ZLA or this consent letter, please do not hesitate to contact the undersigned on the following contacts: mobile +260 967469581 / email patrick.musole@zla.org.zm.

Your faithfully,



Patrick Musole
Executive Director
Zambia Land Alliance

Communication should be addressed
To The Surveyor General
Fax+260 211 253640
Telephone:+260 211 253640
+260 211 252288
+260 211 252323

Telegrams: LANDS

REPUBLIC OF ZAMBIA

In reply please quote:

No. MLNR/SD/101/1/3

MINISTRY OF LANDS AND NATURAL RESOURCES

OFFICE OF THE SURVEYOR GENERAL
P.O. Box 50397 Ridgeway
LUSAKA

7th November, 2022

Steriah M. Simooya
University of the Witwatersrand
Faculty of Science
Geography, Archaeology and Environmental Studies
JOHANNESBURG

Dear Ms. Simooya,

PERMISSION TO CARRY OUT RESEARCH

Reference is made to your letter dated 4th October 2022 on the above captioned subject.

The Ministry is interested in your study on Urbanisation and Land Use Change specifically, **'PERSPECTIVES ON URBANISATION AND LAND USE CHANGE IN ZAMBIA: A STUDY OF LUSAKA URBAN DISTRICT'**. The Ministry is in touch and works closely with academic institutions in Zambia and as such, is keen to assist with your research. You are therefore, permitted to carry out interviews with members of staff from the survey and Lands departments as they are the best suited to help you with your research. The Ministry will provide the necessary support through the relevant staff.

By copy of this letter, the Assistant Directors - Survey and Lands Departments have been instructed to coordinate your interviews with the members of staff.

Eng. Charles Pole
Assistant Surveyor General (SS)
For/**SURVEYOR GENERAL**

/jmn

LUSAKA CITY COUNCIL
OFFICE OF THE DIRECTOR CITY PLANNING

P.O BOX 30077 *TELEPHONE: 02 11 252997*

CIVIC CENTRE *TELEFAX: 02 11 252141*

LUSAKA, ZAMBIA, 10101 *www.lcc.gov.zm* *lusakacitycouncil@.gov.zm*

Our ref: CPD/CM/it/1/49

4th October, 2022

Steriah M.S Mudenda
School of Education
The University of Zambia
LUSAKA

Dear Madam,

RE: REQUEST FOR PERMISSION LETTER-YOURSELF

Reference is made to your letter dated 4th October concerning the aforementioned subject.

I wish to inform you that permission is hereby granted for you to interview members of the Department of City Planning as you conduct your research.

By copy of this letter, the Assistant Director City Planning-Forward Planning is instructed to receive you and coordinate your research.

Yours Faithfully

Chibesa Namwinga
DIRECTOR CITY PLANNING

People's Process on Housing and Poverty in Zambia



Washama Road Plot 106/2
Villa Elizabetha Lusaka
P.O. Box 36202
E-mail:pphpz@peoplesprocess.org.zm

"Coming together to fight poverty and Homelessness"

Steriah M.S Mudenda
The University of Zambia
School of Education
P.O Box 32379
Lusaka, Zambia

7 October 2022

Dear Madam,

RE: APPROVAL/ PERMISSION LETTER

People's Process on Housing and Poverty in Zambia (PPHPZ) will be glad to contribute towards your research as one of the key informants in the study. People's Process on Housing and Poverty in Zambia (PPHPZ) is a local NGO that was established in 2005 to support the work of a grassroots movement of people living in informal settlements to address challenges of land access, security of tenure, housing, water, and sanitation as well as other service delivery challenges. People's process also supports pro-poor planning, policy and practice influence through community-led approaches. In addition PPHPZ works with the academia in research and adding to the body of knowledge of urban poverty and other challenges poor communities face.

We look forward to contributing to your study.

Nelson Ncube

Country Coordinator

Telephone: +260 211 251505 /+260950710243
E-mail: lppaauthority@gmail.com

LUSP/PP/53/8/5

In reply please quote:
No.....

REPUBLIC OF ZAMBIA

LUSAKA PROVINCE PLANNING AUTHORITY

LUSAKA PROVINCE
P.O. BOX RW 50063
LUSAKA

12th October, 2022

Ms. Steriah M.S. Mudenda
University of Zambia
School of Education
LUSAKA

Dear Ms. Mudenda

RE: REQUEST FOR A PERMISSION LETTER

Reference is made to your letter dated 4th October, 2022 on the above captioned matter.

The Lusaka Province Planning Authority has noted your research on Perspectives on Urbanisation and Land Use Change in Zambia: A Study of Lusaka Urban District, and will provide any available open information that you may need for the success of your research project.

Yours sincerely,

P.P

Richard C. Mukozomba
Executive Secretary
Lusaka Province Planning Authority

Telephone: 211 250732/ 250528
Telegrams: LOC GOVT.LUSAKA
Fax: 252680
E-mail: ps@mlgh.gov.zm

In reply please quote:

No. MLGRD/101/1/39

REPUBLIC OF ZAMBIA

MINISTRY OF LOCAL GOVERNMENT AND RURAL DEVELOPMENT

P.O. BOX 50027
15101 RIDGEWAY
LUSAKA

10th October, 2022

Ms. Steriah M.S. Mudenda
University of Zambia
School of Education
LUSAKA

Dear Ms. Mudenda,

RE: REQUEST FOR A PERMISSION LETTER

Reference is made to your letter dated 4th October, 2022 on the above captioned matter.

The Ministry of Local Government and Rural Development has noted your research on "**Perspectives On Urbanization and Land Use Change in Zambia: A Study of Lusaka Urban District**" and will provide any available open information that you may need for the success of your research project.

Yours sincerely,

Nicholas Phiri
Permanent Secretary – Technical Services
MINISTRY OF LOCAL GOVERNMENT & RURAL DEVELOPMENT

\mm

Appendix 5: Ethical Clearance Certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Simooya

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H22/09/28**
PROJECT TITLE	Perspectives on urbanisation and land use change in Zambia: A study of Lusaka Urban District
INVESTIGATOR(S)	Ms S Simooya
SCHOOL/DEPARTMENT	Geography, Archaeology & Environmental Sciences/
DATE CONSIDERED	16 September 2022
DECISION OF THE COMMITTEE	Approved Risk Level: Minimal
EXPIRY DATE	21 November 2025

DATE 22 November 2022 **CHAIRPERSON** _____
(Professor J Watermeyer)

cc: Supervisor : Prof M Simatele, Dr S Kubanza

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to submit an amendment of the protocol to the Committee. **I agree to completion of a regular progress report. For Minimal and Low studies, this is due annually on 31 December. For Medium and High Risk studies, this is due twice annually on 30 June and 31 December.**

_____ _____/_____/_____
Signature **Date**

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix 6: Change of Title

UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

Private Bag 3 Wits, 2050
Fax: 02711 7176029
Tel: 02711 7176006

Reference: Ms Mpumi Mnqapu
E-mail: #Fac-Science-PG@wits.ac.za

01 September 2023
Person No: 2411302
TAA

Ms SM Simooya
Plot 1425 Napini Avenue off Palmdrive road, Chelstone.
Lusaka, Zambia
The University of Zambia, School of education, Dept of
LSSE, P.O. Box 32379, Lusaka.
10101
Zambia

Dear Ms Steriah Simooya

Doctor of Philosophy: Change of title of research

I am pleased to inform you that the following change in the title of your Thesis for the degree of **Doctor of Philosophy** has been approved:

From:

To: **Assessing the impacts of urbanisation on urban land use change: a study of Lusaka Urban District**

Yours sincerely

Ms Valerie John
Faculty Registrar
Faculty of Science

Appendix 7: Questionnaire for Urban Residents

Questionnaire for Urban Residents

I am Steriah M. Simooya, a PhD student at the Witwatersrand University in South Africa. As part of my PhD study, I am required to conduct research. I am investigating Urban Land use change specifically, the '*Perspectives on Urbanisation and Land Use Change in Zambia: A Study of Lusaka Urban District'* under the supervision of Prof. Mulala Danny Simatele and Dr. Serge Nzalalemba Kubanza.

As part of this project, I am requesting for your voluntary participation in my study which is very important. Your responses will be recorded and used for academic purposes only and will be uploaded to the University library website upon completion of the study. Kindly note that this questionnaire will be anonymous and as such, confidentiality will be upheld. Further, there will be no risk in you completing the questionnaire and no direct benefits will accrue to you for taking part in the study.

If you have any questions, concerns, or complaints, do not hesitate to contact me on +260979176984 or email me on 2411302@students.wits.ac.za. If you have any concerns or complaints regarding the ethical procedures of this study, you can contact the University Human Research Ethics Committee (Non-Medical) on hrecnon-medical@wits.ac.za.

Instructions:

- **Do not write your name on this questionnaire.**
- **Kindly respond to the questions as truthful as possible.**
- **Use a tick (√) or write short answers in the spaces provided.**

A. Demographic Information

1. Gender of respondent: a) Male [ ] b) Female [ ]
2. Age as at last birthday: …….
3. What is your employment status? a) Employed [ ] b) Unemployed [ ] c) Self-employed [ ]
4. What is your main source of your household income? a) employment [ ] b) business [ ] c) Other [ ] (specify)……
5. Name of residential area …….
6. Description of township: a) High Density Area [ ] b) Medium Density Area [ ] c) Low Density area [ ]
7. How long have you lived in Lusaka urban district? …….....
8. What type of accommodation do you live in? a) Rental [ ] b) personal [ ]

9. What is the highest level of education you have attained? a) Primary [ ] b) Secondary [ ] c) Tertiary [ ]
10. If your answer to (9) is tertiary, specify the level: a) Certificate [ ] b) Diploma [ ] c) Degree [ ] d) Masters [ ] e) PhD [ ]

B. **Lusaka Urban Land Use Changes**

11. a) Do you know what is meant by land use change? Yes [ ] No [ ]
    b) In your own words, what do you understand by urban land use change?.....
    .....
    .....
    .....
12. Are there any observable shifts in land use in this area and the surrounding ones since you started living in this area? a) Yes [ ] b) No [ ]
13. What shifts in land use in the community have you observed for the duration of your stay in this area? (Tick as many as applicable)
    a) Road construction [ ]
    b) Residential houses [ ]
    c) Agricultural activities (such as farms, smallholdings etc.) [ ]
    d) Social amenities (e.g. recreational, health, educational facilities) [ ]
    e) Business Amenities (markets, shopping malls, office complexes) [ ]
    f) Others [ ] specify……..
14. Which of the changes listed above (Q13) have greatly contributed to land use change in your residential area? ……..
15. On a scale of 1-6, rank the shifts in land use in order of prominence, with one being the highest/prominent one.

Land use change	Rank
Road construction	
Residential houses	
Agricultural activities	
Social amenities	
Business amenities	

Other (specify)	

16. What in your view, what has caused these changes in land use in Lusaka urban?.....
    .....
    .....
17. How has the land use change affected your household?.....
    .....
    .....
    How have the land use/changes in land use affected your community and Lusaka urban area? ……
    ……
    …..……..……
18. a) Where you and your household exposed to any health hazards in any way as the changes in land use were taking place? a) Yes [ ] b) No [ ] c) Not sure [ ]
    b) If yes, explain the nature of the hazard……
    …….
    ….……
19. a) Have there been any changes in your day to day living since the observable land use changes? a) Yes [ ] b) Yes [ ]
    b) If you answered yes, explain the changes …….
    …….
    …….
    ……..
20. a) Would you say that the shifts in land use have been beneficial to your household, township, and the surrounding areas? Yes [ ] No [ ]
    b) Justify your answer……..
    …….
    …….
    …….
21. a) Would you say that the shifts in land use in Lusaka are sustainable (they do not disadvantage the future generations)? a) sustainable [ ] b) unsustainable [ ]

b) If you answered unsustainable to 20a) explain why this is so…….....…….

…….……

……...……

22. How do you cope with the shifts in land use in your immediate area and the surrounding areas?.....

.....

.....

.....

23. Why did you choose these coping mechanism/s that you have outlined above?

…….....

……

…...……

C. Urbanisation and Urban Land Management in Lusaka

24. Whenever there's a change in land use, are you sensitized/consulted as urban residents? Yes [ ] No [ ]
25. If you answered yes to Question 24 (if your answer was no, skip to the next question), which organization/institution have been involved in your sensitisation? a) Government [ ] b) NGOs [ ] c) Private entities [ ] d) Others. Specify……
26. When you have land related queries/issues, where do you go? a) Government [ ] b) NGOs [ ] c) Private entities [ ] d) Others [ ] Specify……

…...……...

27. What is your understanding of land management? ……

……

…...…….

……...…….…

28. a) Would you say that urban land management in Lusaka is good? a) Yes [ ] No [ ] b) Explain your answer to question 29 above…….

……

……

……

c) If your answer to question 29 (a) was no, what are your suggestions for good land management in Lusaka?…….…….

……..……

……..……

29. Who oversee land related issues in your residential area? *(You can tick more than one)*

	Entity	**Tick**
1.	Government	
2.	Non-governmental Organizations	
3.	Community members	
4.	Individuals	
5.	Private entities	
6.	Others (Specify here)	

30. What is your understanding of urbanisation?

……..…...

……

…...……..……

31. What urbanisation processes have been observable for the duration of your stay in Lusaka?

……

……

……..……

32. How has urbanisation affected your household and the community you live in?.....

……

…..……..…

33. What would you say are the effects of urbanisation on urban residents in Lusaka?

…….

……

……

END OF QUESTIONNAIRE. THANK YOU FOR YOUR PARTICIPATION.

Appendix 8: Key Informants Interview Guides

Key Informants' Semi-Structured Interview Guide

QUESTIONS

1. What is your understanding of urbanisation and land use changes in an urban context?
2. What are the major urban land use changes that have taken place in Lusaka district?
3. What are the causes of the shifts in Lusaka's urban land use that you have mentioned?
4. How have the shifts in land use affected urban residents and their livelihoods?
5. How has urbanisation affected land use change in Lusaka Urban district?
6. What are the effects of urbanisation on urban land use planning in a wider context?
7. What land tenure system is obtaining in Lusaka urban district?
8. What type of land access and ownership is used in the Lusaka urban district?
9. What are the regulations that guide Lusaka urban's land use and land use change?
10. What are the restrictions on urban land use/land use change?
11. What are the Zoning regulations and how are they regulated?
12. What urban land use planning models are you using to validate change of land use?
13. To what extent is the current draft land policy a reflection of urban residents' concerns on land use change?
14. What role/s does your institution play in urban land use change policy?
15. To what extent did the youth, other government departments and the NGOs participate in the land reform policy process?
16. What challenges have been posed by land use change on urban residents in the city?
17. What has been the urbanisation trend in Lusaka urban district?
18. Coordination between different government departments, line ministries, NGOs, and stakeholders involved in land use planning.

Interview Schedule For Government Ministries

For the Ministries of Lands; Local Government and Housing (Planning Department); Lusaka City Council (City Planning Department) and the Lusaka Provincial Planning Authority.

1. What are your ministry's major roles, responsibilities and mandate regarding urban land use planning, administration, and policy formulation?
2. What are the key land policy and administration activities that your ministry/institution has been involved in in the past 30 years?
3. What is your level of involvement in urban land use planning, policy formulation and administration?
4. What policy or legal provisions guide your scope of operations as a ministry/institution?
5. What are the key land policy and administration activities that your institution has been involved in, in the past 30 years?
6. What are your ministry/institution's major sources of revenue?
7. Is the revenue enough to cover the institution's cost of operations?
8. To what extent does your institution provide resources for urban land planning and administration regarding equipment, training of personnel and policy formulation, implementation, and evaluation?
9. To what extent do you coorperate with line ministries, departments, institutions and relevant stakeholders on urban land use planning, administration, and policy formulation?
10. What is your ministry/institution's role in urban land use planning, administration decision making and policy formulation?
11. To what extent is your institution's involvement in land policy formulation and implementation?
12. Which focal persons in your institution/ministry makes decisions over urban land administration, particularly Lusaka urban LUC?
13. To what extent are urban land administration strategies put in place followed by land administrators?
14. To what extent do the land administration decisions, strategies and policies reflect the urban poor and vulnerable peoples' concerns?
15. How open or inclusive is the urban land use management decision making process to urban residents regardless of their social status?