# INTEGRATION OF THE ZAMBIA NATIONAL CLIMATE CHANGE POLICY IN CITY DEVELOPMENT PLANS, THE CASE OF LUSAKA CITY COUNCIL

By

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A Dissertation submitted to the University of Zambia in partial fulfillment of the requirements of the degree of Master of Science in spatial planning.

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I hereby solely declare that this dissertation is my work. Neither the material nor any part of the dissertation has been submitted in the past, or is being, or is to be submitted for a degree in the University of Zambia or any other University. All published work or material from other sources incorporated in this dissertation has been acknowledged and adequately referenced.

I hereby, submit this dissertation for examination for the Master of Science in Spatial Planning Degree at the University of Zambia.

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**Signature:** 

## APPROVAL

This dissertation, by Callista Gombera, has been approved as partial fulfilment of the requirements for the award of the Master of Science in Spatial Planning Degree by the University of Zambia.

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## DEDICATION

This thesis is dedicated to God the Father, the Son and the Holy Spirit. To the love of my life Tatenda Shumba, I thank you for believing that I could. To Mayah, Zane and Micah, thank you for your patience as mommy was working towards completing her academics.

## ABSTRACT

Making cities champions of climate mitigation and adaptation requires the downscaling of policies and instruments to local and city levels. The Zambia National Climate Change Policy in City Development Plans (NPCC) was designed for incorporation into the Lusaka City Council Development Plans for climate mitigation. This study contends that effective implementation of national and internationally agreed climate change instruments could lead to climate-resilient urban systems in Lusaka. Rethinking city planning approaches is a tool for repositioning cities to mitigate the effects of climate change. The NPCC was formulated and promulgated in 2016. It is a national-wide policy framework to guide development planning that addresses the challenge of climate change. The NPCC needs to be integrated with city development plans but however, the relationship between the two in Lusaka, like many other cities in Africa, is not always a direct one. This study sought to uncover the complexities in downscaling the NPCC into Lusaka city development plans and processes. Further, the study also sought to identify barriers to aggressive climate change response such as lack of finances and continuity to programs. as proposed in the NPCC. The study was conducted at key informant level at the Lusaka City Council. Further, secondary data was conducted through a review of literature involving the NPCC, the Local Government Act of 2019, Lusaka Master Plan, 7$^{th}$ and 8$^{th}$ National Development Plan, Lusaka Strategic Plan, LCC projects (concerning climate change response), LCC Annual Budgets, council minutes, Zambia Environmental Management act and the Urban and Regional Planning Act. A discourse analysis was conducted on each of these reviewed documents. The outstanding key words from discourse analysis were stakeholder participation and integration, research and development, climate-smart technologies, agriculture, rainfall, forestry, wildlife, tourism, energy, health, and waste. These categories were interpreted vis-à-vis the city development plans that are in effect within Lusaka. The findings were evident that the response to climate change in Lusaka is not direct on. There are complexities in downscaling climate response that include a lack of resources, localization of policies among others. There is a need for increased human resource capacity and improved LCC financing mechanisms. In addition, there needs to be improved inter sectorial communication, completion of the IDP, creation of a non-motorized transport policy, improved references to city development plans. In keeping with this notion, this study recommends that LCC may need to enact by-laws for greenery protection, technocrats' freedom, sensitization, and grassroots participation.

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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| **CDF** | Community Development Fund |
| **CSPTTNAM** | Concentrated Solar Power Technology Transfer for Electricity Generation |
| **CTCN** | Climate Technology Centre and Network |
| **DRRP** | Disaster Risk Reduction Plan |
| **EIAs** | Environmental Impact Assessments. |
| **FRACTAL** | Future Resilience for African Cities and Lands Project |
| **GHG** | Green House Gas emissions |
| **IDP** | Integrated Development Plan |
| **IPCC** | Intergovernmental Panel on Climate Change. |
| **LCC** | Lusaka City Council |
| **LCCSP** | Lusaka City Council strategic plan |
| **LCSUPS** | Lusaka Citywide Slum Upgrading and Prevention Strategy |
| **MCC** | Millennium Challenge Cooperation |
| **MFEZ** | Multi-Facility Economic Zones |
| **MP** | Master Plan |
| **NAPA** | National Adaptation Program of Action |
| **NCCAP** | National Climate Change Action Plan |
| **NDP** | National Development Plan |
| **SEI** | Stockholm Environmental Institute |
| **PPHPZ** | People's Process on Housing and Poverty in Zambia |
| **UN** | United Nations |
| **UNFCCC** | United Nations Framework convention on Climate Change |
| **UNZA** | University of Zambia |
| **WHO** | World Health Organization |
| **ZEMA** | Zambia Environmental Management Agency |
| **ZMD** | Zambia National Disaster Risk Management |
| **NPCC** | The Zambia National Policy on Climate Change. |

# CHAPTER 1: INTRODUCTION

## 1.0 Introduction

This chapter gives a general introduction to this study. It offers the foundation, basis and structure of the entire dissertation. The chapter provides the problem statement, aim of study, objectives and research questions, the study further highlights the significance of the study. The last section of the chapter is the conclusion.

## 1.1 Background of the study

## 1.0 Introduction

This chapter gives a general introduction to this study. It offers the foundation, basis and structure of the entire dissertation. The chapter provides the problem statement, aim of study, objectives and research questions, the study further highlights the significance of the study. The last section of the chapter is the conclusion.

## 1.1 Background of the study

The NPCC was necessitated by the growing concerns over the increased carbon footprint and its effects on climate change in Zambia. The increase in the concentration of greenhouse gases that emanates from industrial activities, the burning of fossil fuels, agriculture and deforestation. Herzog et al (2000) postulate that countries around the world are adopting policies that work to ensure they minimize the effects of climate change. This is supported by Jordan et al (2016) who argues that governments need to be intentional about climate change and its effects on the ozone layer. This necessitated climate friendly city planning which needed legislative backing to implement. Rodriguez (2022) points out that unless efforts are made to mitigate the effects of climate change many African countries will needlessly suffer the effects of climate change.

Drawing from examples of African countries like Kenya that has taken steps to deal with the effects of climate change. Of particular importance is the National Framework for Climate Services, (2023). This framework is meant to assist Kenya in involving and coordinating actors and stakeholders along the national climate services value chain to build and enhance current and planned management and programs, with the primary goal

of improving national climate services. Kenya came up with vision 2030 which is an action plan targeting various sectors which include agriculture (weather indexed crop insurance scheme), Livestock and pastoralism (documenting indigenous knowledge), Water Resources (de-silting rivers dams), forests (agroforestry-based alternative) and energy (safe sources of energy, geothermal.)

South Africa likewise adopted a climate change policy to mitigate against the effects of climate change. South Africa's plan includes a policy that focuses on risk reduction, mitigation actions with significant outcomes, sectoral responses (key actors in strategy formulation and implementation), policy and regulatory alignment; integrated planning, (mainstreaming of climate change response), informed decision-making and planning as well as technology research and development and innovation.

Likewise, Zambia also joined in the efforts to fight when it signed the Paris Agreement on Climate Change in September 2016 at the 71st Session of the United Nations (UN) General Assembly in New York. This only worked when significant investment is made in coming up with smart creative solutions that mitigate the effects of climatic change.

Britannica (2024) points out that effective climate proofing requires proper planning in urban centers. This is because many urban spaces are not well proofed to ensure that they adapt well to climate change. It is crucial to point out that the more compacted settlements are, the more energy demand and transport emissions are reduced. McEnvoy et al (2019) states that, considerations must be made for drainage systems to be intact in most urban centers. Planning must take place to make sure all cities in Zambia adapt and adjust to the requirement consistent with climate change. It is against this background that this research seeks to investigate how Zambia's climate change policy is integrating well into the Lusaka city development plans. The climate change policy was adopted at a national level, and it needs to cascade to cities and towns in Zambia for it to be adopted at a robust level. Implementation is very crucial and policy formulators are expected to breakdown the policy in ways that enable city planners and responsible authorities to take relevant action.

Zambia has started undertaking research in conjunction with different institutions such as the University of Zambia on climate response. Zambia has also recently started working

on the Integrated Development Plan to try and incorporate climate issues. This along with the current infrastructure that is being put in Lusaka such as the Bombay drainage are some of the actions that Zambia has started to take to dress climate issues.

*Figure 1: Bombay drainage source Bombay drainage project, Lusaka Times ( 2018)*

### 1.2 Problem statement

In recent policy and academic publications, the role of city planning has been raised as a tool for repositioning cities to mitigate against the effects of climate change. Rethinking city planning approaches to incorporate climate change has been raised as a key issue for city planners in Africa (Watson and Odendaal, 2013, Odendaal, 2012). After the 2015 Paris Climate agreement, many national governments have agreed to aggressively tackle the issue of climate change. In Zambia, the Zambia National Policy on Climate Change (NPCC) was formulated and promulgated in 2016. The NPCC is a national-wide policy framework to guide development planning that addresses the challenge of climate change.

To inform and guide climate change action at the local level (city), the NPCC needs to be integrated with city development plans. However, the relationship between NPCC and city development plans in Lusaka, like any other city in Africa, is not a direct one. The climate change governance framework for Zambia does not include the Ministry of Local Government and Rural Development and local authorities as key climate change action agents at the local level, but rather, national agents tend to drive various climate actions.

Thus, downscaling a NPCC cannot be expected to be straight forward process, hence, city plans may not always prioritize the implementation of the NPCC. Given the lack of city level climate change policy in Lusaka, there is a need to analyze the structures, processes, tools and intentions that facilitate or hinder the downscaling and implementation process of the NPCC in the city. Thus, this study seeks to uncover the complexities in downscaling the NPCC into Lusaka city development plans. The study seeks to identify barriers to aggressive climate change response as proposed in the NPCC at the city level. The significance of this research is that effective implementation of national and internationally agreed climate change instruments could lead to resilient climate-resilient urban systems in Lusaka.

### 1.2 Aim of the study:

To analyze complexities in incorporating the objectives of the NPCC into city planning processes and policies at Lusaka City Council

### 1.3 Objectives:

1. To assess the differences/similarities between the NPCC and the City Development Plans at Lusaka City Council
2. To identify the components of the NPCC that have been incorporated into city plans.
3. To investigate the barriers to integration of NPCC in city plans for Lusaka.

### 1.4 Research questions

i. How different or similar is the Zambia National Climate Change Policy from the City Development Plans for Lusaka?

ii. What discourses, policies and tools have been used to downscale and localize the NPCC in the city plans for Lusaka?

iii. How have barriers to integration of the NPCC in Lusaka city development plans been addressed in Lusaka city development plans?

### 1.5 Significance of the study

The Lusaka town carries the highest population amongst the Zambian cities. The effects of climate change have a direct effect on the people hence it’s an area that must be dealt with.

The City Council holds the plans which shape the city in terms of growth and expansion. In this view, it can be noted that it is important that the city expands in a sustainable manner that stands by the stipulations of the NPCC. The study aims to scrutinize these documents to identify instances where there is a need for intervention.

The findings will assist in analyzing the challenges that are being faced in the integration of the NPCC into the City Plans. This is of great significance to Lusaka City Council, the Environmental Management Agency, further academic research as well as the residents of Lusaka among other stakeholders. The findings of this study will be of use in ensuring that development policies are in line with the Climate Change response aspirations of Zambia.

### 1.6 Conclusion

The chapter introduced the study and offered the foundation, basis, and structure of the dissertation. This then is the structure of the dissertation; chapter one provides the introduction, background, objectives and significance of the study. Chapter two provides the literature review and theoretical framework. Chapter three covers the research and methodology requirements; chapter four contains the presentation of findings and chapter five provides a discussion of the findings while Chapter six presents the conclusions and recommendations. The next chapter presents the literature review.

# CHAPTER 2: LITERATURE REVIEW

## 2. Introduction

This chapter discusses literature on climate and climate change in cities. The chapter provides the conceptual and theoretical basis for the study. The chapter has two major objectives, firstly, to discuss cities as the vanguards of climate change and secondly, to discuss direct and indirect climate change response measures by cities. The chapter adopts a position that apart from being the major drivers of climate change, cities are also the most adversely affected by climate change. Thus, the chapter asserts that winning the battle against climate change requires cities that are proactive in both mitigation and adaptation initiatives. The chapter has eight sections, the first section is the introduction followed by the second section which is climate change and urbanization. The third and fourth sections are on climate change in cities – the Anthropocene era, climate change governance in cities respectively. The fifth section investigates climate change in cities while the sixth section is on the role of planning in climate change mitigation and adaptation. The seventh section highlights the barriers or challenges associated with policy implementation at the city level. The eighth section looks at capacity issues and the chapter end with the ninth section which is the conclusion.

## 2.1 Theoretical or conceptual framework:

| **Research question** | **Independent variable** | **Dependent variable** |
|---|---|---|
| How different or similar is the NPCC Change from the City Development Plans for Lusaka? | Developmental Plans similarities and differences to the plans | Indirect climate response by LCC |
| What discourses, policies and tools have been used to localize the NPCC in the city plans for Lusaka? | City Development Plans, budgets, and projects. | The level of localization and interpretation of the tools in day-to-day planning. |
| How have barriers to integration of the NPCC in Lusaka city development plans been | Types of barriers | Challenges and solutions to the challenges |

| | | |
|---|---|---|
| addressed in Lusaka city development plans? | | |

## 2.1 Climate change and urbanization

The National Geographic (2023) defines climate change as an extended alteration to regional or global climate patterns and the global temperature increase from the middle of the 20th century to the present. Climate change is defined by the IPCC (2014) as the change in precipitation, temperature, evapotranspiration, wind speed, cloudiness and other variables which are caused by the anthropogenic release of greenhouse gases.

Britannica (2024) defines urbanization as the process through which a big population settles down to live permanently in a small region to establish cities. McGranahan and Serthwaite (2014) define urbanization as a change in livelihood and land uses, the shift by the population from the rural to the urban areas leading to a decrease in the rural population and an increase in the urban population. This move is usually attributed to the search for greener pastures, services and amenities. According to McGranahan and Satterthwaite (2014), urbanization is the shift of the population from rural to urban settlements. Ruocco (2015) states that the African urban population has the highest migration pattern in the world where it is developing with an average growth rate of 3.2 % per annum. Ruocco (2015) in the same report states that almost all Africa's cities are currently located in areas that are exposed to at least one natural hazard.

UN-Habitat (2007) states that more than half of the global population lives in cities and towns and estimates that by 2050, another 2.5 billion will join. There has been a debate on scholarly desks as urbanization is mainly attributed to aspects of services rather than climate change (Bronen, 2010). According to Henderson *et al.*, (2017), most migrants who migrate due to climatic issues move from one rural area to the other, but the rural-urban migration is attributed to services.

Panel (2015) states that due to urbanization, the demand for resources such as energy is set to surge as urbanization results in economic growth which in turn leads to high

resource demands. Murshed (2018) states that more strain on resources such as energy consumption is increased as well as industrialization because of urbanization. Watson (2009) highlights that urbanization needs to be planned, if unplanned, it makes people more vulnerable to the distressing effects of climate change.

The World Economic Forum (2023) states that climate change will cause devastation and the poorest will be hardest hit. Godfrey and Julien (2005) state that urbanization is mostly unplanned in the developing world, hence, climate change effects are worse off. The water quality and quantity in Lusaka have already been affected by climate change, Hanjra *et al.,* (2017). It is stated by Cullis *et al.,* (2015) that the flow of fresh and safe water is now scarce. Morvaj (2011) indicates that cities occupy only 2% of the earth's surface yet they are occupied by larger populations and this phenomenon affects the balance. This occurrence shows the effects of urbanization on climate change, the more the people, the more the impacts of climate change. Dale (2008) states that the concept of urbanization reduces the urban green spaces as more impervious surfaces are created, this reduces the amount of evapotranspiration and heat reflux hence all the energy is turned into heat and is trapped in the atmosphere. Pauleit *et al.,* (2005) states that urban development leads to a change in the land cover, and this affects the climate in adverse ways if not planned well. In his study, Chapman (2017) found that urban growth has an impact on local temperatures. This is evidenced by the current temperatures which are normally found in the cities which are usually high.

Zhang (2016) states that the most recorded rapid urbanization situations are taking place in developing countries. In such cases, it can be noted that according to Aggarwal (2013) in his Dehli study states that governments are struggling to offer basic services to the people, and informality flourishes in such scenarios. Satterthwaite *et al.,* (2021) states that water, sanitation and formal housing remain a major issue and the increasing urbanization increases the levels of degradation to the already stressed environments. The IPCC (2014) states that the climate around the world is going to change even more in the years to come and this is mainly attributed to the human impact on the planet.

The ideas which are dominant in literature are silent on policy assertions regarding urbanization and climate change. The World Wildlife Fund (2024) states that good policy

and policymakers remain critical to realizing our climate goals. Moreover, one cannot attribute scenarios from another country to suit the scenarios taking place in another city, there is a need to look at what is transpiring in Lusaka and what policymakers are doing to resolve the same. It can be noted from the different schools of thought that in global South countries, there is little to no financial capacity to adapt, there is however no solution that has been proposed to resolve the urban climate change challenge. It can be noted that the combination of climate change and urbanization will be a threat to human lives and threaten possibilities for building prosperous and inclusive urban centers in Africa and other developing regions.

**2.2 Climate change governance in cities – the Anthropocene era**

The Anthropocene era is the era when humans have a deep influence over the biosphere (González 2018). The National Geographic (2024) states that the most recent epoch in earth's history during which human activity began to significantly affect the planet's climate and ecosystems is known as the Anthropocene Epoch. The effect of humans on the earth has accelerated as humans have the power to change the world. Butzer (2015) states that in this era, humans are the main cause of permanent planetary change. Merchant (2012) states that the planet has changed enormously and has moved outside of its natural elements. Robock (2012) states that in the 19$^{th}$ century, there was a lot of destructiveness and weaponry uses, the colonial empires presided over a large portion of the earth. The pair highlighted that the first and second world wars, followed by industrialization and atomic fusion came into play and there have been vast changes made on the planet earth due to the aspect of development. These are examples of anthropogenic effects on the climate. IPCC, (2014) states that in urban areas, anthropogenic climate change will impact most of the world's urban population. In this context, it means that the Anthropocene era is in the main drive or roadmap which marks the changes in the earth's form.

Pincetl, (2017) states that the drivers of climate change in the anthropocene context are human activities that are increasingly altering the earth's climate. Trenberth, (2018) states that human activities are the global and leading causes of climate change. Herzog etal (2000) asserts that an increase in the atmospheric concentration of greenhouse gases has

emerged because of human activity such as the burning of fossil fuels, deforestation, especially for human settlements and agriculture. To resolve this, Karolina and Cimpuku (2016) talk about the intertwined relations between Disaster Risk Reduction and Climate Change Adaptation which have prompted policy discussions and academic analysis on the importance of the integration of the two. According to the UNDP (2019), the impact of climate change has seen Zambia getting impacts through an increase in cases of seasonal droughts, dry spells, heat waves due to the increased temperatures, flash floods in residential areas among other issues. Rakodi (2002) states that challenges are mainly because of planning that follows development. It is henceforth noted that there is a gap in what the policy and the city plans depict. It is in this regard that there is uttermost silence on the analysis of the Lusaka City Plans concerning the NPCC.

### 2.3 Climate Change Governance in Cities

The Center for Climate Engagement (2023) states that effective climate governance ought to be a fundamental component of good governance. Anguelovski and Carmin (2011,175) "Urban climate governance refer to the ways in which public, private, and civil society actors and institutions articulate climate goals, exercise influence and authority, and manage urban climate planning and implementation processes". UNICEF, (2020) states that it is a process that is continuous for formally or informally discussing and negotiating with a diverse group of local governments as well as national governments. It goes on to allude that international organizations, NGOs, the private sector, and other social actors are also involved in these discussions for the sole purpose of promoting opportunities and prompting action to address issues of climate change. According to Andonova, *et al.*, (2009), climate governance refers to the various initiatives involving diverse actors at different levels of governance to address climate change issues. Bulkeley (2016) states that climate governance runs from global to local spheres. Pasquini (2019) states that local governments are often the closest entities for planning and implementing context-specific adaptation strategies when it comes to climate governance.

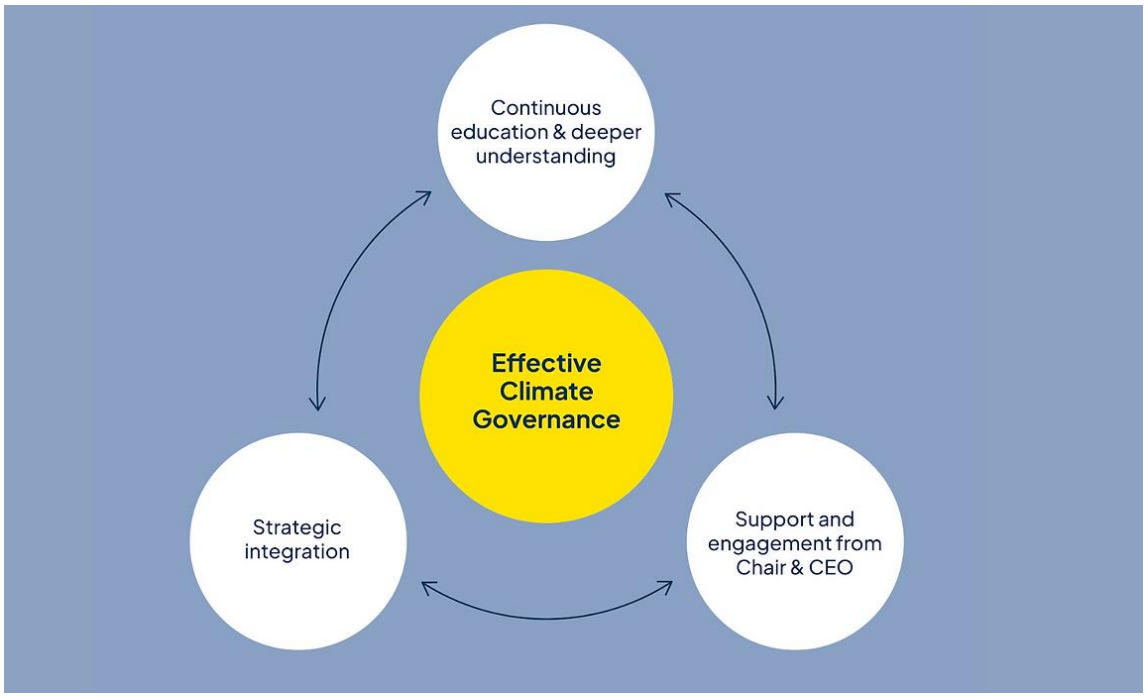



*Figure 2- Effective climate governance - Chapter Zero Brussels, The World Economic Forum (2023)*

Birkmann (2010) states that urban climate governance has a purpose to promote opportunities and prompt action to address climate change. This process is flexible and adaptive, it takes place at various levels thus the local, national, regional or international level UNICEF (2020). Jordan *et al.*, (2015) state that the nature of climate governance strengthens and promotes innovation, problem-solving capacity, improves learning, and encourages the development of solutions that benefit the city. Moreover, decision-making and public policy processes are made more efficient and mechanisms that can be adapted are created.

Urpelainen, (2013) asserts that climate governance ensures that there is coherence between local, national and international policies and plans. Urpelainen (2013) further states that downscaling of climate action and collaboration is promoted through climate governance as well as innovation and learning amongst actors and authorities. Jordan *et al.*, (2015) state that there is an integration of perspectives, knowledge and ideas shared between different sections of society. Climate governance establishes harmonized and joint objectives, mechanisms, policies and solutions. Van der Ven *et al.*, (2017) state that among the various actors that participate in climate governance are the public sector,

private sector, local government, civil society and academicians. There is however silence on climate governance in Lusaka.

It needs to be stated that impact and vulnerability for various parts of the city provides a basis to formulate adaptation policies. These adaptation measures are made by the city to safeguard locations such as schools, hospitals, old age homes and low-income neighborhoods which are typically occupied by vulnerable members of society. This study posits that city planners may need to consider past extreme climatic events, location specific climate information, vulnerability assessments and evolution of climate change and adaptation policy. This study further notes that climate models demand high computation power which simulates climate at a higher resolution. This, however, comes at a greater cost which tends to discourage urban planners.

This results in decreased use of Climate Change Adaptation models which tend to require course scale climate projections and parameterization of sub grid processes according to the Royal Society (2021). Due to these complexities climate downscaling techniques are employed instead. It is also imperative to downscale the climate outputs generated by the climate model when one considers the overall state of the future urban climate which is dictated by local climate along with the city's socio-economic evolution. Not only that but also, due to the complex nature of the socio-economic nature of the city, it is challenging to predict its evolution. Sid and Costa (2018) argue that generally the climate model fails to consider variation of land use simulations in future climate. As a result, the projected climate is easily influenced by the evolution of atmospheric variables while downplaying the feedback from the land surface processes. But there is still a long way to go in mainstreaming downscaling techniques into the impact assessment for the urban planning process.

Climate change commitments are supposed to travel from the global to the local level but according to Parry, *et al.,* (2011), Africa has low adaptive capacity, this assertion is also maintained by Nieng *et al.,* (2014) who states that high vulnerability levels and low adaptive capacity result from structural factors, particularly local governments with poor capacities and resources. No matter how much knowledge is known, a lack of resources

and climate governance structure in the local government and communities create problems as it affects implementation Revi *et al.,* (2014).

Responses that may address climate challenges such as hard infrastructural, community governance structure and high levels of awareness on climate changes effects are largely lacking in much of the global South Niang *et al.,* (2014). At times, the responses to climate change that are brought up by the external authorities do not take into cognizance political conflict and tension at city and community levels Goodfellow and Titeca (2012). As a result of these negative conditions, the picture which comes through gives the impression that climate change governance in African cities is weak. There is a need to undertake an in-depth climate governance analysis to better understand factors affecting the limited implementation of national and international climate change policy commitments.

Raleigh (2010) indicates that because of these conditions, African governments are at a severe disadvantage both independently and collectively in terms of international climate regimes, exhibiting engagement but weak climate agency. Moser (2010) states that when it comes to climate change negotiations, African cities have been known as having weak agency and weak representation. Thereby causing climate change governance to be less at the local level in most African cities.

Habtezion *et al.,* (2015) support this argument by stating that 34 African least developed countries have adopted the National Adaptation Programs of Action (NAPA), and the local governments need to play lead roles. He states that however, there are usually weak and tense local and central government relations in most African countries. Gore (2018) supports this assertion by stating that many African cities take interest in making commitments to take climate mitigation and adaptation action, however, there are very few well-documented cases of institutionalized adaptation.

Vincent (2018) wrote on mainstreaming climate change into development plans to ensure sustainability in Zambia. The article, however, does not take a close look at the policies and whether or not they are effective and being put to use both at the country and the city level. The article is silent on Lusaka Development plans hence there is a knowledge gap in that regard. Funder (2019) argues that the public servants are one of the major players

that are responsible for the everyday implementation of national climate change policies and associated programs on the ground as they link the policies to the people. There is a need to assess the policies' level of relation to the NPCC as well as the extent of the public servants' appreciation of the same policy as well as the rest of the players who are responsible for implementation or adherence.

Zambia's shift to a green growth pathway is being supported by the establishment of the Ministry of Green Economy and Environment. The government created a new pillar on environmental sustainability in the Eighth National Development Plan (8NDP) for the years 2022–2026.Andonova *et al.,* (2009) state that there has been a lack of willingness or capacity from the local government to deal with climate change while Xinhua (2018) generalizes that the African countries are now beginning to engage technology in managing climate change. The UN Climate Technology Centre and Network (CTCN) (2016) supports this claim by stating that from the time of the Paris climate agreement meeting in France in 2016, most African governments have started to seek technical support to tackle the issue of climate change. There is however no literature to assess Lusaka's climate governance. The report on Africa Regional Forum on Climate Technology in Nairobi (2018) stated that African countries have experienced the negative impacts of climate change hence they have now started developing a technological roadmap to tackle the case. This is highly debatable as it is not very evident within the city hence the need to do this study. The country needs an early warning system mechanism that can work against floods and droughts.

### 2.4 Climate change response in cities

Caney (2009:125) defines climate change mitigation as "an anthropogenic intervention to reduce the anthropogenic forcing of the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhance greenhouse gas sinks". According to Walsh *et al.,* (2011), mitigation mainly focuses on the removal of greenhouse gases from the atmosphere while adaptation focuses on the reduction of harmful changes that have already taken place because of climate change This concept has an agenda of agendas of avoiding the potential damages that are caused by climate change and ensuring that there is sustainability for the next generations. Kelly and Williams (2007) state that there is a

need today for planners to come up with designs, plans and strategies that may reduce greenhouse gas emissions in cities. Laganière *et al.,* (2017) state that the benefits of mitigation are not normally immediately seen but adaptation measures should be noticeable sooner and aid in curbing the risks associated with extreme events. Estrada *et al.,* (2017) are of the notion that the benefits of mitigating in cities have both global and local benefits which include local air quality. The UN (2023) states that s in climate change response can only be attained by taking coordinated action at the international, regional, national, and local levels

Moreover, in transport, Owens (1995) states that planning has to improve pedestrian, road, cycling and transit connections. Mun (1997) states that there is a need to ensure that there are no weak links in transport networks that are threatened by climate change impacts in terms of storm surges, there is the risk of bridges being washed away and roads may flood. So, the planning department needs to take that into cognizance. Another role is to identify and designate emergency networks so that there is a transport system in place (Mun, 1997). Roads and transport links that are meant for emergencies are essential (Litman,2006). These can be used during a climate change impact event to transport relief supplies, people among other needs, there is however no scrutiny that has been put in place to analyze our current local city systems.

Massey *et al,*. (2015,10) state that adaptation is "the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities". Ahuja (2007) states that to address climate change, there is a need to implement both adaptation and mitigation. Vallejoand and Mullan (2017) emphasize the need to create an infrastructure that adapts to climate change. However, in the current city systems, there is a need for guidance from relevant policies and development plans to ensure effective results, yet studies are silent on this cause. Klein *et al.,* (2005) state that adaptation involves a much larger variety of sectors such as human health, water supply and urban planning. According to Hall *et al.,* (2009). In cities, climate change adaptation requires citizens, governmental/non-governmental organizations and business interactions.

Climate adaptation in cities leads to effective climate-proofing in urban environments according to (Dawson, 2007). He goes on to state that in most urban spaces, emphasis is being placed on adaptation rather than mitigation and this means that we may continue to face the same event. McEvoy *et al.,* (2006) state that the more compacted settlements are, the more energy demand and transport emissions are reduced. This, in turn, increases inbuilt mass intensification and the urban heat island effect and poses problems for urban drainage. There is a lot of literature available in this regard, but in practice, this is not usually the case. Most of the urban centers in Africa are overpopulated and people are continuing to increase the building mass. This for instance leads to heat increases, which gets people to depend on the use of air conditioners and it increases emissions.

The objectives of mitigation and adaptation according to Hall *et al.,* (2009) are well aligned and clear to the aims of sustainable development. In Zambia however, it is vital to note that the process of designing and transitioning to sustainability is a challenge as development follows planning in most cities according to Simatele (2012). Urban planners are facing a challenge today of the need to deliver designs, plans and strategies that may aid in the reduction of GHG emissions as well as to adapt infrastructure systems and urban space to be climate resilient. They may design, but the systems do not follow at times the plans laid out.

Climate change scenarios need to be embedded in everyday planning solutions. It is essential to integrate both mitigation and adaptation measures and recognize that their implementation varies depending on the areas that need to be worked on. Climate change should be considered in cities alongside the broader issues of sustainability. Scholars, however, seem to be focusing on the rest of the body of knowledge but there is silence on the practical aspect of getting into action, policies and development plans.

### 2.5 Role of planning in climate change mitigation and adaptation

PIA Climate Series (2021) states that planning need to support actions that lessen vulnerability to hazards and boost readiness for response and recovery. It is the role or duty of the city planning to identify an area or zone and determine the different development types that are to take place in the zone (Bulkeley *et al.,* 2009). For example, planning is responsible for designating zones for housing, industries, and commercial

areas (Sorensen, 2005). Schipper (2009) states that climate extremes with potentially negative impacts; natural hazards, may turn into frequent disasters with impacts on people and their livelihoods. The planning sect is responsible for identifying hazard areas such as the flood-prone, steep slopes among others. They determine land use and development that suits the area taking into cognizance climate implications on all the plans that would be put in place (Wapwera, 2013). They take care of transport and overall community development. It is the role of planning to determine "no development areas where climate change impacts are likely to be most severe" according to the UN-Habitat (2014). It is planning that sets policy direction on infrastructure and service that is climate conscious. The literature available however does not state whether the planning sector in cities is fulfilling the policy directing mandate and this is a gap.

Roberts (2010) in his article on climate change in Durban states the role of planning to recognize climate change at a more formal level and identify the threats that come with it. It must raise public awareness so that everyone may act as well as build political backing regarding the same as is the case in (Pakistan *et al.,* 2016). Roberts (2010) goes on to support that planning determines the feasibility of development in certain areas to ensure that development does not take place in areas that are vulnerable to climate change. It is moreover the role of planning to ensure that there is improved water management infrastructure such as drainages and identify flooding hazards and directs the development of new infrastructure to safer places that are not exposed to climatic impacts (Wilson and Piper, 2010).

There is a need to have defense programs that are meant to protect existing development in disaster-prone areas (Birkmann and von Teichman, 2010). Planning has the role of identifying options to increase permeability. Most areas are now concrete jungles of paved areas, these areas are most likely to be prone to droughts and floods, so planners must ensure that they come up with permeability options (Jaffe,2016).

The planning authorities are also responsible for the Local Economic Development Plan or Strategy Rogerson. It is the role of planning to identify economic sector opportunities and identify economic development priorities in terms of jobs, capacity, and infrastructure. Planning has a mandate of ensuring the reduction of urban poverty levels,

especially for the climate change vulnerable groups such as the urban poor, children, and women (Obadan, 2001). There is however a gap in assessing these plans on how Lusaka city is coping regarding the same.

Another role of the planning sector is to promote climate-friendly and/or green development opportunities in all settlements (Gazzola *et al.,* 2019). They have a role of providing Informal Settlement Upgrade Plans as most of our African cities have several informal settlements where development happened first and planning followed (Abbott, 2002). The planning department, therefore, has the mandate to come up with policies and plans to improve infrastructure, sanitation, and services, and to identify potential climate change impact risks and responses to them. This calls for a need to assess policies and plans that have been put in place to create a climate-friendly environment.

Phiri (2015) states that some areas are high hazard areas, for example the Kanyama settlement. He states that it is the role of the planning department to identify and relocate housing from high hazards. In liaison with the Department of Public Health, city planning has the mandate to look at disease prevention and public safety improvements as articulated by (Duhl and World Health Organization, 1999). There is an emphasis on how the city planning department must identify and prioritize health risks that are associated with climate change. Serrao-Neumann *et al.,* (2015) emphasizes that improved planning outcomes through planning should also facilitate infrastructure and plans improvements that help reduce climate change-related public health impacts such as urban greening to reduce heat island effects and waste treatments according to Llosa and Zodrow (2011) also states that it is a planning mandate to ensure that there is a Disaster Risk Reduction Plan in place which serves to improve disaster response preparedness and early warning capacities. It can be noted henceforth that there has not been a study taking an intense look into Lusaka City Council and how the institution's operations are working towards mitigation and adaptation to issues of climate within its area of jurisdiction.

### 2.6 Barriers or challenges associated with policy implementation at the city level.

Leal *et al.,* (2018) indicate that several barriers are associated with climate issues at the institutional level from resources to capacity. Kalaba (2016, 43) states that concerning forestry policy, "barriers to policy implementation range from limited financial

resources, insufficient institutional capacities, and lack of inter-sectorial coordination and political influences". From this assertion, it can be noted that the barriers to climate change policy implementation at the city level need to be assessed.

Totin (2015) in his study on barriers to effective climate change policy development and implementation in West Africa observed that there's a lack of climate change policy understanding and awareness at the city level among the public and district-level staff members. Kilijin (1996) states that key actors need to have vast knowledge regarding policy documents in terms of content and how they ought to be implemented. to Hussein (2006) notes that there is also a lack of well-trained staff thus implementers should be involved so that they are aware and well versed in what is required of them. According to Pasquini *et al.,* (2013), the city staff members need sufficient knowledge of climate policies so that they can devise implementation strategies accordingly. From the literature, it can be noted that the level of training and knowledge that is available at the national level is different from the knowledge available at the city level. The key staff who are involved at the local level are not involved in the formulation of policies in the first place, there is no equipment available and conflict between the central and local government is the order of the day due to competing mandates.

Armin et al (2021) states that overcoming these barriers will ensure that smart cities provide strong services for improving livability, general efficiency, and sustainability. There must be communication and information dissemination regarding the policies at the city level to build policy literacy according to (Kalaba,2020). All plans are implemented at the local level hence the implementers must get intense training regarding the same (Ewan, 2003).

Ewan (2003) further alludes that the same policies need to be translated into local languages so that people may understand and avoid the use of deep technical language so that it can be understood by the local communities to support implementation. Relevant stakeholders also need to be involved such as non-governmental organizations, private companies, farmers, the local and traditional leaders. According to Totin *et al.,* (2015), this has been the case in the climate policy processes in Mali, Ghana and Senegal.

There also seems to be a recurrent disconnect between scientists and policymakers. Policymakers work hand in hand with scientists so that they may obtain guidance to make informed policies and decisions. According to Bradshaw and Borchers (2000), there is a need for a science-policy bridge which seems to be a missing piece in literature. Currently, there is limited literature connection can be seen in Seitz and Nyangena (2009) in the East African approaches where they state that this bridge is vital to produce platforms for science-based support and promote stakeholder interactions as being practiced in the East African countries. According to Lindsey *et al.,* (2015), scientists and policymakers need to be willing to give information so that working policies may be put in place at the end of the day. The national policy actors could get support from the people through obtaining valuable, context-specific insights hence the need for them to apply effectiveness in programs.

**2.7 Capacity issues in climate change response in African cities.**

Berman *et al.,* (2012) state that the capacity of local government to undertake a well-informed climate change plan remains low in African cities. This is manifested in many ways, but chiefly through low capacity and limited autonomy in financial, technical and institutional resources. For climate response to be effective, there is a need to engage in capacity building and support from qualified staff. According to Anaafo (2018), in Ghana, most spaces are vacant and difficult to fill due to the unavailability of qualifications. With staff missing and little support from the government to build capacity, it is difficult to manage climate change processes for policy implementation work. According to Tompkins and Adger, (2005), for African countries to respond to climate change, capacity development needs to take place effectively.

Raissa (2020) identified 19 climate change policies in 12 West African countries, yet some could not be located. This assertion shows that the policies are there yet African cities continue to be hit by climate change effects. In his study, Raissa, (2020) states that the adaptation plans from the countries did not elaborate on the same policies. This is a challenge because most policies that are now in existence require a clear implementation to realize the set goals. Ingwe (2013) states that Africa has plenty of policies that are rich in content, but the challenge comes at the implementation phase. This is so because

some of the policies are not designed to fit the local environment hence capacity is compromised.

Moreover, technological capacity is of importance, according to Komendantova and Patt (2014), there is a project in Namibia on Concentrated Solar Power Technology Transfer for Electricity Generation (CSP TT NAM). The main aim of this project is to increase the renewable energy on the country's grid. According to Forsell (2016), the DRC Second National Communication to the UNFCCC has projects underway such as solar electrification. Thus, countries are putting in place climate technologies but the literature seems to be silent on Lusaka. Most of these projects are being funded through foreign aid as governments do not have the technological and financial capacity to respond to climate change.

Another limitation is the financial constraints within the spheres. Eriksen (2008) states that the main holdback in Africa from obtaining low-carbon and climate-resilient development is the unavailability of finances. According to Parfitt and Riley (2010), it is quite a task to obtain the required funds as the African governments are already strained and in debt. there is a need for investment for cities to function hence finance availability is vital for programs to progress. Managa, (2012) argues that at times funds are distributed for sole purposes but they are not utilized accordingly. The access and availability to sustainable finances will allow African cities to deal with low-emission climate-conscious development strategies. There is a need to investigate the case within the city of Lusaka and assess the financial limitations. According to Barr *et al.,* (2010), access to funding is hampered because there is an unsuccessful adaptation to funds reception for example in Guinea, Guinea-Bissau and Cap Verde. Christensen *et al.,* (2012) state that another challenge is the difficulties in providing sound cost estimates and detailed information on the planned use of funding, thus the budgets.

According to Shackleton *et al.,* (2015), the financial arm for the developing cities is not usually strong enough to implement all the required actions to deal with climate change. A budget is one of the strongest implementation tools regardless of the scarcity of finances within the developing countries' councils. According to Duguma *et al.,* (2014), adequate funding is crucial for implementing policies and climate programs, however, the lack of

this resource has affected the running of programs in the African context. The national adaptation plans often overlook this reality in most cases. This means that there is underfunding, and cities are unable to implement their visions and programs. According to Totin, *et al.,* (2015, 3), "Accessing donor resources for the district is extremely difficult." Lawra (2014) argues that the governments usually do not support the local teams financially when it comes to issues of climate change. This calls for an investigation to determine the information on the ground.

The political arm needs to be present in climate change issues. Borins (2002) argues that gaining political support is a critical early step. This is so because they are the policymakers, and it is the role of political leaders to ensure that capacity is harnessed to build resilience in the affected neighborhoods. It is also the role of political leadership to mobilize resources and foster investments that will contribute to carbon emissions reduction. Wyk (2007) argues that contemporary African leaders are concerned with establishing, maintaining and/or restoring their power, as well as their influence and control over others. Chikulo (2000) Zambia has suffered negative political leadership through corruption and distrust of others, political leaders believe that others' actions and motives are not sincere, suspicious and should be doubted.

The threats that are being posed by climate change can no longer be ignored. Climate change is affecting everyone including the politics of any state. The political leaders, therefore, need to act to protect the communities and future generations. The president of Kenya in the Daily Press (2021) states that there is an existing failure by the African leadership to address the climate change challenges. There is a need to investigate the state of Lusaka in this respect. The political leadership should foster collaboration and make use of the continental ambition in resolving the climate emergency. Political leaders for instance must reject budgetary allocations which will ultimately increase carbon emissions and reallocate the resources for more climate-resilient purposes. The members of parliament have a role to resist funding or projects which will increase vulnerability to communities and the environment. Ban Ki-moon (2020) states that the political environment needs to ensure that there are nature-based solutions, energy transition,

enhanced transparency framework, technology transfer and climate finance. Hepburn *et al.,* (2020) argue that the Covid-19 pandemic is affecting progress in building climate resilience. This assertion is highly debatable as covid 19 only came into existence a year ago, there are supposed to be successful programs that were put in place before the pandemic started.

According to Mahamat (2012), a lack of infrastructure adds to obstacles to addressing climate change at the city level, it affects the ability of countries to attract and absorb adaptation finance. The lack of participation in capacity-building programs affects the ability to get funding as some of these actors can contribute to projects and programs. Very poor, basic infrastructure or road networks slow adaptation and discourage investments. Insufficient data availability and low expertise lead to obstacles to identifying appropriate funds as well as means to access them. According to the GEF (2011), the unavailability of local climatic data makes funding from organizations complex, slow and expensive.

### 2.7 Major gaps identified in literature

| **Author** | **Study** | **Outcome** | **Gap** |
|---|---|---|---|
| Ruocco (2015) | Urbanization and climate change in Africa: Setting the scene. In *Urban Vulnerability and Climate Change in Africa* | Most Africa's cities are exposed to hazards | silence on urban development plans and policies for mitigation |
| Jordan *et al.,* (2015) | Emergence of polycentric climate governance and its future prospects. *Nature Climate Change*, | climate governance<br><br>establishes harmonized and joint objectives, mechanisms, policies and solutions | no knowledge on Zambian governance: is it weak or it's a lack of resources |

| | | | |
|---|---|---|---|
| Parry *et a.l,* (2011) | Conclusions on climate change impacts and adaptations. In *Coping with Global Environmental Change, Disasters and Security* | Africa has low adaptive capacity. | Silence on policy effectiveness and implementation |
| Vincent (2018) | Developing and applying a five step process for mainstreaming climate change into local development plans: A case study from Zambia. Climate Risk Management, | mainstreaming climate change into development plans ensures sustainability in Zambia. | Silence on Lusaka Development plans |
| Kelly and Williams (2007) | Modelling tourism destination energy consumption and greenhouse gas emissions | planners to come up with designs, plans and strategies that reduce greenhouse gas emissions. | silence on the practical aspect of getting into action, policies and development plans. |

## 2.8 Policies that speak to climate change and development in Zambia:

### 2.8.1 Integrated Development Plans:

The People's Assembly (2022) states that an Integrated Development Plan (IDP) includes all of Council's short-, medium-, and long-term aims and objectives for social and economic growth. The goal of an IDP is to provide a framework for managing municipal finances so that basic services, infrastructure development, better spatial planning, and even disaster relief can all be facilitated.

In Zambia, each local authority must create an IDP. The allocation of resources and the

elected authorities' goals for the Council and its citizens is outlined in this plan. This strategy is "integrated" because, in order to get the greatest outcomes, it necessitates coordination between the public, different stakeholders, and local government. The IDP also makes sure that the best policies are in place to encourage public involvement and prompt service delivery, and that city agencies are cooperating toward common objectives

IDPs give special attention to improving rural areas and informal settlements, where people suffer from inadequate infrastructure and poor service delivery due to spatial planning impacts. The goals outlined in the IDP ought to improve the standard of living for the general public while also considering the existing circumstances and scarce resources. It serves as a bridge between the present situation and the ideal of fairly meeting everyone's needs in the community.

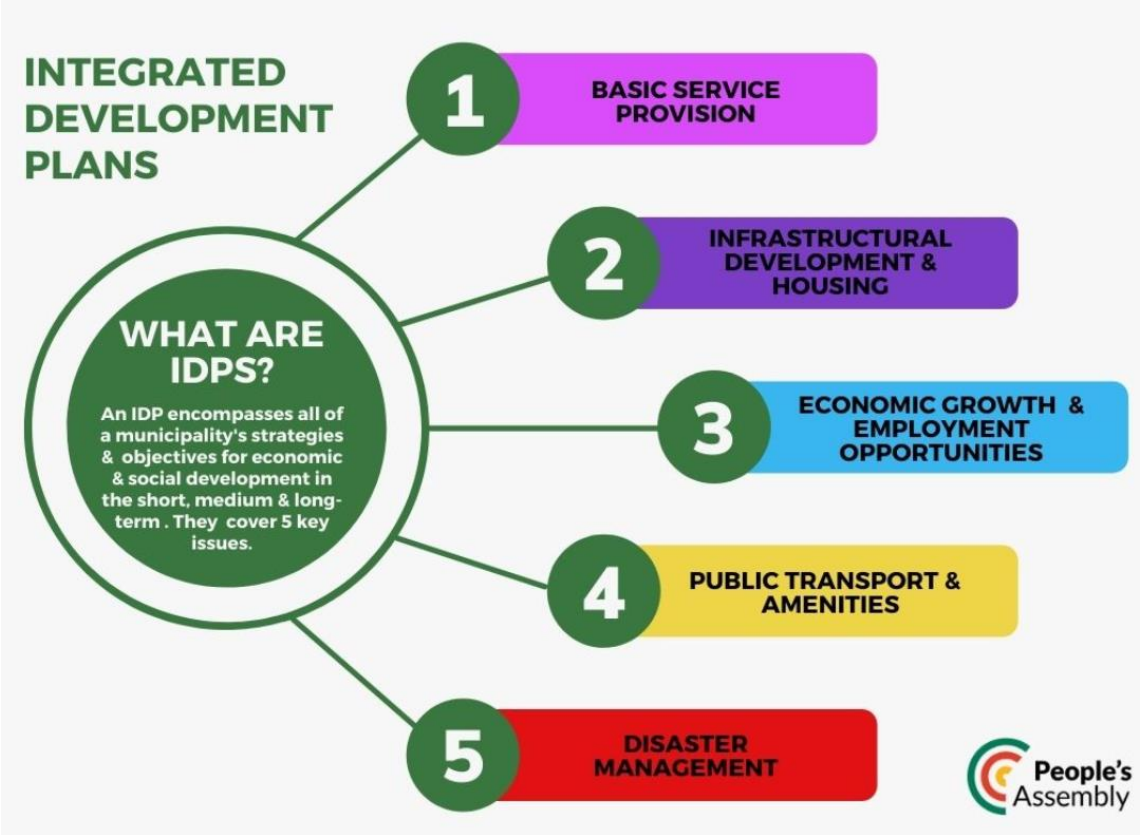



*Figure 3 Integrated Development Plans defined. Source People's Assembly (2022)*

### 2.8.2 National Development Plans:

Government of the People's Republic of Bangladesh (2012) states that the National development plans and strategies are created by governments using the thought requirements and preferences of their populace. According to Perch and Byrd 2014;National development plans, which typically have a 5-to 25-year timeframe, specify the desired development outcomes to be attained, foster consensus regarding the challenges and opportunities to accomplish those outcomes, identify the roles and contributions of various sectors and stakeholders in achieving the outcomes, and offer a strategic framework within which more in-depth planning and budgeting can occur on a regular basis. Plans for national development typically concentrate on generating jobs and the economy in order to lower the rate of poverty. As a result, these plans include goals related to GDP, employment rates, and poverty levels.

### 2.8.3 National Adaptation Plan (2023):

According to the Progress Report National (2022), the Adaptation Plan for Zambia was formulated in 2023. The UNEP supports national adaptation plans (NAPs) being developed by nations worldwide. Using the most recent findings in climate science, the NAP approach aims to determine the needs for medium- and long-term adaptation. Following the identification of significant climate change risks, the NAP process creates mitigation plans.

According to the UN Environment Program (2024) state that the Cancun Adaptation Framework (CAF) developed the NAP strategy, which was reaffirmed in the Paris Agreement. Most importantly, NAPs adhere to an ongoing, transparent, participative, and iterative process that is driven by the nation. The UN Environment Program (2024) state that NAPs have two main goals, which are to:

i. Increase resilience and adaptive capacity, one can lessen vulnerability to the effects of climate change;

ii. Encourage the cogent integration of adaptation to climate change into pertinent future and current policies, programs, and activities, especially development.

### 2.8.4 Nationally Determined Contribution (NDC)

On December 9, 2016, Zambia filed its first Nationally Determined Contribution (NDC) in 2016, which included adaptation and mitigation measures based on the nation's unique circumstances. According to the NDC (2021), this NDC was filed together with a conditional commitment to cut greenhouse gas (GHG) emissions and three programs were the focus of the mitigation actions:

(1) Sustainable forest management;

(2) Sustainable agriculture, and;

(3) Renewable energy and energy efficiency.

This NDC's adaptation efforts were concentrated on strategic infrastructure and health systems, strategic productive systems (agricultural, wildlife, and water), as well as improved capacity building, research, technology transfer, and financing for adaptation. The nation needs a lot of resources to meet the costs associated with putting these measures into practice.
With this submission, Zambia improves its Nationally Determined Contribution (NDC) by including transportation, liquid waste, and coal (production, transportation, and consumption) in the list of sectors covered by mitigation. It also develops the NDC's adaptation component by creating indicators that will allow the nation to monitor its progress in strengthening resilience in both physical and human systems and in adapting to changing conditions.

## 2.9 Conclusion

In conclusion, the chapter discussed literature on climate change governance and debates in cities, mitigation and adaptation, the role of planning, urbanization, direct and indirect approaches to climate repose in African cities and climate change governance in cities. The chapter went on to discuss policy implementation, policy implementation, capacity

limitations and a conclusion section. Where key points raised in the chapter are summarized and an introduction to the methods chapter is provided. The next chapter will focus on the methodology which was used to conduct the study.

# CHAPTER 3: RESEARCH METHODOLOGY

## 3.0 Introduction

This chapter seeks to discuss the methods used to conduct this research. The chapter explains what the researcher did and how she did it. The chapter will include the introduction, methods used: thus, case study and discourse analysis, primary data collection: sample size, sampling and sampling process, secondary data collection: documents, approach, and activities. The chapter also includes data analysis and methodological limitations: challenges, solutions to challenges and the chapter ends with a conclusion.

## 3.1 Philosophical perspectives

Martinich (2022) states that the philosophical study of the nature, sources, and boundaries of human knowledge is known as epistemology. The field is also referred to as the theory of knowledge because the term is derived from the Greek words epistēmē ("knowledge") and logos ("reason") according to Martinich (2022). The study assumes that the policies and plans are well written but there could be issues at the implementation stages that is affecting climate response in Lusaka. The types of assumptions being carried by this study include:

Epistemological: There are challenges with climate action in Lusaka. This knowledge can be acquired through the study of language and text from the primary and secondary data sources thus the assessment of the planning tools. This knowledge can be obtained to a greater extent through investigating the development control plans and interviewing the implementing parties. This knowledge will contribute to the body of knowledge, the Lusaka City Council and the central government in identifying the gaps that are at hand and possible interventions to address climate change.

Ontology: The nature if the reality is evident by the climate effects that the city is facing year in and year out and it exists.

This study uses social constructivism as its paradigm as it adopts the position that social processes cannot be objectively understood or known in an abstract way. Social phenomena are socially produced; interpretation is the only way to understand them hence

discourse analysis. Due to the inability to remain neutral toward their own ideologies, the researchers' thinking is also formed (Cottrell, (2014, p98). The typical method is inductive with a small sample, in-depth investigations, qualitative method of analysis and a range of data can be interpreted.

Social constructivism is essential to this study because the study is qualitative, and the researcher actively participated in the construction of meaning in order to discover meaning and knowledge. The researcher needed to get into the field and actively investigate the subject matter. She needed to analyse these findings and interpret the findings to address the research questions.

**3.1 Methods.**

A case study is a research approach that is used to generate an in-depth, multi-faceted understanding of a complex issue in its real-life context according to (Green and Thorogood, 2009). The case study was undertaken in Lusaka and focused on Lusaka as a case study. Discourse analysis on the other hand is a research method for studying written or spoken language concerning its social context. It aims to understand how language is used in real-life situations according to (Luo, 2020). These methods complimented each other in that the discourse highlighted the blueprints which ought to be followed by the city council and the case study gave the practicality of the NPCC footprint and the reality which comes with the implementation of the policy.

The study is qualitative in design meaning that it "facilitates the exploration of a phenomenon within its context" (Baxter & Jack, 2008). Qualitative research is defined by Shank (2002. 5) as "a form of systematic empirical inquiry into meaning." The researcher engaged into the inductive mode as the data speaks by itself. Qualitative research is a systematic and subjective approach that aims to explain daily life situations to give them meaning thus according to Burns and Grove (2009). The study sought to understand the social reality surrounding the articulation of climate change issues within the Lusaka City Council. Wolf and Moser (2011) state that, "the use of qualitative in-depth methodologies with small samples are capable of providing explanatory insight into the particular perceptions and levels of engagement of the group studied, as well as the group-specific barriers to more active engagement."

### 3.1.1 Case study

Case studies are qualitative designs win which the researcher explores in depth an area of interest thoroughly. Case studies are both time bound, and activity bound which means the researcher devoted a great amount of time to the study area. Key attributes of a case study are that it is a research strategy and not just a method of data collection. A case study involves a detailed study of the concerned unit of analysis within its natural setting. These factors led to the candidate sing this method as it addresses the subject study.

Since an in-depth study is conducted, the case study research enabled the researcher some leeway to use any method of data collection which suited the city planning and climate response context and purpose. A case study may use questionnaires, surveys, in depth interviews and participant observation as well as the study of documents. De Vaus (2017) states that a unit of analysis in a case study can be an individual, an organisation or a group of people.

There are many types of case studies that include:

i. Descriptive: The purpose is to describe phenomenon in detail in its real-world context. Yin (2019) argues that the descriptive case study requires a significantly large amount of detail.
ii. Explanatory case study: It looks at the causal factors to explain a certain happenstance. It pays attention to the "Why" and 'How' questions. It also pays attention to certain conditions to explain why a certain event happened the way it did or why it did not. Then there is the exploratory case study. It studies a phenomenon with the intention of identifying fresh research questions which can be used in subsequent research studies. With this understanding the researcher adopted a case study approach to the subject in question.
iii. What type of case study is this? Make clear. Check in this paper on types of cases studies.

This study was descriptive as the candidate sought to investigate details in relation to the subject study.

### 3.2 Data collection

According to Muhammad. (2016: 202), the concept of data collection refers to "the process of gathering and measuring information on variables of interest, in an established and systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes" The data collected in this study is qualitative hence non-numerical but rather in a sentence and word form. (Bhandari, 2020) states that data collection is a systematic process of gathering observations or measurements. It allows the researcher to gain first-hand knowledge and original insights into the research problem. (Basili, 1996) states that data collection is the procedure of collecting, measuring, and analyzing accurate insights for research using standard validated techniques. In this case, the researcher collected data through face-to-face interviews and depended on written policy and plans to draw key findings of the study.

### 3.3 Sampling, and sampling process

It's rarely possible for a researcher to collect data from every person in a group. Instead, a sample is selected to collect data. The sample is the group of individuals who will participate in the research. The researcher used nonprobability sampling method which involves non-random selection based on convenience or other criteria, and it allows the researcher to easily collect data.

Purposive sampling is the type of sampling that was used, also known as judgment sampling. It involved the researcher using her expertise to select a sample that is most useful to the purposes of the research. It helped the researcher to gain detailed knowledge about the Lusaka climate change integration practices.

A non-probability sampling method was adopted through judgment or purposive sampling. The researcher selected two key informants from all the departments at the LCC which are the city planning, fire, engineering, public health, administration, legal, housing, social services, finance and the Mayor's Palour. Interviews were conducted between the researcher and the directors and their deputies of the respective departments.

In these interviews, the researcher sought to understand the director's perspective regarding climate change. It was also essential that the researcher gets to understand the interviewee's perspective on the climate change practical reality within the city. Moreover, the roles of Lusaka as a city were established through these interviews as well as the role of the central government to realize the climate change response.

### 3.4 Primary data collection

Primary data collection is the process of gathering data through surveys, interviews, or experiments. Primary data is data that is collected directly from main sources through interviews, surveys, experiments among other sources. Primary data is collected from the source where the data originates from. It is regarded as the best kind of data in research. The sources of primary data were chosen and tailored specifically to meet the demands of this research.

Tools which were used in primary data collection include interviews. Interviews are a method of data collection that involve two groups of people, where the first group is the interviewer and the interviewee. Face-to-face interviews were used with open-ended yet semi-structured interview guides for primary data collection. This included several set questions to find opinions regarding the area of study. The questions and responses during the interview were verbal. In-person interviews were done with structured interview guides where questions were asked from interviewees in a face-to-face fashion. Open-ended yet semi-structured interview guides for primary data collection included several set questions to find opinions regarding the area of study. This was done through stenography, audio recording and written notes for those interviewees who consented to it. The departments which were interviewed are the city planning, fire, legal, housing, and social services, finance, engineering, public health administration and human resources as well as the Mayor's Parlor.

The purpose of the interview was to probe for ideas relating to the phenomena in question and to allow the investigator to access accurate data that is required by the study from the city council personnel. The candidate sought to investigate whether the NPCC is simplified and understandable enough to be understood by the city actors. The interviews

sought to find how financial distribution is benefiting climate response and whether there are any external institutions involved. The candidate sought to understand the city managing urbanization to realize its climate response program and how public participation is incorporated in the process.

The researcher thus looked at the policies and plans and proceeded to undertake intensive face to face interviews to understand how best the plans are being implemented at Lusaka City Council. The advantages of interviews are that in-depth information can be collected and the non-response and response bias can be detected. Moreover, the samples can be controlled. However, the process is more time-consuming, expensive and there is room for bias.

### 3.5 Secondary data collection Documents, approach, and activities

Secondary data is data collected by someone other than the actual user. It means that the information is already available, and someone analyses it. Sources of secondary data include magazines, newspapers, books, and journals. This may be either published data or unpublished data.

Secondary data collection was done through document analysis of the Zambia National Climate Change policy, the Master Plan, Strategic Plan, Environmental Management Act, the Urban and Regional Planning Act of 2015. Secondary data set is typically already cleaned and approved thereby showing authenticity. This helped the researcher to spend more time analysing the data instead of preparing the data for analysis. Moreover, there is sheer volume and breadth of data that is publicly available today. In this study, for instance, it can be noted that leveraging the findings from studies that the government has conducted, the researcher was provided with access to a volume of data that would have simply been impossible for the researcher to amass herself.

The candidate sought to understand the objectives that drives the planning documents in Lusaka, the critical issues within the document as well as the interpretability. The candidate also sought to understand if the issues in the legal tools are specific and whether there is action regarding the incorporation of climate change response.

### 3.6 Data analysis

This study is qualitative in nature and subjective, it is rich and consists of in-depth information presented in the form of words since it is in discourse. Analyzing this data entailed reading many transcripts looking for similarities or differences, and subsequently finding themes and developing categories. The researcher sought to gather how city planning is conducted considering climate change in Lusaka City. Hence the researcher investigated the planning documents that are used at Lusaka City Council and accessed them through the council administration and other departments such as the planning department. The documents that were analyzed are The Zambia National Climate Change Policy, The Master Plan, the Local Government Act of 2019, Lusaka Master Plan, Lusaka Strategic Plan, Lusaka City Council projects (regarding climate change response), Lusaka City Annual Budgets, council minutes, Zambia Environmental Management act, Urban and Regional Planning Act. These documents were strategically selected as they are the main documents that guide development at Lusaka City Council.

The researcher established the objectives which drive the documents, thus the main critical issues therein. The student looked at the interpretation simplicity of the documents in question and analyzed the establishment of issues that the city needs to analyze to check guideline adherence within the NPCC. The researcher also sought to establish the steps that can be taken to realize the practicality of the highlighted issues. Significant coverage with regards to water, energy, urban agriculture, tourism, forestry, and tourism was sought by the researcher. Moreover, practicality and justifiable reference at all to the NPCC in the city plans was highly investigated.

The researcher investigated if the NPCC is simplified and understandable enough to be adopted by the City plans drafters as well as the financial distribution within the council and how it is benefiting climate response. In addition, an assessment was made on the availability of external institutions involved in the process of drafting city plans so that most experts are involved in making sure that climate response and mitigation are realized. The researcher also aspired to learn how the city is managing urbanization to realize its climate response program and how public participation is incorporated in the process.

The investigator sought to understand the contribution that was made by the departments in the drafting of the city development plans and see how climate change is being tackled in the day-to-day running of departments. In addition, the interviewer established the things that have been put in place by various departments in trying to establish an effective climate response program. The critical issues of water, energy, agriculture, tourism, forestry, and wildlife were established through these interviews as well as the involvement of external institutions since climate change is a global thing. The involvement of the public in the whole process is the epitome of the success of the climate change initiative hence the researcher established this in the interviews.

For the discourse analysis, the steps that the researcher followed were first to investigate the storyline from the NPCC. Secondly, there was categorization thus coding which is a process that permits data to be "segregated, grouped, regrouped and relinked to consolidate meaning and explanation" (Grbich, 2007). The codes which came through are sstakeholder participation and integration (vulnerable groups, gender equality), research and development, climate-smart technologies, agriculture, rainfall, forestry, wildlife, tourism, mining, energy, health and waste. Mining was however not included as there is no mining in Lusaka. These categories were interpreted concerning the city development plans that are in effect within the Lusaka City Council.

### 3.6.1 Discourse analysis

Johnson and Mclean (2020) state that discourse analysis refers to a variety of diverse, primarily qualitative methodologies that are used to examine the connections between language use and society. The candidate selected this method in order research the relationships between language-in-use and the social world thus Lusaka. This was the best fit analysis for the subject study as it sought to understand the relationship between, the written policies and plans against the Lusaka City Council operations. Language is thus viewed as a form of social practice that influences social use. Heracleous (2009) states that several contemporary varieties of discourse analysis have explicitly been guided by Michel Foucault's theories about power, knowledge, and discourse. He notes that language is a contested terrain where power dynamics are unpacked. Discourse analysis offers a researcher meaningful means to investigate the subject in question.

### 3.7 Methodological limitations

#### 3.7.1 Qualitative data is not a statistically representative form of data collection.

The qualitative research process does not provide statistical representation. It will provide research data from perspectives only. Responses cannot usually be measured. The researcher dealt with this problem by ensuring that non qualitative data was utilized to measure attitudes, perceptions and opinions as they were availed during the study. The researcher utilized more and more sources to understand the subject and repeated revisions of findings to avoid repetitions.

#### 3.7.2Qualitative data collection also relies upon the experience of the researcher

The researcher encountered problems related to lack of data as the council does not readily avail such without having to take one through complicated bureaucratic processes. The information unearthed also lacked clarity on the matters related to urban planning as the researcher was made to know door after door to get the required information.

#### 3.7.3 The challenge of bias.

Data collection processes were affected by bias because the interviewees tended to be defensive and avoided sharing any information that may seem to implicate them. The researcher dealt with this problem by ensuring the participants that the information would be kept confidential.

### 3.8 Conclusion

The chapter sought to discuss the methods used to conduct this research. It included the introduction, methods used, thus case study and discourse analysis, primary data collection: Sample size, sampling and sampling process, secondary data collection: documents, approach and activities. The chapter exposed the researcher to vital lessons on strategy, patience and approach when extracting information. It proved very valuable and added more detail to the research endeavor. The next chapter seeks to look at the findings that came with the study.

# CHAPTER 4: RESEARCH FINDINGS

## 4.0 Introduction

This chapter will present primary findings as collected, collated, and analyzed based on methodology processes presented in the methodology chapter. The chapter presents data and information on the current legislation that is guiding Lusaka city council. The chapter goes on to the actions that the Lusaka City Council (LCC) has undertaken or planned to implement in the various city development plans to downscale and localize the intentions and programs that are contained within the Zambia National Policy on Climate Change (NPCC). The chapter seeks to speak to the research questions and objectives.

## 4.1 Institutional setup for Lusaka City Council

The findings show that Lusaka City Council's institutional setup does not have the essential capacity for dealing with climate change effects. To start with, the interviews found that there is no dedicated department for implementing radical climate change programs. Upon being asked whether there were agents that stood with climate response at the council, one responded answered "I haven't heard of a climate Officer in Council, unless if I don't know" Interviews (2020). The City Council has departments namely the city planning, housing and social services, public health, valuation, and real estate. The administration, legal, and engineering departments are also key departments within the council. These have various roles as described by respondents that indirectly incorporate climate change measures in the city at a very minimal scale based on the interviews undertaken.

It was confirmed from the interview session that the city does not have a designated position or a climate expert for climate action. The city depends on environmental planners for climate change response as mentioned by the interviewed personnel from the planning team. It was noted that most departments were convinced that the planning department was responsible for responding to climate change as one stated " Lusaka City does not have an obvious blueprint for climate response", council depends on indirect climate response in both institutional set up and staffing regards. This was also confirmed by the current Lusaka City Master plan and the annual budgets that were presented. These

only provide directly to environmental management issues that address climate action at a very low capacity.

The interviewees stated that Lusaka city planning department mainly focuses on the physical planning of the city. The planning department for instance facilitates planning permission for all development activities in the city. It is also the city planning department's mandate to monitor and compel developers to undertake development as per approved development plans. The housing and social services department has a mandate to oversee the markets, library services, community development and peri-urban development. It also ensures that there is adequate street lighting, waste management and sanitation management across the city.

The interviews from the Department of Public Health on the other hand found that this department focuses on the inspectorate, health education, pest control, housing, and social services. The LCC also has the valuation and real estate department that works on trading permits, lease agreements and land management. The administration department further focuses on the management administration, registrations and human resources management. The finance department manages the budgets and financial administration. The legal services arm caters for issues such as land tenure documents, land record cards, occupancy licenses and certificates of titles in conjunction with other departments like city planning and finance departments.

The engineering department is responsible for architectural and quantity surveying for roads. It is also responsible for the construction and maintenance of roads and drainage. The department also works on the preparation of tender documents for the installation of additional traffic signals. The engineering department is responsible for the provision of fire cover, rescue services and ensuring building developments are carried out by fire regulations. This department is also responsible for the provision of humanitarian services during emergencies and disasters such as the supply of water. The Mayor's Parlor along with the standing committees consisting of counselors cut across all departments in supporting the technical teams in service delivery according to the (Lusaka City Council website, 2022).

The Lusaka City planning department is the one that has attempted to address climate issues though in a very inconsistent manner. The department once initiated a tree planting plan in schools. This has been done practically at a very low level such that its yield has very limited impact for a city scale. Various departments have attempted to incorporate climate response activities in their operations, but most of them seem to focus on adaptation and less on mitigation. Efforts have been put in place to equip some personnel from selected departments with basic training and exposure on climate change, yet the status quo remains operational.

## 4.2 Major differences and similarities between the aspirations in the NPCC and those of LCC key development documents toward climate response:

### 4.2.1 The NPCC and City Development Plans

This section discusses the main findings from the policies, plans and documents that are being used in Lusaka toward climate change response. The key objectives of the NPCC are the sustainable response to climate change, compliance with international obligations, resilience building, collectiveness, and inclusiveness. Cities ought to design their development plans in reference to these provisions. The NPCC is guided by a consultative approach, ecosystem integrity and complementarity of initiatives. The key issues therein are energy, water, forestry, wildlife, and mining. The policy advocates for climate change communication and awareness (NPCC, 2016). It emphasizes as well as strengthens climate change education, training and public awareness including Indigenous knowledge as well as the promotion and dissemination of research findings. This in essence must be implemented by Cities through the plans that mark the day-to-day operation of the city.

In this light, the policy requires cities to encourage the participation of women, youth, and children in climate change programs. The policy stresses the implementation of gender-specific measures on climate change as well as the promotion of gender equity in climate financial access. The NPCC also depicts the promotion of access to affordable, environmentally sound technologies. It advocates the promotion of identified climate-friendly technologies for mitigation and adaptation for low-carbon and climate-resilient development needs in cities. This is through renewable energy sources and non-motorized transportation. Climate change research and development through the support of higher

learning and research institutions are encouraged to predict technologies that determine climatic vulnerabilities.

The NPCC further alludes that floods and droughts have an impact on water quality. The droughts that have been experienced affect agricultural outputs. This takes a toll, on the people residing in the informal settlements and ultimately the vulnerable groups within the population. In addition, soil conservation, ecosystems and forest preservation are emphasized for consideration in the development of Lusaka thus Cities need to run by these provisions.

There is an emphasis on the promotion of sustainable land use planning for the protection of key ecosystems and related services. The NPCC advocates for sustainability through investments that adhere to low-carbon development principles. It emphasizes the promotion and scaling up of alternative energy sources for energy efficiency and conservation. The same is also accentuated in waste management by reduction of waste through treatment, reclamation, re-use, recovery and recycling and the city operations need to align to these areas. The City of Lusaka ought to run by the provisions of the NPCC through integration with the developmental plans.

### 4.2.2 Vision 2030

All council plans must be aligned with the Vision 2030, but however, climate change is not mentioned in the Vision 2030. Climate change is indirectly addressed throughout the document at a limited level. There is advocacy for the management of natural resources sustainably in one of the objectives which states that development policies must be consistent with sustainable environment and natural resource management principles (Vision 2030, 2006). This document consists of seven key principles which are sustainable development, the upholding of democratic principles and respect for all human rights. It emphasizes fostering family values, and a positive attitude to work, peaceful coexistence and upholding of good traditional values. Climate change is not directly referred to and if it is not clearly articulated, implementation is likely to follow suit.

### 4.2.3 The Seventh and Eighth National Development Plans

The 7th National Development Plan mentions the phrase climate change 22 times while in the 8th National Development Plan, it is mentioned 31 times. The environment is regarded as a very important natural resource that could boost economic development (SNDP, 2011). Climate change is included under the themes of disaster risk management (DRM) which is referred to prevent adverse effects of flooding and drought to the vulnerable sectors of the economy. The plan envisaged that other different sources of energy such as geothermal, wind, solar and coal would grow to about 15 percent by 2030 (SNDP, 2011). The plan acknowledges that climate change has had an impact on the livelihood of the people and the economy and may cause more issues if not dealt with proactively. It states that the people may remain below the poverty datum line due to rainfall variability.

The overall goals of the 7NDP have been placed with five strategic objectives which are to diversify and make economic growth inclusive, to reduce poverty and vulnerability, to reduce developmental inequalities, to enhance human development and to create a conducive governance environment for a diversified and inclusive economy. There is no direct climate management plan for localisation. One of the strategic objectives of the Plan is to enforce environmentally and socially sustainable development principles (SNDP, 2017). This is merely on paper but the actual day to day running of the city is not up to date with the provisions of the plan.

There are no details recorded in the 8th NDP plans regarding the mitigation of climate change. For example, charcoal use is projected to grow yet there are no provisions to reduce deforestation or encourage afforestation within the City. Climate response is indirectly addressed through the negative externalities of pollution. Lusaka City Council therefore has no written down reference and basis to respond to climate change and there is need for a step-by-step guide towards achieving the climate resilient cities.

### 4.2.4 The Master Plan / Comprehensive urban development plan.

The Master Plan, also referred to as the Comprehensive urban development plan, for Lusaka has no mention of the term climate change. The plan emphasizes infrastructure, decongestion of roads, and repairing water pipes among other focus issues (Master Plan, 2009). There is the mention of sustainable environmental preservation where the recovery and maintenance of the green network are mentioned. The issues that are advocated for are not climate-conscious, for example, the ring road which was set for construction would encompass the cutting down of trees which is a phenomenon that the plan did not take into consideration.

Climate response is mentioned indirectly through recreation and parks that will green some parts of the city. In discussion, there are no tangible actions that the city is undertaking to satisfy this requirement. No clause is in place to respond to greenhouse gas emissions as well as the preservation of water and energy. The plan states that energy cannot be comprehended as it is not fully explained (Master Plan 2009). The Master plan does not look at the water resource in response to climate change. The focus carried by this plan is on transport, utility development, social service upgrading, capacity development, industrial promotion and green network development. In as much as these issues raised within the plan have effects or are affected by climate change, the plan is silent on this.

The Lusaka City Council strategic plan (LCCSP) of 2017 – 2021 was formulated with guidance from different policies except for the NPCC. It has its focus placed on four thematic areas for strategic direction which have to be followed. These thematic areas are social and economic development, public health and environment, community neighborhood development and recreation, public service and governance and infrastructural development (LCCSP, 2017). Climate issues feature in this plan where there is mention of public health and the environment. Regarding climate mitigation and adaptation strategies improvement, water quality and security are moderately emphasized. There is little attention given to the preservation and protection of underground water. The overall and specific objectives for the plan are silent on climate response but more emphasis is placed on the involvement of the people and improvement of service delivery.

### 4.2.5 The National Budget Speech:

The National Budget (2024) is themed towards unlocking economic potential. Following the development strategy for the country as outlined in the Eighth National Development Pla, the budget is premised on the following key thematic areas:

a) Economic transformation and job creation;

b) Human and social development;

c) Environmental sustainability; and

d) Good governance environment.

The budget acknowledges a key thematic area from the 8th National Development plan that is of interest to the topic in question which is environmental sustainability. Under Section C and subsection 141 of the National Budget Speech (2024) the government endeavors to provide early warning systems by putting 50 automatic weather stations. The government plans to improve the legal and regulatory environment in 2024 in order to promote green finance and establish eco-friendly practices within the financial industry according to the National Budget (2024).

The amount allocated for environmental protection is K1.5 billion. The money will be put to use in a number of projects and programs that will safeguard the environment and increase adaptability to the effects of climate change.

The Lusaka City Council (LCC) approved a K732,090,165 budget estimate for 2024 according to The News Invasion (2023). The budget system for LCC is however overwhelmed and climate response activities such as tree planting and investing in climate smart technologies are barely supported. The budget is silent on improving the human capital that deals with climate issues as well as operational conditions that address climate change in local authorities. According to the News Invasion (2023), one local commented on the budget and exclaimed:

"Just about US$28,9 million… that's a small budget for a growing city with a population of over 3 million…a greater portion, 60%+ salaries/benefits and operations…time to rethink revenue enhancement strategies"

The immediate operational needs for climate change within Council are in the shadows and remain unacknowledged. There is no laid-out blueprint that allows all stakeholders to understand what the Council is working toward regarding climate action and resilience. Hence climate change response is not direct on at Lusaka City Council.

### 4.2.6 The Integrated Development Plan

The advocacy for climate-smart development through the formulation of the Integrated Development Plan (IDP) is pro-climate resilient development. The draft IDP seeks to protect the underground water resources, improve urban services, and prioritize slum upgrading. The IDP also aims to promote climate-smart development.

| **Document** | **Similarities** | **Differences** |
|---|---|---|
| Vision 2030 | Management of natural resources advocacy | No mention of climate change.<br>Indirect address to climate change. |
| The Seventh and Eighth National Development Plans | Climate change mentioned.<br>Environment referred to as important natural resource.<br>Climate change is included under the themes of disaster risk management | Climate mitigation not directly included.<br>Not localized.<br>Resources such as charcoal use do not have proactive mitigation strategies. |
| The Master Plan/ Comprehensive Urban Development Plan (2009). | Recreation and parks will address climate change. | No mention of the term climate change.<br>No mention of sustainable environment preservation. |

| | | |
|---|---|---|
| | | Infrastructure developments e.g ring road do not include climate mitigation issues.<br><br>Silence on greenhouse gas emissions.<br><br>Silence on the water resource |
| The Lusaka City Council strategic plan (LCCSP) of 2017 – 2021 | Minimum emphasis on water quality and security. | No direct plan on climate resilience for the city.<br><br>Silence on the preservation and protection of underground water. |
| The National Budget Speech | Allocation for environmental protection. | immediate operational needs for climate change for local authorities are in the shadows.<br><br>There is no mention that the funds will be directed towards the LCC to realize climate response.<br><br>There is no laid-out blueprint that allows all stakeholders to understand what the Council is working |
| The draft Integrated development plan | Pro climate resilience.<br><br>Protection of the underground water resources.<br><br>Improvement of urban services, and prioritization of slum upgrading | |

***Table 1 : Summarized similarities and differences of the planning documents in relation to climate change. Source Candidate's Research Findings (2020)***

### 4.3 Climate change effects on the city

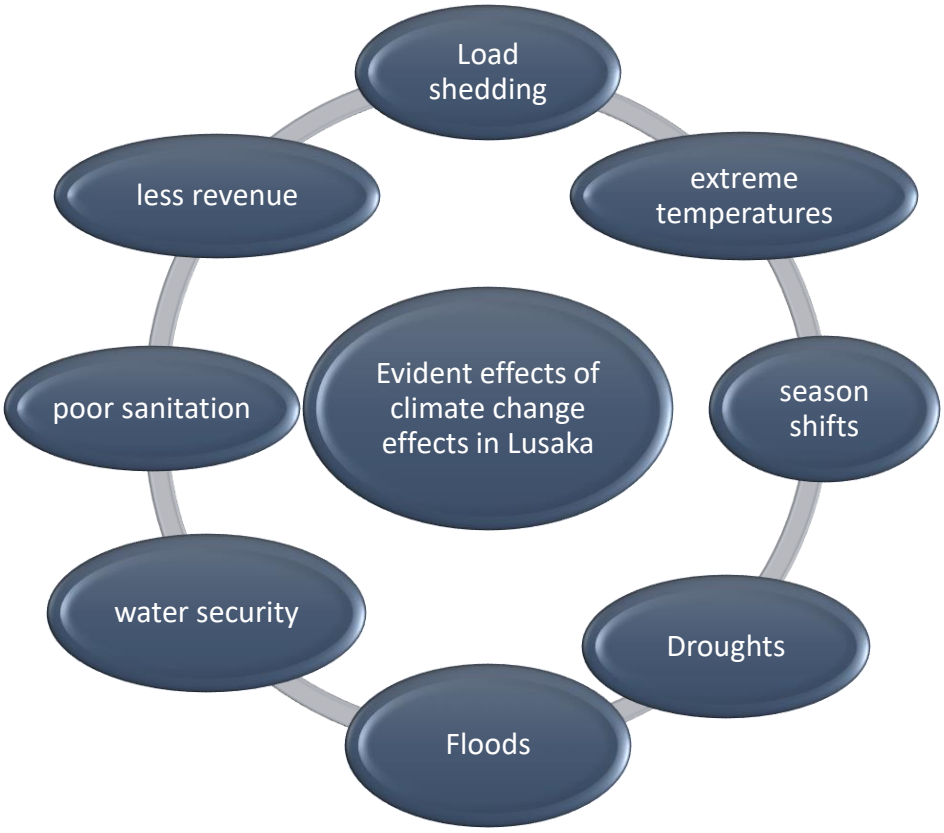



***Figure 4 Climate change effects that are evident within the City of Lusaka as according to the interviewees*** **Source Candidate's Research Findings (2020).**

### 4.4 LCCs role in climate response.

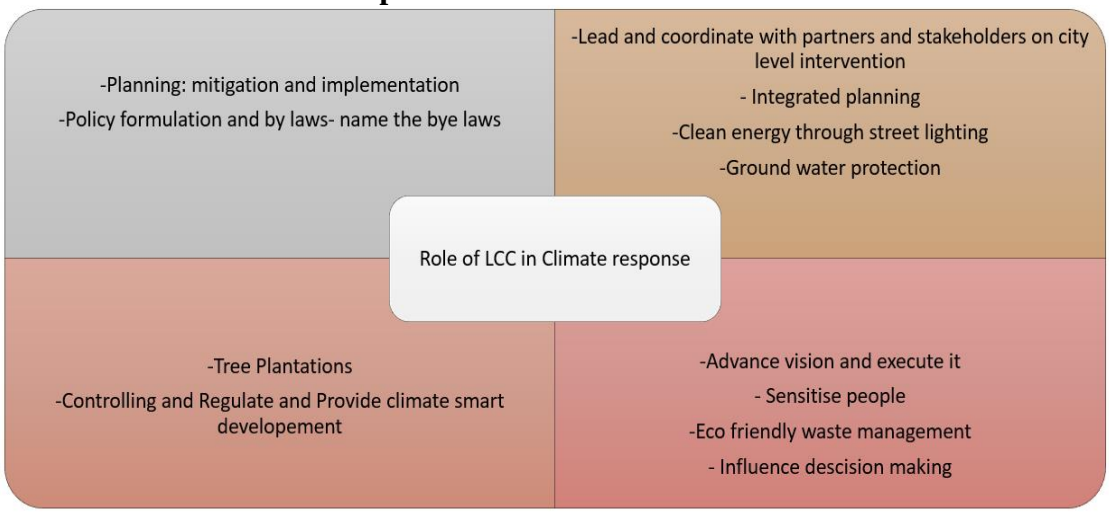



Figure 5- LCC role in climate change LCC interviews (2020)

**Figure 6 Roles of LCC in Climate change response as responded by the interviewees.**

The roles of the Council are evident on paper and in discussion, but the practicality and implementation of these remain an aspiration.

### 4.5 LCCs identified climate change priority sectors in Lusaka and components that have been included into city planning:

| Climate Change Priority Sectors in Lusaka according to respondents | |
|---|---|
| Housing in Peri urban<br>Infastructure: drainage, roads<br>Water<br>Green Buildings | Tree planting<br>Energy<br>Waste |

***Figure 7 Climate change priority sectors. LCC Interviews (2020)***

#### 4.5.1 Water Supply, Sanitation and Drainage infrastructure - Millennium Challenge Cooperation (MCC)

The focus of the MCC is for water supply, sanitation, and drainage infrastructure according to Hickmann *et al.*, (2022). The MCC has a goal of decreasing the incidence of water-related diseases, generating time savings for households and businesses, and mitigating business and residential flood losses according to the Millennium Challenge Corporation (2023). The threshold program according to the Millennium Challenge Corporation (2023) sought to improve scorecard performance on three indicators by reducing corruption in key government institutions and barriers to increased trade and investment. Though beneficial to the city, the MCC initiative does not accompany permanent solutions to climate challenges that are currently facing the City Council as this is not the initiative's mandate.

LCC involvement in climate priority sectors includes undertaking environmental audits in industrial areas, slum upgrading, management of urban parks and formulation of Local

Areas to protect ground resources in Shaft Five and Mass Media boreholes according to Fukuda *et al.*,2014, the adoption of the MDGs is a key example of global goal setting.

### 4.5.2 Early Warning systems for floods and droughts: Future Resilience for African Cities and Lands (FRACTAL) Project

LCC is working with stakeholders to develop early warning systems for floods and droughts, undertaking climate change projection by working with researchers such as the Future Resilience for African Cities and Lands (FRACTAL) Project (2019)

FRACTAL (2019) research found that the main lessons from the efforts to integrate climate information into the strategic planning process in Lusaka, Zambia include that trust and relationships are key to sharing data and information needed to build a compelling case for managing climate risks. Furthermore, there is a need to enable a variety of stakeholders to engage with climate information. Conway (2021) discusses the complexities of climate adaptation related decision making, there needs to be an enabling legal, policy and financing framework as well as preparation to meet resistance, skilled intermediaries and city exchange visits help to address the complexities. The practicality of these noble lessons to Lusaka city is not yet evident.

### 4.5.3 Tree planting exercise

To ensure that ecosystems are maintained, there is also a tree planting exercise that is being done in schools and churches. This is in collaboration with Zambia Environmental Management Agency. The EIAs are being done to ensure abidance to the Master Plan. These enforcements are especially tightened in the commercial, industrial areas, and filling stations. It is however alleged that the City's involvement lacks consistency and continuation. This was supported by one participant who was interviewed for this study. The participant said, "this was only done at one school, and we don't know when last we followed it up or whether the trees are still alive"

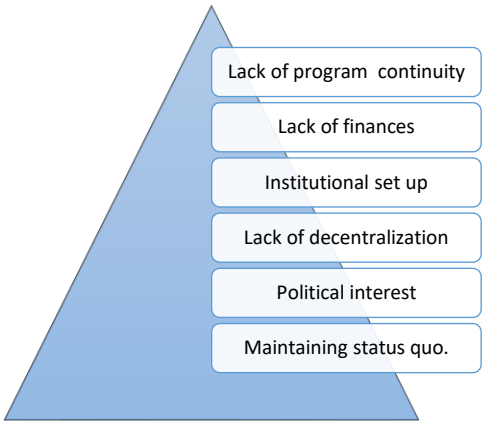
Infrastructure development is another sector that the city is allegedly focusing on for adaptation and mitigation. There is cooperation with partners such as the People's Process on Housing and Poverty in Zambia to improve infrastructure such as drainages for example in Kanyama for greening the city. In cooperation with UNZA, research is also

being done in cooperation with UNZA on urban flooding, waste, management in slums such as Kalikiliki. Another study is on the impacts of floods and droughts on the community. The research findings are used for sensitization and knowledge sharing of climate issues with the community. Community engagement and empowerment programs for food security such as training in food preservation, gardening and survival skills are also some of the sectors which are taking priority in addressing climate change.

### 4.5.4 The Lusaka Citywide Slum Upgrading and Prevention Strategy (LCSUPS)

Through the Lusaka Citywide Slum Upgrading and Prevention Strategy (LCSUPS) of 2016, the focus is placed on water and sanitation, waste management and road drainages in relation to the NPCC. The environment and climate change issues are mentioned at the end of the document in a paragraph. However, watercourse protection, reforestation, and the need to conserve, retain and expand sensitive habitats and open spaces are recorded (LCSUPS, 2016). There is however silence on energy and water in relation to climate change. The aspirations of Lusaka City Council and the NPCC on paper have the same agenda of aspiring to create a green and clean city. There is however no coherence as there is grey development in practice.

## 4.6 Challenges faced by LCC in implementing the objectives and strategies as outlined in the NPCC.



### 4.10.1 Institutional Set Up: Lack of knowledge of the NPCC and Manpower

Challenges to downscale, align and implement the requirements of the NPCC policy in everyday work at Lusaka City Council are evident through the lack of knowledge of the policy within the council. The interviews found that the NPCC copies are not available at Council, no Official owns a copy within the council and only limited personnel confirmed having heard about the Policy most certainly got to know it outside of the workplace. Those who have heard of it, know it through unofficial means such as the research that was being carried out or through unofficial interactions with colleagues. This was stated by one respondent who said, "I have heard about it from my colleagues outside the workplace before."

The planning department does not have a designated planner who looks after climate initiatives. There is no department that is solely focused on combating climate change. In terms of manpower, the city has eleven planners, one vehicle, and five building inspectors for the entire Lusaka. The same planners are disregarded by the policymakers in some instances. This was clearly stated by one planner who said that "it is hard for two planners to go to two different locations at the same time because there are no cars." When important decisions are made, their input is not put into consideration, and this poses challenges to climate action.

### 4.10.2 Lack of decentralization

Moreover, though the council on paper aspires to decentralize and resolve climate challenges. It was discovered through this research that this is not the case at the City Council. There is undeniable control from the center and the local authority does not have the capacity to operate independently and plan for their own development. It was found from the interviews that there is control from the center such that initiatives that come from the city rarely or never make it to consideration. This was pointed out by one respondent who said, "how can we plan? We can't stand on our own financially, we depend on the central government for financial aid and therefore independence of the system is not easy".

Misappropriation of devolution funds has been affecting the process according to the Embassy of Zambia (2023). President Hichilema addressed Zambian dignitaries on the matter and promised that there would be a shift in how devolution funds are allocated. He further stressed that he is aware of the "big thieves" in Lusaka who have been converting devolution funds for their own benefit. Due to the misappropriation of devolution funds as noted by Zambian Embassy (2023), the funds will be sent directly to the constituencies where they will be put to good use through the Community Development Fund (CDF).

### 4.10.3 Political Interest

The researcher found political interest to be one of the main raised challenges in resolving climate matters. An example that kept surfacing from the interview was the degazetting of forest 27. Lusaka East Forest Reserve Number 27 was classified as a protected area in Lusaka Zambia. The Lusaka East Forest Reserve No. 27 was established in 1957 to protect the source of the Chalimbana River and it was part of an important water catchment area that provided invaluable socioeconomic, and ecological services. It was home to some of the freshest water in the region, it had incredible biodiversity and served as a recreation space for the local population. The signing of Statutory Instrument No. 62 allowed for the subdivision of this major forest reserve for development, thereby endangering Lusaka's water supply. It can be noted that the City Council had no say in this and evidence that political interest takes precedence to planning matters within the |City.

### 4.10.4 Maintaining Status Quo

The research found that there is a lack of room for the employees to express their knowledge at LCC hence the status quo is maintained. It was found through the research that there are employees who had knowledge of the current demands of Cities in mainstreaming climate change but there was no room for them to showcase what they had. The respondents indicated that Council has an established way of running matters. One respondent said, "we cannot suggest anything and be heard, we have resorted to just following the system". "New initiatives cannot be introduced or reviewed openly as the status quo is highly maintained" according to the interviewed candidates.

### 4.10.5 Lack of Finances

A lack of finances and adequate human resource capacity base to implement plans is a challenge that was found in downscaling the policy. The budget is overwhelmed and tight due to lack of finances. It was found that there are matters that are considered urgent and more important than climate response. For instance, the Council employees may go for months without salaries and the climate change budget consideration would look like a luxurious matter. There are little to no finances that are allocated for climate causes and programs. It was discussed with the interviewees that climate response budgetary allocations that may be suggested by the executive at times are rejected.

### 4.10.6 Lack of Continuity in programs

Due to the lack of integration of programs, there is a lack of continuity. The operations at the City Council in relation to climate response at the Lusaka City Council are not structured. During the study, some respondents highlighted that the central government does not take time to engage the local authority in climate governance. It was alleged that Council does not own most decisions for operational purposes. The respondents stated that there is less of the bottom-up approach but rather decisions are made at the top and the local authority is forced to adjust. In as much as there are community representatives, they mainly work to inform the community about the information that comes from the center rather than the other way round. It was also stated that there is a delink between the climate secretariat and the local government. This puts the local authority in a place where it only has to comply with the central government policies and fails to demonstrate its expertise in climate response.

## 4.11 Conclusion

It can be noted that the chapter presented the primary findings of the study. This saw the description of the institutional setup for climate response in the city. The chapter described climate change effects in the city and the LCC's identified climate change priority sectors. The chapter went on to indicate the challenges faced by LCC in implementing the

objectives and strategies as outlined in the NPCC. The major differences and similarities between the aspirations in the NPCC and those of LCC key development areas were also presented and the chapter concludes as the findings from this chapter are discussed in chapter five.

# CHAPTER 5: DISCUSSION

## 5.1 Introduction

This chapter seeks to discuss the findings as presented in chapter four to answer the research questions. The chapter uses the findings to 'speak back' to literature review material and generate meaning, establish new ideas and concepts based on the empirical findings. The chapter has five sections. This section presents the introduction and purpose of the chapter while section two discusses the operational and policy frameworks and dynamics governing climate response in Lusaka city. The third section analyses climate pressures affecting the city. The fourth section discusses climate change response priorities by Lusaka City Council (LCC). The fifth section analyses how development planning by LCC link to or fail to link to and downscale relevant climate change response objectives and strategies as outlined in the Zambia National Climate Change Policy (NPCC). Section sixth section provides final reflections on the chapter and introduces chapter six on conclusions and recommendations of the thesis.

## 5.2 Operational and policy frameworks for governing climate in Lusaka city : Revisiting the Institutional set-up

Governance is a system of values, policies, and institutions by which a society manages its affairs. The affairs may include economic, political, and social affairs through interactions within and among the state, civil society, and private sector. Climate change governance has been described as a broad range of options of coordination concerning climate change adaptation and mitigation (Fröhlich and Knieling, 2013). Lusaka City Council has typically used the indirect approach to respond to climate change shocks (Rosenzweig *et al.,* 2018) such as urban flood response, drought, and waste management. One of the reasons for the indirect climate response at LCC is a lack of a climate sensitive institutional set up.

The study reveals that LCC's institutional setup is not designed for climate response. This is akin to Nieng (2014) who states that high vulnerability levels and low adaptive capacity in Africa are a result of structural and institutional factors, particularly local governments with poor capacities. As outlined in the findings chapter, Lusaka City Council has eight departments but among these, policy and development action that have to do with climate

change are considered as cross-cutting. The lack of a dedicated unit or department to deal with climate change issues in the city renders the response to climate change to largely indirect and lacking in institutionalized climate change accountability and deep integration into city development practice and development goals. The lack of dedicated unit to champion the agenda for climate change action at city scale contradicts Carter *et al.*, (2015) call for forceful city leadership and champions of climate action by cities. Downscaling of climate policy and localizing it to the city requires presence of "commitment and leadership of local authorities" and this needs to be demonstrated through institutional alignment, appropriate climate strategies, and mechanisms for stakeholder mobilization for climate action (Carter *et al.*, 2015:36). A lack of a dedicated team will hinder climate response effectiveness as the basic skill to know what to do and when to do it will be unavailable.

The study reveals that the LCC operational set up is in such a way that there are no programs in place that are sustainable for city-wide climate intervention. This is evidenced by the lack of climate change experts in all the city departments, even though all the departments are somehow expected to mainstream climate action in their operations. The findings show that due to lack of dedicated units and or qualified climate experts in key departments such as city planning, public health, and engineering the city's climate change agenda is not clear and lacks direct policy articulation. This current operational status prompts inefficiency in climate mitigation and adaptation. Akin to Parry (2011), African cities have low adaptive capacity to respond to climate change due to a lack of climate response systems and poor institutional coordination, financing, and lack of capacity at the local level.

The study found that efforts that have been put into action by various departments at Council in reference to climate response and mitigation are not yielding effective and tangible results. The terminologies, objectives and actions that are contained in the NPCC on how to directly downscale and institutionalize the policy into the \city plans lack ownership by the drivers of this cause. The training that has taken place such as the Millenium Challenge Account Zambia might not be adequate as Climate response goes beyond this scope. Thus, there is a limited level of awareness of the NPCC among the key

departments at LCC. This chapter discusses the climate pressures affecting the city and analyses how the city attempts to address the challenges.

### 5.3 Climate pressures affecting Lusaka City: Questioning the status quo.

The findings in the study reveal that climate change have had several evident effects within Lusaka City. These effects include load shedding, extreme temperatures, seasonal shifts, droughts, water floods and poor sanitation. These in turn affect the most vulnerable through hunger, diseases and endemic poverty which in turn affects the council revenue. Akin to Heath *et al.,* (2021), climate change affects everyone and mainly the urban poor in Lusaka who live in urban informal settlements. Inadequacy in infrastructure has seen Lusaka being mainly affected by climate shocks. This is also akin to Godfrey and Julien (2005)'s view that climate change effects are worse off in the developing world due to unplanned settlements, urbanization is mostly unplanned in the developing world, hence, climate change effects are worse off. These climate pressures therefore make the urban poor in Lusaka more vulnerable.

It is noted from the findings that flooding has been taking place in Lusaka city in areas such as Lusaka Central, Kabwata, Kanyama, Matero Munali and Chawama. During the rainy season, Lusaka's majority of neighborhoods flood. Fractal (2018) states that heavy rainfall, flat terrain, and extremely permeable limestone which is situated on impermeable bedrock that becomes saturated makes the situation worse. The inadequate infrastructure such as drainage planning and poor solid waste management contribute to the climate challenge.

This scenario happens every year and seems to get worse as years go by. Akin to Fractual (2018), effects of climate change in the city include damage and destruction to buildings (such as homes, businesses, and roads) and crops, as well as increased prevalence of waterborne illnesses such cholera, diarrhea, and dysentery. The urban poor living in un serviced informal settlements, which have poor living conditions are the ones that are mainly prone to and exposed to these effects. Lusaka has put intervention strategies to put drainages, for example the Bombay drainage but the drainage is not as effective as it would be if all programs would be integrated toward a common goal. However, the drainage system is not sufficient for the but the causes of flooding in Lusaka are physical,

social and climate drivers yet the climate drivers have not been catered for due to the lack of downscaling of the NPCC in city development plans.

Extreme temperatures have been experienced in Lusaka because of climate change. The participants' views from the interviews carried out highlighted that both summer and winter seasons are at their extremes due to climate change. Similarly, the Weatherbase (2022), the highest recorded temperature in Lusaka is 99.0°F (37.2°C), which was recorded in November and the lowest recorded temperature in Lusaka is 32.0°F (0°C), which was recorded in June. Seasonal shifts have also been seen in Lusaka and this is because of global temperatures which have become warmer according to the study respondents' perspectives.

Due to the negative effects of climate change and climate variability, Lusaka has continued to endure extreme events including floods and drought. Lusaka experienced above-average rainfall during the 2019–2020 rainy season, which led to flooding and dry spells in Lusaka according to World Bank (2019). Since the beginning of the 2019 drought, Lusaka has continued to experience a lack of access to reliable, clean, safe drinking water, an acute energy deficit for the majority of its residents and continued reliance on dirty sources of energy such as charcoal. This is because of the terrible consequences of protracted dry spells and a late start of the rainy season to support the normal functioning of the nation's hydro infrastructure on which Lusaka depends for energy. This in turn affects food production, people's health, and service provision for the council. The vulnerable groups are largely at a disadvantage because of this, and city planning gets more and more complex considering these challenges.

### 5.4 Climate change response by Lusaka City Council: Sufficiency and consistency of programs and tools.

The climate change response priorities by Lusaka city Council are the integration of land use planning with natural resources management. This is meant to preserve the natural resources within the city as advocated by the NPCC, 2016. This is being done through the drafting of the IDP. However, this process is proving to be cumbersome and at the same time, development is proceeding without taking the NPCC considerations into consideration.

Initial National Communication (2004) offers tools for greenhouse gas inventories as well as preliminary assessments of susceptibility and adaptation. The Second National Communication is being worked on now. According to USA Climate Change Fact Sheet (2012), Zambia's National Strategies and Plans to address climate change include:

i. The 2007 National Adaptation Program of Action (NAPA) which identifies the industries that are most susceptible to climate change and makes pertinent stakeholders, laws, plans, initiatives, and programs that can assist in addressing the effects of the nation's changing climate.
ii. The Climate change and soil protection law (2023) offers a thorough institutional and implementation framework at the national level and the study indicated that this has not yet become locally available at the city council.

This is meant to enable Zambian efforts linked to public education, awareness, technology, mitigation, and adaptation to climate change to be synchronized. The strategies are also meant to highlight how crucial it is to concentrate on the economically weak sectors and mainstream include development strategies for climate change. From the study findings however:

The government's Adaptation priorities as according to USAID (2012) are:

i. Enhancing readiness by facilitating the rapid broadcast of weather information through the ZMD Early Warning System.
ii. Encouraging improved management of vital habitats and land.
iii. Increasing the diversity of livestock and crops to enhance food security and nutrition.
iv. Encouraging alternative livelihood options to lessen reliance on fossil fuels and vulnerability.
v. Improving water management using small-scale irrigation, water harvesting, and water conservation to endure unpredictable rains.
vi. Upgrading and maintaining the current medical infrastructure.
vii. Improving urban sanitation to be climate-proof.

The Lusaka City Council has also partnered with Sweden in advocating for clean energy, this project is not sufficient and may strike as an unsustainable intervention. The Government introduced the Multi-Facility Economic Zones (MFEZ) in 2005 to enhance Zambia's competitiveness and industrialization. The MMFEZ has since been facing challenges such as weak institutional capacity and inefficient services of the public sector, inadequate infrastructure and weak linkages between the zones and local firms according to World Bank Group (2018). The Multi Facility Economic Zone is good for the city but the scale to which these developments are taking place will yield minimal results unless the Development Plans speak to the day-to-day running of the city.

To localize climate response, the city is lacking sufficient and consistent environmental audits, the findings stated how the planning department has engaged in an inconsistent tree planting exercise. This is meant to ensure that ecosystems are being maintained. This exercise is being done at a school to supposedly compensate for the trees that are being lost due to activities such as development and the production of charcoal fuel. Moreover, developments are assessed against the Master Plan, this is the same Master Plan that minimally acknowledges the NPCC. Having the IDP come in would probably improve the planning system within the city if it is practically incorporated into the day development.

Further, in conjunction with PPHPZ, infrastructure such as drainages has been developed in areas like Kanyama according to the Fair Future Water Program (2013). Research is also being done with UNZA to determine the impacts of floods on food security. The definition of issues is vital for the tailoring of solutions hence there is also a need to move from problem identification to a solution-oriented system. If all the interventions were based on an integrated city development plan system, there would be sustainability and the ability for the city to respond to climate change.

### 5.5 Development planning and incorporation NPCC: Linkage between national and local climate programs.

Zambia added tackling climate change at the city scale to the sustainability imperative within the design and development of strategic urban plans for Zambia (UN-Habitat 2015). Adapting cities to changing climate conditions requires prioritizing interventions

across the spatial extent of the city region and the full range of climate risks and vulnerabilities. Several scholars argue that urban planning is a key field for tackling climate change in cities because it is a domain that draws in and effects many actors shaping the city space, it deals with numerous types of critical infrastructure, and it is inherently forward looking (Parnell 2015; Lomba-Fernández *et al.,* ( 2019). The challenge is that urban development decisions are inherently political in nature, as land and space have contested value and competing uses. Early evidence highlights the limitations and constraints of planning as a vehicle for city-wide climate adaptation, partly because planners within local authorities are constrained in the extent to which they can coordinate between sectors and have limited expertise in dealing with climate data and information (Carter *et al.,* 2015).De Satgé and Watson (2018) argues that planning in cities of the Global South operates in contexts characterized by conflicting rationalities between states and markets driven by the logic of modernization, control and profit, and poorer communities driven by the logic of survival. Issues of water scarcity, groundwater exploitation, declining water quality linked to the lack of sanitation services and regular flooding became focal points for deliberation and knowledge co-production that fed into the Strategic Plan in several ways. Through the series of FRACTAL engagements, community representatives became confident in articulating the connections between the everyday challenges they were experiencing in their local area and broader processes of environmental and climate change playing out at the city-regional, national and global scales. Similarly, City Councilors deepened their understanding of the linkages between local livelihoods, health and safety concerns and environmental issues. Through iterative FRACTAL-led efforts at unpacking and expanding a set of Climate Risk Narratives and developing thematic policy briefs.

The findings of this study indicated that development planning at LCC has a delink in scaling down climate change as outlined in the NPCC. This delink is mainly caused by the development plans which do not downscale NPCC guidelines. The delink is also caused by the lack of capacity and interest by climate change agents to adopt climate change through their operations. For example, the research found that none of the personnel within council had a copy of the NPCC policy and barely understood what it entails. Akin to Totin (2015), states that climate response is affected because there's a

lack of climate change policy understanding and awareness at the city level. For the few who had minimal knowledge, they understood the policy from a layman's viewpoint. According to the African Union (2023), for African countries to respond to climate change, there is a need for human capital development, institution building and knowledge sharing. There is therefore a need for training and workshops to equip the employees at LCC.

Kalaba (2016) notes that barriers to policy implementation range from limited financial resources, insufficient institutional capacities, and lack of inter-sectorial coordination and political influences". Development planning fails to incorporate climate change as the study reveals; innovative climate response interventions by the executive go unacknowledged due to political interests. An example that stood out from the study was the issue of Forest 24 which was degazetted despite the council's efforts to preserve forests. This means that if the political arm is above the technocrats, the mandate to respond to climate change will remain an aspiration rather than a reality.

A lack of finances has also been a factor that causes the delink of the NPCC and the LCC. Like most local authorities in Zambia, financial resources are scarce at LCC. The coming in of the CDF funding can be a door to climate change response at LCC if it aligns with climate responsive development plans. Once the operational plans such as the IDP integrate climate response, the funds can be channeled to pursue the operational plans provision. This will enable the city to operate in a manner that speaks to the provisions of the NPCC.

Akin to Berman *et al.,* (2012) states that the capacity of local government to undertake a well-informed climate change plan remains low in African cities due to limited financial resources. The policy strategies may only be linked to development strategies in Lusaka if the resources are available. Activities such as research, training and implementation are required if the council is to advance climate response within the city. The lack of financial capacity is evidenced by how the LCC struggles to pay employees mainly because of low revenue. Moreover, the financial challenge is seen through the lack of operating resources. For example, the department of planning has only one vehicle, five building inspectors and seven planners. This ratio is not sufficient to service the entire Lusaka. These numbers

are not sufficient to offer services for the entire Lusaka, the employee resources ratio is not balanced, this affects the integration of the policy in city plans negatively.

There is also a de link between the LCC aspirations and citizens' expectations in Lusaka. The limited opportunity for public participation makes it impossible to act on climate response. The local authority needs to partner with the local people. The challenge at Lusaka City Council with the Officials not fully participating in climate action only makes it apparent that the local people are not involved too. This contributes to a lack of continuity in programs as ownership is lacking. There is basically no road map that integrates stakeholders to be in sync with climate response and this delink is detrimental to development planning and incorporation of the NPCC.

## 5.6 Conclusion

This chapter has presented a discussion of the findings. The chapter discussed the operational and policy frameworks and dynamics governing climate response in Lusaka. It has analyzed the climate pressures affecting the city. The chapter further discussed climate change response priorities by LCC. The chapter also analyzed how development planning by LCC fails to link and downscale the climate change response objectives and strategies as outlined in the NPCC. The chapter highlights that the city development plans that are being used at LCC as of the year 2020 do not adequately integrate the NPCC. The next chapter discusses recommendations on how best the city can incorporate the NPCC in development plans to advance climate action.

# CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

## 6.0 Introduction

Based on the entire process of the research, this chapter presents a summary of the main findings concerning the integration of the Zambia National Climate Change Policy in City development plans in Lusaka. The chapter provides an overview and reflections of the research processes, findings, and analysis. The first section reflects on the research methodology, the second section reflects on the research questions while the third section looks at the recommendations. The chapter has the conclusion as the final section. The purpose of the chapter is to reflect on research questions.

## 6.1 Reflections on the research methodology used in this study.

This study opted to use a purely qualitative research method as it was suitable for the extraction of data in a humanistic setting. Qualitative research methods had the strengths of enabling the researcher to get firsthand information from respondents. The interviews enabled the interviewer to interact with the respondents and probe for more information. The face-to-face interviews also allowed to assure the respondents that they could trust the interviewee and be open to share their perceptions.

However, the low side of the interviews was that they were time-consuming and expensive as the interviewee had to visit the council offices several times and wait for hours to get an appointment as she dealt with top executives. The methodology therefore required one to take longer periods of time in the prescribed study area to obtain better results. The other downside of the qualitative methods adopted in this study emanates from their failure to give a statistical angle to the research area.

The research adopted a case study approach with the City of Lusaka being the case in point. Case studies are qualitative designs which the researcher uses to explore in-depth an area of interest thoroughly. The researcher picked all the departments at the LCC which are the city planning, fire, engineering, public health, administration, legal, housing, and social services, and finance.

The case study method was especially selected for use by the researcher because it zeroed in on Lusaka as a City and thoroughly investigated how the City was integrating climate

change policies in City development plans. A lot of issues were identified as primary attention was focused on Lusaka City Council. With Lusaka being the capital City of Zambia, the findings are likely going to be applicable to several cities in Zambia.

The discourse analysis method was useful for the purpose of largely revealing the key issues as stipulated in the NPCC and the Lusaka City development plans. Discourse analysis assisted the student to discover how the policy does not speak directly to the city development plans as well as how they have been incorporated into the City Development plans. The applicability of the discourse findings was complimented by the interviews as respondents confirmed the discourse findings. The documents that were analyzed are The Zambia National Climate Change Policy, The Master Plan, the Local Government Act of 2019, Lusaka Master Plan, Lusaka Strategic Plan, Lusaka City Council projects (regarding climate change response), Lusaka City Annual Budgets, council minutes, Zambia Environmental Management act, Urban and Regional Planning Act.

Interviews were conducted between the researcher, the directors and their deputies of the respective departments. In these interviews, the researcher sought to understand the director's perspective regarding climate change, knowledge of the NPCC and agendas that they are pushing in their respective sections to respond to climate change.

### 6.2 Reflections of the research questions

***i. How different or similar is the Zambia National Climate Change Policy from the City Development Plans for Lusaka?***

The NPCC is different from the city development plans that were reviewed under the study in 2020. The NPCC advocates for sustainability through investments that adhere to low-carbon development principles. It emphasizes the promotion and scaling up of alternative energy sources for energy efficiency and conservation. The same is also accentuated in waste management by reduction of waste through treatment, reclamation, re-use, recovery, and recycling. This calls for the city of Lusaka to draft development plans that align to these areas for example the coming in of the IDP. The City of Lusaka ought to run by the provisions of the NPCC through integration with the developmental plans. The study concluded that the integration of the stated themes is not a consistent and

direct one. If climate response is to be realised, the plans need to be informed by the policy. The linkage is missing because the City has other developmental priorities which it deems essential that compromise the capacity to address the NPCC.

***ii. What discourses, policies and tools have been used to downscale and localize the NPCC in the city plans for Lusaka?***

The discourses, policies and tools that have been used to downscale and localize the NPCC in the city plans include the Local Government Act of 2019, Lusaka Master Plan, 7th and 8th National Development Plan, Lusaka Strategic Plan, LCC projects (concerning climate change response), LCC Annual Budgets, council minutes, Zambia Environmental Management act and the Urban and Regional Planning Act. The study noted that issues on climate change are acknowledged in some tools, but the downscaling is not direct on.

***iii. How have barriers to integration of the NPCC in Lusaka city development plans been addressed in Lusaka city development plans?***

The study found that the city development plans indirectly integrate climate change. The barriers to the integration of the NPCC have been indirectly addressed by the drafting and coming ion of the IDP and the CDF funds initiative that will integrate the NPCC into the city development if it addresses the financial, institutional capacity and other challenges that are currently being faced by the City Council. The portfolio of the Environmental Planner but results from this study pointed out that it is not making a great difference as expected.

### 6.3 Key research findings and analysis

This study set out to investigate matters to do with the integration of the Zambia National Climate Change Policy in city development plans at Lusaka City Council. This study contended that effective implementation of national and internationally agreed climate change instruments could lead to climate-resilient urban systems in Lusaka. However, the City of Lusaka does not have a direct response to climate change. The researcher learnt that policy integration is an intentional task that is riddled with complexities

emanating from thick bureaucratic processes which if left unaddressed may cause problems. Issues such as financial constraints, institutional capacity, lack of continuation in programs, lack of communication with the technocrats and the overriding of the technical decisions by the political powers cause a lack of integration.

Amongst other lessons, the study carries the lesson that climate action is supposed to be a grassroot initiative and must involve every stakeholder along the way to the level. The study also learnt that the inclusion of robust climate change processes in the Zambian budget is the first of many measures the government can take to ensure compliance.

## 6.4 Recommendations

The purpose of this section is to make recommendations that emanate from the study area. The study has made several recommendations directed to City of Lusaka, National Government of Zambia and the academic community.

### 6.4.1 City of Lusaka

***i. Prioritize development plans.***

This study recommends that the City of Lusaka prioritizes development plans in all sections and departments as they are crucial in climate change implementation processes. The development plans need to incorporate all aspects of climate response as stipulated in the main findings such as to comply with climate change initiatives.

***ii. Setting up a climate change unit for LCC or heavily redesigning the current system.***

The Lusaka City Council needs to set up an integrative system within the Council. If all departments align with the same vision and ensure that all operations are guided by revised legislation, climate change will be addressed. The available personnel may also be trained to respond to climate change. Alternatively, there needs to be a unit that fosters climate response as well as a taskforce that performs checks. There is a need to go beyond policy and work more towards implementation.

***iii. Grass root participation***

From the study findings, the NPCC emanates from the center and there is a risk that it might end from there if interventions are not provided. Since in some instances there

is no buy in by the LCC technocrats, it almost means there is a disturbance in the buy in and it may be a worse scenario at community level. There is a need to get buy-in from the grassroots. Once the LCC officials have been equipped they need to get into the community and seek buy-in. This will ensure that when the City of Lusaka needs to mobilize grassroots and ensure that they participate in various processes related to the climate change agenda. Communities need to be conscientized and informed properly about the agenda for climate change.

### 6.4.2 Government of Zambia

***i. Review policy and ensure climate change is prioritized.***

Government needs to consistently and continuously review the NPCC to make sure climate change remains a critical focus and reflects changing trends. The climate is continuously changing as it adjusts to the effects of deforestation and massive industrialization. It is therefore vital to ensure that the city is being driven toward climate resilience.

***ii. Grant freedom and funding to technocrats.***

There is minimum to no financial backing of the climate response programs from the City. The slow implementation and minimum integration are partly due to a lack of financial resources. Financial commitment is a contributor to projects success and where there is no financial backing, climate response remains in the books and impractical. The City of Lusaka despite its challenges has shown potential to exceed expectations but it takes a lot of political will and support of the activities of technocrats.

***iii. Invest in sensitization.***

The government needs to ensure that the masses are sensitized on climate change across all sectors of the economy. The mass media and other channels can be agents of climate sensitization. Climate change requires a concerted effort, and the government needs to work with the grassroots to realize progress.

## 6.5 Conclusion

In conclusion, the chapter gave an overview of the research processes, findings and analysis. It provided an overview of the research processes, findings, and analysis. The

reflection of the study concludes that the integration of the Zambia National Climate Change policy in City development plans is not a direct one. The proposed recommendations as well as the current interventions in place, LCC may realize the integration of climate change in City Development Plans. The conclusion gives the final reflections of the study. The conclusion gave final reflections on the chapter.

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## APPENDIX

**The University of Zambia**

**Master of Science in Spatial Planning**

Callista Gombera 2018254537

Supervisor: Dr. Siame

***Semi Structured interview guide for Lusaka City Council***

**Name of interviewer.....Department.....**

**Name of Interviewee .....Position.....**

**Date of Interview..... Contact Details.....**

***Objective 1:*** To assess the differences/similarities between the NPCC and the City Development Plans at Lusaka City Council

1. What is your perspective on climate change regarding Lusaka City?

2. In your opinion, are there any climate change effects that are evident within the city? If yes, describe them.

3. What in your opinion is the role(s) of Lusaka City in climate change response?

4. Do you think there is enough involvement of the Lusaka City Council in the climate change programs by the National Government?

5. What actions has the national government taken to incorporate the city in Climate change issues in regard to policy formulation and implementation?

***Objective 2:*** To identify the components of the NPCC that has been incorporated into city plans

6. Did your department give any contributions to the drafting of the city development plans?

7. How is the NPCC being applied in the day-to-day operation of your department?

8. What has your department put in place for the purpose of climate change response?

9. What are the issues that mainly drove (gist) the drafting of the development plans?

10. How have the issues of water, energy, agriculture, forestry, wildlife, tourism been addressed on a local scale?

Objective 3: To investigate the barriers to integration of NPCC in city plans for Lusaka.

11. Has the government engaged in any policy clarifying programs for the Council?

12. What objectives have been put in place by your department in regard to climate change?

13. Does the department have an adequate financial backing to fulfil its climate change response objective?

14. Are there any external institutions that are involved in the climate change programs for Lusaka?

15. What are the challenges that are being faced in trying to fully tackle the climate

change issues?

16. In your opinion, what can be done to achieve effective governance in as far as climate change mitigation is concerned?

Directors of the following Departments to be interviewed:

i. City Planning
ii. Fire
iii. Engineering
iv. Public Health
v. Administration
vi. Legal
vii. Housing and Social Services
viii. Finance
ix. Mayor's Palour

***Discourse Analysis***

 ***Objective 1:*** To assess the differences/similarities between the NPCC and the City Development Plans at Lusaka City Council

1. What objectives drive the document?

2. What are the critical issues within the document?

3. Is the document interpretable?

4. Are the issues specific?

5. Is there evidence of action regarding the incorporation of climate change response?

 ***Objective 2:*** To identify the components of the NPCC that have been incorporated into city plans.

1. What issues does Lusaka City need to take home and implement from the national policy?

2. Has the city localized these issues?

3. What does the city need to do to realize practicality to issues that are common within the two?

4. Is there significant coverage regarding water, energy, urban agriculture, tourism, forestry and tourism?

5. Is there justifiable reference at all to the NPCC in the city plans?

 ***Objective 3***: To investigate the barriers to the integration of NPCC in city plans. for Lusaka.

6. Is the NPCC simplified and understandable enough to be understood by the city plans drafters?

7. How is the financial distribution benefiting climate response?

8. Are there external institutions involved in the process?

9. How is the city managing urbanization to realize its climate response program?

10. How is public participation incorporated in the process?

***Documents :***

i. Zambia National Climate Change Policy
ii. Local Government Act of 2019
iii. Lusaka Master Plan
iv. Lusaka Strategic Plan
v. Integrated Development Plan
vi. Council projects
vii. Annual Budgets

viii. Council Minutes

ix. 8th National Development Plan.

x. 7th National development Plan.

xi. Draft IDP.