

A design evaluation of the National Policy on Climate Change of Zambia: Awareness as an effective tool to mitigate climate change

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Declaration

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ABSTRACT

Climate change has been an important discussion point in the past recent years because of how it has negatively impacted on the environment and sustainable development. Increases in global temperature have melted ice caps on mountains raising ocean levels. Climate change can be defined as changes in regional weather patterns. While weather is a short-term change of atmospheric characteristics, climate change is a region's weather patterns averaged over longer time periods.

In Zambia, some of the main activities contributing to climate change are deforestation, undesirable farming methods and mining activities. Zambia has joined the rest of the world in prioritizing climate change issues which are included in national strategic documents such as the Seventh National Development Plan.

The National Policy on Climate Change (NPCC) which was launched in April 2016 is aimed at dealing with issues of climate change and is currently being implemented. However, the policy is not known by many ordinary Zambians, especially those in the rural parts of the country where deforestation, mining and farming activities are most prominent. Though some citizens have limited information on climate change, the majority do not have the detailed and accurate information needed to participate in the mitigation measures and activities outlined in the NPCC.

Country responses to climate change have to follow guidelines prescribed by various climate change bodies. Some of these guidelines present a challenge to resource constrained countries with many competing development needs. This research advocates that raising climate change awareness can enhance the mitigation strategies offered in the NPCC which is a cost effective way to change current practices.

Within this context, the objectives of this study were to review international response to climate change with specific focus on the major international organizations, conferences and summits that set out the guidelines to member states; to review alternative

approaches adopted by countries to mitigate climate change; and to explore whether community leaders in rural areas understand climate change, the contributing factors and strategies for combating climate change as set out in the NPCC.

The study assesses whether the policy provides for citizen education and climate change awareness as cost effective mitigation strategies, and to seek early evidence of attaining climate change awareness and mitigating strategies amongst community members. A semi-structured questionnaire was distributed to community leaders, including ward councillors, traditional leaders and church leaders, in selected districts to determine awareness of the policy and its content. Finally, it also sought to determine how accessible the policy document is to the public.

The overall findings of the study revealed that though there was a general knowledge of what climate change was among stakeholders, awareness of the NPCC is low and many community leaders do not have access to the policy document.

Recommendations are offered to improve awareness of the NPCC and climate change awareness in Zambia, which includes:

- i. enhanced sensitization and dissemination of information on the policy;
- ii. political will and government commitment;
- iii. inclusion of climate change awareness in school curriculums; and
- iv. more participatory approaches to climate change mitigation.

OPSOMMING

Klimaatsverandering was die afgelope paar jaar 'n belangrike besprekingspunt omdat dit 'n negatiewe uitwerking op die omgewing en volhoubare ontwikkeling gehad het. Stygings in globale temperatuur het die ys bedekking op berge gesmelt wat die oseoanvlakke laat styg het. Klimaatsverandering kan gedefinieer word as veranderinge in die plaaslike weerpatrone. Alhoewel die weer 'n korttermynverandering in die atmosfeer se eienskappe toon, is klimaatsverandering 'n streekspatroon wat oor langer tydperke gemeet moet word.

In Zambië dra die ontbossing, ongewenste boerderymetodes en mynaktiwiteite by tot klimaatsverandering. Zambië het hom by die res van die wêreld aangesluit in die prioritisering van kwessies rakende klimaatsverandering wat in nasionale strategiese dokumente soos die Sewende Nasionale Ontwikkelingsplan opgeneem is.

Die Nasionale Beleid vir Klimaatsverandering ('NPCC') wat in April 2016 van stapel gestuur is, is gemik op die hantering van klimaatsverandering en word tans geïmplementeer. Die beleid is egter nie by baie gewone Zambiërs bekend nie, veral nie in die landelike dele van die land waar ontbossing, mynbou en boerdery die belangrikste aktiwiteite is nie. Alhoewel sommige burgers beperkte inligting oor klimaatsverandering het, het die meerderheid nie die gedetailleerde en akkurate inligting wat nodig is om deel te neem aan die regstellende maatreëls en aktiwiteite wat in die 'NPCC' uiteengesit word nie.

Die landelike bevolking se reaksie op klimaatsverandering moet die riglyne volg wat deur verskillende liggame vir klimaatsverandering voorgeskryf is. Sommige van hierdie riglyne bied 'n uitdaging aan lande met beperkte hulpbronne met baie mededingende ontwikkelingsbehoefte. Hierdie navorsing bepleit ook dat die bewusmaking van klimaatsverandering en die regstellende strategieë wat in die 'NPCC'-beleid voorgestel word, 'n koste-effektiewe manier bied om huidige praktyke te verander.

Binne hierdie konteks was die doelstellings van hierdie studie om die internasionale reaksie op klimaatsverandering te beoordeel, met 'n spesifieke fokus op die belangrikste internasionale organisasies, konferensies en berade wat die riglyne aan lidlande uiteengesit het; alternatiewe benaderings wat deur lande aangewend is om klimaatsverandering te verminder, en om te ondersoek of gemeenskapsleiers in landelike gebiede klimaatsverandering, die bydraende faktore en strategieë vir die bekamping van klimaatsverandering, soos in die 'NPCC' uiteengesit, verstaan.

Die studie onderneem om te bepaal of die beleid voorsiening maak vir bewusmaking van burgeropvoeding en klimaatsverandering as koste-effektiewe regstellende strategieë, en om vroeë bewyse van die bereiking van bewusmaking van klimaatsverandering en die regstelling van strategieë onder lede van die gemeenskap te bekijk. 'n Semi-gestruktureerde vraelys is in geselekteerde distrikte aan gemeenskapsleiers, insluitend wyksraadslede, tradisionele leiers en kerkleiers, versprei om die bewustheid van die beleid en die inhoud daarvan te bepaal. Laastens is daar gepoog om vas te stel hoe toeganklik die beleidsdokument vir die publiek is.

Die algehele bevindinge van die studie het aan die lig gebring dat, alhoewel daar 'n algemene kennis van klimaatsverandering onder belanghebbendes was, die bewustheid van die 'NPCC' laag is. Daarbenwens het baie gemeenskapsleiers nie toegang tot die beleidsdokument nie.

Aanbevelings word aangebied om die bewustheid van die 'NPCC' en die bewusmaking van klimaatsverandering in Zambië te bevorder, wat die volgende insluit:

- i. Verhoogde sensitisering en verspreiding van inligting oor die beleid
- ii. Politieke wil en regeringsverbintenisse
- iii. Insluiting van bewustheid van klimaatsverandering in skoolkurrikulums en
- iv. Meer deelnemende benaderings tot die regstelling van klimaatsverandering.

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LIST OF ACRONYMS AND ABBREVIATIONS

7NDP-Seventh National Development Plan

CO₂-Carbon Dioxide

COP-Conference of Partners

DPME-Department Performance Monitoring and Evaluation

EU-European Union

FAO - Food and Agriculture Organization

GEF-Global Environmental Facility

GHGs-Greenhouse Gases

INDC-Intended Nationally Determined Contribution

IPCC-Intergovernmental Panel on Climate Change

LDECF-Least Developed Country Fund

LECB-Low Emission Capacity Building

MCA-Multi-Criteria Analysis

MDCs-Nationally Determined Contributions

MDGs-Millennium Development Goals

MLNREP - Ministry of Lands, Natural Resources and Environmental Protection

MoCTA - Ministry of Chiefs and Traditional Affairs

MPCC-National Policy on Climate Change

NWFPs - Non-wood Forest Products

NAMA-Nationally Appropriate Mitigation Actions

NAPA-National Adaption Plan Action

NEPF-National Evaluation Policy Framework

REDD - Reducing Emissions for Deforestation and Forest Degradation

R-SNDP-Revised Sixth National Development Plan

SDGs-Sustainable Development Goals

SMC-Second National Communication

SPSS - Statistical Package for Social Sciences

TFI-Task Force on National Greenhouse Gas Inventories

TGICA-Task Group on Data and Scenario Support for Impact and Climate Analysis

UK-United Kingdom

UNCED-United Nations Conference on Environment Development

UNDP-United Nations Development Programme

UNESCO-United Nations Educational and Cultural Organization

UNFCCC-United Nations Framework Convention on Climate Change

UN-United Nations

USA-United States of America

WMO-World Meteorological Organization

ZFAP - Zambia Forestry Action Plan

CHAPTER 1

1.0 INTRODUCTION

Planet earth has over the past 150 years lost its balance with regard to its environmental sustainability. We, its inhabitants, through a number of activities have disturbed the ecosystem taking away those parts that would naturally absorb the harmful greenhouse gasses, such as carbon dioxide, from the air. We have destroyed vast forests by cutting down trees that soak up the greenhouse gasses that cause global warming and are responsible for regulating the climate of the earth. Industrial processes have a major role in the emission of greenhouse gases.

Climate change issues have been a worldwide concern over the past decade so much so that they have been highlighted as part of the Millennium Development Goals (MDGs) and now the Sustainable Development Goals (SDGs). Addressing climate change is a great challenge for a resource-constrained country like Zambia, since the recommended climate change strategies may be expensive to implement.

In 2016, the Zambian government adopted the National Policy on Climate Change (NPCC) as a national strategy to deal with climate. The relevance and early indications of success of the NPCC are the main interest of this research.

This chapter commences with a background description of climate change, followed by a clear explanation of the identified research problem. The research objectives, design and brief description of the methodology explain how this problem will be addressed. In the conclusion of this chapter, an overview of key terms and the respective chapters of this report is presented.

1.1 BACKGROUND AND RATIONALE

Climate change has affected countries worldwide and it has negatively impacted on national economies, people's livelihoods and may affect future generations if not checked. Sustainable development defined by the Brundtland Commission as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"

(Swilling and Annecke, 2012: 26) can be achieved through commitment by all relevant stakeholders.

Human activities are the main cause of climate change in Zambia, with one of the most significant causes being deforestation. Though industrialization is the largest source of greenhouse gases (GHGs) at a global level, deforestation plays a major role in the contribution of climate change in Zambia. The rural poor cut down trees for fuel to fulfil both domestic and economic needs and in urban areas, the mining and manufacturing industries pollute the air and water. Zambia has in the recent years observed significant effects of climate change in soil erosion, changes in weather patterns, droughts, seasonal and flash floods and extreme temperatures. These effects disrupt activities in the agricultural sector which contribute to increased food insecurity and poverty levels in the country. Other sectors of the economy being impacted by climate change include the following:

- i. Energy sector.
- ii. Tourism sector.
- iii. Food and water security.
- iv. Agriculture sector.
- v. Forestry sector.
- vi. Wildlife sector.
- vii. Mining sector.
- viii. Health sector.
- ix. Cross cutting issues

Against this background, the Government of the Republic of Zambia adopted the NPCC. “Government had developed the National Policy on Climate Change to provide a framework for coordinated response to climate change issues. It gives guidance on how the Zambian economy can grow in a sustainable manner and thereby fostering a smooth implementation of the Revised Sixth National Development Plan (R-SNDP) and its successor plans including the achievement of the vision 2030”. (MLNREP, 2016. 2).

Though the NPCC and supporting documents have been adopted, it is questioned whether the people of Zambia are aware of the contents or are

applying the strategies outlined in the policy, as the on-going practices seem contradicting.

1.1.1 Awareness as a low cost strategy to curb climate change

A number of studies and theories have been developed by the Intergovernmental Panel on Climate Change (IPCC) to deal with climate change. Rajendra Pachauri, Chairperson of the IPCC has been quoted as saying, “we either continue on the path that we are on and possibly face catastrophic consequences of climate change, or we can listen to the voice of science and act accordingly,” (IPCC, 2014). It has been argued though that the IPCC has put emphasis on a more top-bottom approach where scientists give advice to policy makers who in turn guide the general public through implementation on how to drive the agenda of climate change. A better approach might be found in Amelia Manuti who, in her study on climate change awareness, has said “both mass and interpersonal communication holds the key to improvement in public understanding of environmental problems” (Manuti, 2015). Awareness thus plays a significant role in climate change mitigation. The general public needs to be well informed about what climate change is and how it will affect not only the present generation but the future generations as well.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) through a programme called ‘Education for Sustainable Development’ has been providing support to countries where climate change issues are integrated into the educational system. “Education and awareness-raising enables informed decision making and plays an essential role in increasing adaptation and mitigation capacities of communities and empower women and men to adopt sustainable lifestyles” (UNESCO, 2016).

In a climate change study done in China in 2012, results revealed that “93% of the respondents indicated that they at least knew about climate change, 11% said they knew a lot, 54% knew something and 28% had never heard of climate change” (Wang and Li, 2012.1). The percentage of respondents that knew a lot about climate change is not good enough if the whole nation is to jointly and actively participate in combating climate change and the importance of climate

change awareness by citizens is clearly seen. China is far more advanced with regard to scientific and technological know-how than Zambia and one may wonder what the results would have been had a similar study been done in Zambia.

In another study on the 'Assessment of awareness regarding climate change in an urban community', climate change was described as one of the most devastating environmental threats and it was of great importance to assess climate change awareness in curbing its effects. "The urban general population is aware of a changing global climate. Personal efforts are now important in mitigating climate change as per the urban population. The awareness campaigns regarding mitigation activities are recommended" (Harshal, Pandwe, Chawla, Fernandez, Singru and Pawar, 2011)

As is the trend with most policies in Zambia, the contents are usually well articulated with a series of costly consultative processes and familiarization tours and workshops but the implementation process leaves much to be desired. With a NPCC in place one would expect that information on the policy and climate change in general would be made available across the country but this may not necessarily be a true picture. Awareness on climate change may still be limited in parts of the country, especially in rural areas. It is especially difficult for the rural dwellers to understand national policies such as the NPCC due to poor literacy levels and the bulkiness of the document.

Awareness of the NPCC including all other relevant documents and information regarding climate need to be accessible and understood by the public for a meaningful impact to be achieved. A lot of energy, time, human resource efforts and public financial resources go into the formulation of a public policy. Having low levels of awareness of a policy may lead to the policy being deemed ineffective. Communication is an important aspect of enhancing awareness of policy documents such as the NPCC. "The purpose of developing policy-relevant documents and making presentations is to enhance prospects for the utilization on Knowledge" (Dunn, 2014: 384).

Public policy communication is an important element of enhancing the involvement of citizens and the implementation of the policy. It is an indication

of political will and good leadership on the part of the government and it ensures that once the policy is implemented it will succeed.

1.2 RESEARCH PROBLEM

In line with international efforts, Zambia needs to implement strategies that can mitigate practices that cause climate change. Despite documents such as the NPCC, National Adaptation Plan of Actions (NAPAs), Nationally Appropriate Mitigation Actions (NAMAs), Nationally Determined Contributions (NDCs) and the Seventh National Development Plan (7NDP), very few strides are being made to combat climate change. Lack of progress may be attributed to a lack of awareness among the citizens, especially the majority who are located in the rural areas.

Zambia is an undeveloped country and its national treasury suffers significant budgetary and financial constraints. Implementing a policy like the NPCC will be a very expensive undertaking. In this context, concentrating on less expensive 'awareness promotion' strategies to combat pollution, deforestation and other practices that contribute to climate change may be more viable. However, the success of such awareness strategies depend on its ability to reach the entire population, including those in rural areas.

1.3 RESEARCH AIMS AND OBJECTIVES

Climate change awareness plays a significant role in mitigating the negative effects of climate change because through awareness people become more conscious of their environmental responsibilities. Awareness programmes ought to be systematic and continuous in order to ensure that the mind-set of people change, which in turn could lead to behavioural changes.

This research aims to assess the extent to which the NPCC has been communicated to rural populations, so as to offer recommendations that may enhance awareness of the NPCC, climate change and climate change mitigating strategies in Zambia. The following are the specific objectives of this study:

- To review international responses to climate change with particular focus on the major international organisations, conferences and summits.

- To review the approaches adopted by different countries to mitigate climate change.
- To review NPCC with particular emphasis on the content and strategies that raise citizen awareness of the causes and effects of climate change.
- To assess whether citizens are aware of the causes and consequences of climate change, as well as the NPCC that aims to combat climate change in Zambia.
- To offer recommendations for improved awareness of the NPCC and climate change awareness in Zambia.

The NPCC is essential to this study because it is a policy that guides the Zambian government in combating climate change. It is however preceded and supported by further policies, plans or strategies that will also be included in this study, as these pursue similar aims and may account in part for the improved awareness of climate change in the Zambian population.

1.4 RESEARCH METHODOLOGY

The tools and procedures to be used in this study will be qualitative in nature and non-probability sampling will be used. The sampling frame will be obtained from provincial centres in the following four provinces:

- i. Lusaka Province.
- ii. Southern Province.
- iii. Copperbelt Province.
- iv. Eastern Province.

Selected participants (five per province) who will represent a group of people from chiefdoms, churches, wards and members of the community will be interviewed and a simple questionnaire will be used to obtain basic knowledge on climate change and the NPCC. Groups targeted to obtain the required information are the stakeholders and government departments and institutions responsible for implementing the NPCC, which include the following:

- Ward councillors.
- Community leaders.

- Church leaders.
- Traditional leaders.
- Civil Society.

The selected participants will be in a position to furnish the researcher with the information required and the following methods will be used to collect data:

- i. Structured and semi-structured interviews.
- ii. Individual interviews.
- iii. Documentation (secondary data).

The methodology for the empirical component of this research is explained in more detail in chapter 5.

1.5 DEFINITION OF KEY CONCEPTS

1.5.1 Climate Change

Climate change can be defined as changes in the global weather patterns due to increased levels of greenhouse gases (GHGs) in the atmosphere. The Human Development Report 2007/2008 confirms this definition by stating that “the heart of the climate change problem is that the earth’s capacity to absorb carbon dioxide and other greenhouse gases is being overwhelmed. Humanity is living beyond its environmental means and running up ecological debts that future generations will be unable to pay” (Human Development Report, 2007: 22).

1.5.2 Public awareness

In the context of this research, public awareness refers to the efforts made to inform the public on a specific goal and in this case the NPCC. These efforts could include reaching out to the grassroots and general public through various forms of communication such as print and electronic media and awareness campaigns. Public awareness is an important aspect of the successful implementation of public policies. An effective awareness campaign can include a number of strategies that are cost effective as information can be disseminated through already existing structures.

1.5.3 Deforestation

Deforestation is an integral part of climate change. It is of relevance to this study because of its prevalence in Zambia and how it is negatively affecting our environment. A common trend in Zambia, deforestation is practiced on a large scale adversely affecting soil quality.

Trees are cut to maintain the livelihoods of Zambia's rural poor for the most part and urban dwellers as well. Deforestation has been prioritised as an environmental problem in Zambia. Sensitization on the negative impacts of deforestation has been done though poorly implemented as the practise is a means of survival. With the current electricity load shedding situation in the country being caused by extremely low level of water at energy sources, majority of households are relying on charcoal which has further threatened the continuation of deforestation.

Awareness campaigns on climate change in Zambia should include significant information on deforestation as a mitigation measure.

1.5.4 National Policy on Climate Change (NPCC)

The Zambian government formulated the NPCC in an effort to have a more coordinated approach to effectively manage climate change which has affected socio-economic development and is a deterrent to sustainable development. It is evident that Zambia's weather pattern which was favourable before has changed for the worst characterised by poor rainfall and extremely hot temperatures.

1.5.5 Policy evaluation

"Policy evaluation can be defined as methods and principles used to evaluate the impact of a policy. Evaluation determines the impact, merit and worth of a policy" (Centres for Disease Control Prevention, 2011). A range of research methods are used to investigate the effectiveness of interventions, implementation and processes of policy. Awareness of a public policy is a key ingredient in ensuring that members of the community put into practice the contents of the policy and support its implementation.

1.6 CHAPTER OUTLINE

This study will include seven chapters which will all begin with a brief introduction of what is to be included in the respective chapter. Below are the chapter outlines for it.

1.6.1 Chapter one

The chapter will introduce the study giving a background and rationale of the study. Relevant and key concepts will be defined and the research problem, aim, objectives design and methodology will also be highlighted.

1.6.2 Chapter two

Chapter two constitutes the literature review. It will discuss the international conventions on climate change and provide a review of the major international treaty decisions taken as mitigation measures. It will also look at climate change as an international problem and give a historical perspective on how this problem emerged explaining why it is problematic in nature. Climate change and how it negatively affects sustainable development will also be discussed here.

1.6.3 Chapter three

Chapter three will discuss how countries' have responded to climate change. The selection of these countries has been done to provide a balanced view, in that it will look at both developed and less developed countries (those with resources and those with limited resources). Comparisons will be made which will also focus on countries from different continents in order to understand the global nature of this problem.

1.6.4 Chapter four

Chapter four will discuss climate change in Zambia. It will give a brief profile about the country and highlight deforestation as one of the main contributors to climate change. It will then describe the development of the NPCC. It will also look at other strategies formulated in the past and which eventually led to the development of the NPCC.

1.6.5 Chapter five

The research design and methodology will be presented in this chapter. With regard to the methodology, this study will be qualitative in nature and make use of non-probability sampling methods. Respondents will include traditional leaders, ward councillors and church leaders. Data will be obtained using basic individual interviews, in-depth individual interviews and in addition already existing documentation will be used.

1.6.6 Chapter six

This presentation and interpretation of results collected during the data collection process will be discussed in chapter six.

1.6.7 Chapter seven

In the concluding chapter, recommendations to improve awareness among the citizenry of Zambia are offered based on findings of the research.

CHAPTER 2: INTERNATIONAL CONVENTIONS ON CLIMATE CHANGE

2.0 INTRODUCTION

This chapter will focus on climate change as an international problem. To begin with, it will describe sustainable development linking it to climate change. Climate change issues have been highlighted in the SDGs and this will also be highlighted in this chapter. A historical perspective on climate change will be given explaining the greenhouse effect. It will also answer the question to the problematic nature of climate change.

Thereafter, it will look at the international response to climate change and the major international organisations, conferences and summits held, including the treaty decisions at both international and regional level. It will then look at how specific countries are handling climate change and lastly it will review various climate change policies that have been adopted by other countries with limited resources like Zambia.

2.1 SUSTAINABLE DEVELOPMENT

As the world is currently focused on sustainable development, it is inevitable for climate change issues to take centre stage as well, as these issues have an undeniable relationship. The Intergovernmental Panel on Climate Change (IPCC) stated that, “there is a dual relationship between sustainable development and climate change. On the one hand, climate change influences key natural and human living conditions and thereby also the basis for social and economic development, while on the other hand, society’s priorities on sustainable development influence both the GHG emissions that are causing climate change and the vulnerability,” (Intergovernmental Panel on Climate Change, 2007).

“Sustainable development at the Brundtland Commission of 1987 was defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Swelling & Annecke 2012: 26). The emphasis of sustainable development is development that balances different contending essentials against environmental and the socio-economic needs of the current generation.

2.1.1 The Sustainable Development Goals (SDGs)

The SDGs that were adopted at the United Nations Summit in 2015 were effected on 1st January 2016. These goals are to be adhered to universally in an effort to reduce inequalities and end poverty. These goals are an extension of the MDGs. It has been recognised that poverty eradication must be accompanied by strategies that build economic growth and address social needs such as education, health, social protection, employment opportunities, environmental protection and climate change.

Though countries are not bound to adhere to the SDGs, it is expected that governments domesticate them to strategies that suit them. The implementation, monitoring and review on the progress made is the responsibility of the respective countries and requires accessible and timely data collection which should be of high quality. The SDGs include the following:

- i. Zero hunger.
- ii. Good health and well-being.
- iii. Quality education.
- iv. Gender equality.
- v. Clean water and sanitation.
- vi. Affordable and clean energy.
- vii. Decent work and economic growth.
- viii. Industry, innovation and infrastructure.
- ix. Reduced inequalities.
- x. Sustainable cities and communities.
- xi. Responsible consumption and production.
- xii. Climate action.
- xiii. Life below water.
- xiv. Life on the land.
- xv. Peace, justice and strong institutions.
- xvi. Partnership and goals.

The goal number 12 (twelve), climate action, speaks directly to climate change and its objective is to take urgent action to deal with the impacts of climate

change. Other SDGs closely related to that of climate action and the nature of the relationship are briefly described below:

- **Goal 10 (ten): make cities inclusive, safe, resilient and sustainable:** It involves making cities inclusive, safe resilient and sustainable. Poorly planned cities in urban areas contribute to the emission of greenhouse gases due to the high concentration of people living in one location.
- **Goal 11 (eleven): Ensure sustainable consumption and production patterns:** which aims to ensure sustainable consumption and production promoting the use of renewable energy in infrastructure and production sectors. It considers the environmental and social aspects for sustainability.
- **Goal 13 (thirteen): Conserve and use the oceans, seas and marine resources in a sustainable way:** ensuring that oceans, seas and marine resources are conserved and maintained to go a long way in supporting climate change mitigation and adaptation as the ecological systems will not be disturbed.
- **Goal 14 (fourteen): Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss:** the goal here is to ensure the sustainable management of forests, combat desertification, stop and reverse land degradation and stop biodiversity loss. Forests which cover a large area of planet earth are an important part of the ecosystem. Deforestation and forest degradation have contributed to impacts of climate change, loss of biodiversity and imbalances in the ecosystem.

The emphasis of climate change in the SDGs illustrates its gravity as an international problem and the willingness of the international community through the United Nations to tackle the problem. Doing nothing about the issue of climate change now entails catastrophic results in the near future.

2.2 CLIMATE CHANGE AS AN INTERNATIONAL PROBLEM

As already alluded to in the introductory chapter, climate change has attracted worldwide concern. “Climate change is widely recognized as one of the major challenges facing humankind” (IPCC, 2007). The United Nations Framework

Convention on Climate Change (UNFCCC) became enforceable in 1992 with the aim of reducing and stabilising the emission of GHGs caused by human activities. “In order to implement the provisions of the convention, parties are encouraged to formulate and implement measures to mitigate climate change by addressing anthropogenic emissions of GHGs and to facilitate adaption to its impacts. This is to ensure that climate change does not compound the economic and social challenges already faced by the world and developing countries in particular” (MLNREP, 2016: 3).

A historical perspective on climate change that has added to the current knowledge states the following,

“The climate system is a complex, interactive system consisting of the atmosphere, land surface, snow and ice; oceans and other bodies of water; and living things. The atmospheric component of the climate system most obviously characterizes climate; and climate is often defined as ‘average weather’. Climate is usually described in terms of the mean and variability of temperature, precipitation and wind over a period of time, ranging from months to millions of years (the classical period is 30 years)” (Kiehl and Trenberth, 1997).

Climate is influenced by both internal and external factors interacting with one another. External factors that affect the climate include the natural forces from human activities that induce changes in the atmosphere or volcanic eruptions or variations in the solar system.

“There is increasing scientific evidence to suggest that humans are gradually but certainly changing the Earth's climate. In an effort to prevent further damage to the fragile atmosphere, and with the belief that action is required now, the scientific community has been prolific in its dissemination of information on climate change. Inspired by the results of the Intergovernmental Panel on Climate Change's Second Assessment Report, Catrinus and Munasinghe set out to create a concise, practical, and compelling approach to climate change issues. They deftly explain the implications of global warming, and the risks

involved in attempting to mitigate climate change” (Catrinus and Munasinghe, 1998: 349)

2.3 A BRIEF HISTORICAL PERSPECTIVE ON CLIMATE CHANGE

The realisation of changes in the weather patterns began in the nineteenth century when changes in the atmosphere and weather was described as the ‘greenhouse effect’. It was argued that human activities led to the emission of GHGs which included “natural and human gasses in the atmosphere that absorb and remit infrared radiation within the thermal infrared range” (MLNREP, 2016; IPCC, 2007: 81).

GHGs include the following:

- i. Carbon dioxide (CO₂).
- ii. Methane (CH₄).
- iii. Nitrous oxide (N₂O).
- iv. Chlorofluorocarbons (CFCs).
- v. Water vapour (H₂O).

Understanding the greenhouse effect can be explained by looking at how a glasshouse works. The use of the transparent material allows the light into the building during daylight to keep the room warm. When the light penetrates into the glass, it is trapped inside the room making it warm and the warm temperature can be maintained at night and during the cold season. The light that enters the glasshouse is absorbed by the solid surfaces on the inside and this absorbed energy is converted into infrared energy which is later emitted into the air causing the ‘greenhouse effect’.

Relating this concept to planet earth, the earth’s atmosphere is like a glasshouse; CO₂ and other GHGs in the atmosphere are like the transparent material in a greenhouse, trapping light and heat from the sunlight during the day. Not all of this heat is released at night time. This creates a ‘greenhouse effect’ where the earth is becoming warmer over time.

Though originally only GHGs like carbon dioxide were seen as responsible for the increasingly warming effect in the atmosphere, later scholars also attributed

climate change practices such as deforestation, grazing of land and irrigation (Glacken and Clarence, 1967). Other scholars still argued that human activities did not affect climate change, as observed changes in weather patterns were not steady or long-term despite changes in the weather.

Naturally, the earth's climate needs to be balanced in order for plants, animals, natural vegetation and the entire eco-system to thrive and sustain human beings who need these to survive. Changes in the climate cause imbalances and the larger the change in the climate, the more negative its impact on the climate. Livelihoods have always been supported by the type of climate we have always known and because we cannot always see instant impacts of climate change, it is difficult for people to see that the activities they engage in are actually harming the earth and it has been a challenge by nations to ensure public awareness. "Whilst 'global warming' has become a household term, public awareness of the international framework for tackling climate change is low" (Norton and Leaman, 2004).

The burning of fossil fuels leads to the emission of GHGs and it is for this reason that highly industrialized countries are said to be the largest contributors to the increased changes in the climate. This is due to the many industries and power plants that use natural gases, coal and oils to produce power. It is only in the recent past that renewable energy has been used as an alternative source of energy by the manufacturing industry.

Extreme events caused by climate change have been recorded around the world including Zambia and some of these include the following:

- Very high temperatures during summer.
- Extreme low temperatures during winter.
- Intense rainfall.
- Floods.
- Droughts.
- Long dry spells.
- Extended or shorter periods of a specific season.

According to the NPCC of Zambia, "Zambia has experienced a number of climate-related hazards including droughts and dry spells, seasonal and flash

floods, and extreme temperatures. Some of these, especially droughts and floods, have increased in frequency and intensity over the two decades and have adversely impacted on food and water security, energy and livelihoods of communities. Temperatures also indicate a rising trend with the potential for increased heat stress, land degradation and desertification. Such impacts are likely to compound the daunting economic and social challenges the country is already facing. Therefore, actions to minimize the potential future impacts of climate change are critical” (MLNREP, 2016: 2)

2.4 INTERNATIONAL RESPONSE TO CLIMATE CHANGE

The First World Climate Conference was held in Geneva in February, 1979. This was a meeting that was mainly centred on scientific and academic aspects of climate change. It was at this meeting that a declaration was made, appealing to world governments to take notice of and prevent the human-induced changes to the climate that would potentially have adverse effects on the well-being of humanity (UNEP, 1992). It is at this important event that the establishment of the following critical climate change programmes were initiated:

- i. World Climate Change Programmes.
- ii. World Climate Change Research Programme.
- iii. IPCC.

The second Climate Conference was in Geneva and this was a huge stepping stone for serving to address climate change globally. Since then, numerous international conferences have been held and these have targeted policy makers, scientists and leaders of governments where both policy and scientific issues have been addressed. Some of these meetings will be discussed further on in this study. While some of the meetings have been held under the umbrella of the United Nations, others have been held at regional level and individual governments have also initiated meetings at both national and regional level.

The first international policy for climate change which was legally binding was the United Nations Framework Convention on Climate Change (UNFCCC). It took two years of negotiations with the IPCC to conclude this legal instrument (UNEP, 1992).

There are a number of international organisations, conferences and summits that have been held over the years concerning issues of climate change and these will be highlighted in this section. These platforms are created at different levels which include international, regional, national and local levels to meet the needs of these respective levels in climate change mitigation and adaptation.

2.4.1 United Nations Environment Programme (UNEP)

UNEP is mandated to coordinate activities of an environmental nature in order to enhance sustainable development.

The UNEP mission statement states that it aims “to provide leadership and encourage partnerships in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations” (UNEP, 2017). Apart from issues of climate change, the UNEP also looks at the following:

- i. Disaster and conflicts.
- ii. Environmental governance.
- iii. Chemical and waste management.
- iv. Resource efficiency.
- v. Eco-management.
- vi. Environment under review.

“The UNEP Climate Change sub-programme focuses on helping countries to pursue low-emission development pathways and strengthen their adaptation and resilience capacities to the changing climate. In doing so we help countries achieve the 2030 Agenda for Sustainable Development, particularly Goal 7 – Affordable and Clean Energy, and Goal 13 – Climate Action” (UNEP, 2017).

2.4.2 United Nations Framework Convention on Climate Change (UNFCCC)

The UNFCCC was adopted on 9th May, 1992. It is an international environmental treaty ratified by the industrialized countries with the objective of limiting levels of GHGs in the atmosphere and it also sets a framework as to how international treaties and agreements regarding climate change should be negotiated to achieve what was drawn by the UNFCCC. Some of the conferences and agreements that will be discussed below are the Conferences

of the Parties (COP) held annually by parties to the convention aimed at assessing the progress being made with regard to climate change.

According to information on UNFCCC by Wikipedia, the convention as at 2015 has 197 parties which have further been classified as follows:

- i. **Annex I:** These are the industrialized countries and those economies transitioning to industrialization who are the main drivers of the convention. Forty-three (43) countries, mostly from the European Union (EU), are classified under this category which include:
 - United States of America (USA)
 - United Kingdom (UK)
 - Russia
 - Canada
 - Australia
 - Germany
 - France
 - Italy
 - Switzerland
 - Sweden
 - Belgium
 - New Zealand
 - Netherlands
- ii. **Annex II:** Parties in this category belong to the Organization for Economic Cooperation and Development (OECD). Twenty-four (24) of the parties listed in Annex I are also a part of this classification. These are required to provide financial and technical support to the developing countries, assisting them to mitigate climate change and adaptation by reducing their greenhouse emissions and managing the impacts of climate change.
- iii. **Annex B:** Parties classified in this section are parties to the first or second Kyoto Protocol greenhouse gas emission targets.

- iv. **Least-Developed Countries (LDCs):** 47 (forty-seven) parties belong to this section. These are the countries with challenges in the management and adaptation to the effects of climate change.
- v. **Non-Annex I:** Zambia belongs to this classification, including all other countries not listed in Annex I. These are mostly low-income developing countries that may volunteer to be a part of Annex I when sufficiently developed.

2.4.3 Intergovernmental Panel on Climate Change (IPCC)

The IPCC was established in November, 1988 by the UNEP. “The Intergovernmental Panel on Climate Change (IPCC) is the international body for assessing the science related to climate change. The IPCC was set up in 1988 by the World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP) to provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation. IPCC assessments provide a scientific basis for governments at all levels to develop climate-related policies, and they underlie negotiations at the UN Climate Conference – the United Nations Framework Convention on Climate Change (UNFCCC). The assessments are policy-relevant but not policy-prescriptive: they may present projections of future climate change based on different scenarios and the risks that climate change poses and discuss the implications of response options, but they do not tell policymakers what actions to take” (IPCC, 2013).

A number of scientists around the world volunteer their time and expertise to produce IPCC Assessments. The assessments provide guidelines for governments to base their guidelines on scientific principles as they develop climate change policies and they also form the basis for negotiations at UN climate change conferences. Due to their intergovernmental nature, these assessments provide scientific information that is balanced and unbiased. “The IPCC was established to provide the decision-makers and others interested in climate change with an objective source of information about climate change. The IPCC does not conduct any research nor does it monitor climate-related data or parameters. Its role is to assess on a comprehensive,

objective, open and transparent basis, the latest scientific, technical and socio-economic literature produced worldwide relevant to the understanding of the risk of human-induced climate change, its observed and projected impacts and options for adaptation and mitigation. IPCC reports should be neutral with respect to policy, although they need to deal objectively with policy-relevant scientific, technical and socio economic factors. They should be of high scientific and technical standards, and aim to reflect a range of views, expertise and wide geographical coverage” (McIntyre, 2008).

With regard to how these reports are assessed, leading scientists have volunteered their expertise and are the main authors of reports providing scientific explanations to climate change. These are the reports that are reviewed and produced for use.

The IPCC go on further to say that: “The authors producing the reports are currently grouped into three working groups – Working Group I: The Physical Science Basis; Working Group II: Impacts, Adaptation and Vulnerability; and Working Group III: Mitigation of Climate Change – and the Task Force on National Greenhouse Gas Inventories (TFI). As part of the IPCC, a Task Group on Data and Scenario Support for Impact and Climate Analysis (TGICA) facilitates the distribution and application of climate change-related data and scenarios. IPCC Assessment Reports cover the full scientific, technical and socio-economic assessment of climate change, generally in four parts – one for each of the Working Groups plus a Synthesis Report. Special Reports are assessments of a specific issue. Methodology Reports provide practical guidelines for the preparation of greenhouse gas inventories under the UNFCCC” (IPCC, 2013).

Through its three working groups, it can be said that many aspects of climate change have been well catered for by the IPCC and the scientific information obtained from the various groups is useful and relevant. Findings from the IPCC have been instrumental on knowledge and information on climate change.

2.4.4 Rio Earth Summit

The Rio Summit which was the United Nations Conference on Environment and Development (UNCED), was held in June 1992 in Rio de Janeiro. It

emphasized that issues concerning the environment and socio-economic development should be thought of in unison as inter-related fields. Issues such as deforestation, biodiversity and desertification were also agreed upon.

2.4.5 Kyoto Protocol

The Kyoto was adopted on 11th December, 1997 and the agreement came into force in February, 2005. It was an agreement based on the international reduction of emissions. “The goal was to reduce emissions of six greenhouse gases by 5.2% between 2008 and 2012, based on 1990 levels. An international carbon market was established to help achieve this goal,” (Planet Energies, 2017). This agreement is said to have been a failure because the proposed reduction in carbon emission was not low enough to make an impact. Highly industrialized countries were exempted from the agreement and America did not ratify it.

The Kyoto agreement expired in 2012 and the international community were keen on negotiating reductions in carbon emissions and also increase sinks of greenhouse gases to avoid the harmful effects of climate change.

2.4.6 Copenhagen Climate Change Conference (Copenhagen Accord)

This was a continuation of the Kyoto Protocol held in Denmark in 2009. “Key elements of the Copenhagen Accord include: an aspirational goal of limiting global temperature, increase to 2 degrees Celsius; a process for countries to enter their specific mitigation pledges by January 31, 2010; broad terms for the reporting and verification countries’ actions; a collective commitment by developed countries to the amount of \$30 billion in ‘new and additional’ resources in 2010-2012 to help developing countries reduce emissions, preserve forests; and adapt to climate change; and a goal of mobilizing \$100 billion a year in public and private finance by 2020 to address developing countries’ needs. The accord also calls for the establishment of a Copenhagen Green Climate Change Fund, a High Level Panel to examine ways of meeting the 2020 finance goal, a new Technology Mechanism and a mechanism to channel incentives for reduced deforestation” (Centre for Climate Change and Energy Solutions, 2017).

2.4.7 Cancun Climate Change Conference

According to the UNFCCC, this conference took place in Cancun, Mexico in December 2010. Parties at this conference agreed on the following:

- i. Reduce GHGs emissions.
- ii. Promote research and development to develop new technologies.
- iii. Provide funding for green climate initiatives.
- iv. Enhance cohesiveness in adaptation action (United Nations Framework Convention of Climate Change, 1992).

2.4.8 Durban Climate Change Conference

This Conference was held in Durban, South Africa, in December 2011 with the aim of establishing a new treaty with regards to the limiting of carbon emissions. Though this treaty was not ratified, progress was made in creating the Green Climate Fund. Poor countries would be the beneficiaries of this fund to help them cushion the impacts of climate change.

2.4.9 The Paris Agreement

The 'Paris Agreement' was adopted on 12th December, 2015. It was a contribution to the UNFCCC and nations came together to enhance climate change mitigation and adaptation measures. It also emphasized support for assisting developing countries. This Agreement was aimed at limiting global warming to below 2°C which entails that mitigation efforts mainly have to do with reducing emissions.

It is important to note that a number of COPs have been held from the beginning of the international response to climate change.

It is clear that regardless of climate change being a global problem, those countries that are least developed have more to lose due to the consequence of foreseen increased poverty levels and build-up of inequalities between the 'haves and have-nots as already alluded to above. Though developing countries contribute the least to the emission of greenhouse gases they have very high vulnerability levels and they carry the heavier burden because they have limited resources competing with the provision of basic needs to tackle the problem. Developed wealthier countries on the other hand who contribute the most to climate change suffer less from the effects. This has thus brought

about the question of who should take the responsibility for dealing with the climate problem.

It can therefore be said that responses to climate change at an international level need to be spearheaded by the developed countries who have the resources and are the ones contributing the most to the emission of GHGs through their production and industrialization processes. Less developed countries need to draw lessons from the developed world and develop policies that speak to their situation but in line with the guidelines provided by the international conventions.

2.5 CHAPTER CONCLUSION

This chapter has highlighted climate change as an international problem. It firstly gave a historical perspective on climate change followed by an explanation of what the 'greenhouse effect' is. This was necessary as it provided an insight of the problems caused by climate change and also how they developed overtime. It is through these events and knowledge that issues of climate change were prioritized at an international level.

It has been stated that the First World Climate Conference of 1979 was the first international effort to deal with climate change as a problem and it led to the establishment of important programmes such as the IPCC in 1988. With regard to international policy, the UNFCCC was the launch of the international response to climate change which was adopted in 1992. It is under the umbrella of the UNFCCC that the preceding meetings, conferences, conventions and COPs, as discussed above, were held.

The above-mentioned international conferences and meetings are indeed a confirmation of how negatively climate change has affected mankind worldwide. As has been alluded to in this chapter human activities lead to the emission of greenhouse gases which cause climate change. These events generally call for the reduction and stabilized level of GHG emissions in the atmosphere. Though more emphasis is put on the industrialized countries, all parties to these conventions have the responsibility to contribute to finding solutions to climate change.

Generally, the following are recommendations made by the various conventions held:

- Formulation of national adaptation and mitigation programmes.
- National prevention measures of greenhouse gas emissions.
- Scientific and technological cooperation at an international level.

In order to meet these obligations at both national and international level, it is important that each country adopts a policy or strategy that has prioritized climate awareness and education. National specific policies on climate change adaptation and mitigation can only be achieved if the citizenry of these states are knowledgeable on climate change issues and what measures their governments are putting in place to deal with the problem. Climate change awareness provides information on how the citizenry can contribute to the cause at individual, household, community and national levels respectively and this will in the long run enhance sustainable development which has been prioritized globally.

It must be noted that resource-constrained countries are also party to the many climate change treaties and agreements. Though the agreements offer assistance to developing countries to finance climate change projects that strengthen adaptation and mitigation, accessing these funds is highly competitive. In many instances, the funds may also not align with the needs of developing countries. Competing needs in developing countries makes it difficult for them to deal with climate change issues.

Having looked at climate change as an international problem, the next chapter offers a comparative analysis on how different countries have responded to the problem.

CHAPTER 3: COUNTRY RESPONSES TO CLIMATE CHANGE

3.0 INTRODUCTION

The first chapter indicated that climate change is caused by human activities. Over the past decades, activities such as industrialization, mining and deforestation have led to an increase of emission of GHGs. One of the most obvious solutions to this problem is awareness in that the problem is induced by human activities. The response of different countries to climate change has a lot to do with awareness because governments can only effectively respond to a social or economic problem that citizens are aware of.

A study in 2007/2008 and conducted in 119 countries about their perspective on climate change was done and the following were some of the observations made:

- i. Very few members of the public in developing countries are aware about climate change compared to developed countries. Worldwide, “40 percent of adults have never heard of climate change” (Leiserowitz and Howe, 2015).
- ii. Public awareness of climate change is achieved through trends in education levels, communication access and civic engagement.
- iii. The study also revealed that people living in developing countries look at climate change as being more of a threat than those in developed countries.

Awareness plays an important part in climate change mitigation because it increases enthusiasm, support, motivation and action among citizens. Climate change awareness is a valuable tool that can be used by resources-constrained countries. Intensified awareness in land use and the use of the many forms of clean energy can go a long way in reducing emissions even further.

Dissemination of information on climate change needs to reach the grassroots, from national level, then provincial level, district level and further down to the ordinary citizen. Awareness seems to be one of the most cost effective ways to mitigate climate change in poor countries.

This section of the thesis will look at how different countries have responded to climate change. The selection of these countries has been done in a balanced way which will look at both developed and less developed countries (those with resources and those with constrained resources). The comparison will also focus on countries from different continents in order to understand the global nature of this problem.

3.1 COUNTRY RESPONSES

Countries around the world have been tackling climate change issues based on recommendations made by international agreement and conventions. Country responses to climate change have considered country-specific national plans and strategies. From the recommendations given, generally, countries are being requested to use renewable energy, promote energy efficiency, and restore the forests. Dealing with the problem of climate change cannot be achieved by a single country. Full commitment from the international community is required for the engagement in the alternative practices that reduce the impacts of climate change.

Resource constrained countries have major economic challenges and can hardly sustain themselves because most of them lag behind in technological advancements. In addition, they heavily depend on fossil fuels for the process of production in the manufacturing industry. The issue of GHG emission takes the back seat to more pressing issues such as curbing hunger, infrastructure, provision of health and other basic services, communication and transport and unemployment.

During the process of building and stabilizing the economy and attempts to reduce poverty levels, fossil fuels are used. “Unless something changes, developing countries like India cannot fight climate change and at the same time provide for their own citizens. In fact, developing countries will only accelerate global warming as their economies grow because they cannot afford alternatives. Wealthy countries cannot afford to ignore the impact of these growing, developing countries” (Tucker, 2016).

Economic growth and development of developing countries accompanied increasing populations, income levels and the use of energy highly relies on

activities that increase the emission of GHGs. “At the present growth rates, developing country emissions are expected to surpass those of developed countries within a matter of decades. The magnitude of this future emissions growth, however, is by no means certain. This report examines measures already underway that are tempering the growth of developing country emissions, the forces that drive these measures, and the opportunities that may exist for furthering them” (Chandler, Schaeffer, Dadi and Shukla, 2002: 1).

Below are case studies of how some of the countries (both developed and developing countries) around the world are dealing with the problem of climate change. Amongst the countries to be discussed are China, United States of America, Germany, South Africa, Kenya, Brazil and India. Brazil and India which are developing countries that have currently invested in heavy industrialization in order to develop their economies will be of great interest as there is also an urgent call for Zambia to boost local industries in order to grow the economy. Looking at how these two countries responded to climate change could inform the Zambian situation.

3.1.1 China

China is known to be one of the world’s biggest emitters of GHGs due to its highly industrialised economy. Its high emission levels are based on the fact that China’s industrial growth is being facilitated by the use of coal. “China is the most populous country in the world, with a relatively low level of economic development, a coal-dominated energy mix, and relatively weak capability to address climate change. Climate change has caused and will continue to cause adverse impacts on China's natural ecosystem and socio-economic system” (Rogelj, 2011:35). China’s road to development has brought about the emergence of factories in the steel, cement and power sectors of the economy. The increasing demand for home appliances by the general population of China stimulates production of the manufactory industry, thereby contributing to increased GHG emissions.

Although China has made efforts to reduce the use of coal and embrace cleaner forms of energy in order to adhere to recommendations of climate change bodies, coal remains a big part of the energy being used. “China has been trying

to shift away from these smokestack industries and to cleaner energy, and coal demand has cooled since 2012. But coal still provides about two-thirds of China's total energy needs. And each unit of energy from burning coal creates more carbon dioxide than oil or gas" (Buckley, 2017: 1).

Addressing issues of climate change is a priority to China and this can be seen in how solutions to climate change are part of the national strategies for social and economic development. At the recent COP in Paris, China committed to enhancing its actions on climate change.

China has developed a policy similar to Zambia's NPCC called the China's National Climate Change Programme (CNCCP). This is China's national document that outlines mitigation and adaptation measures for climate change. One of the objectives of this document is to raise awareness by the wide dissemination of knowledge related to climate change, such as climate protection, and to strengthen institutions and mechanisms that address climate change issues. The prioritization of awareness on climate change-related issues echoes the importance of awareness in a country's response to deal with climate change.

3.1.2 United States of America (USA)

The USA is said to be the second to China with regard to emission of GHGs after China. The United States Environmental Protection Agency (EPA) has stated that the following are the main sources of GHGs emissions in the United States:

- i. Electricity production.
- ii. Transportation.
- iii. Industry.
- iv. Commercial and residential purposes.
- v. Agriculture.
- vi. Land use and forestry.

GHGs emission in the USA has varied over the years. "In the United States, CO₂ emissions decreased in 2015 by 2.6%, to 5.2 billion tonnes, following previous increases of 1.8% and 1.1% in 2013 and 2014, respectively. The 2015

emission level was similar to the lowest levels reported for 2012 and 1993, over the 1993–2015 period. GDP in 2015 continued to increase by 2.4%, a similar rate as that in 2014 and even 2012” (Oliver and Ryan, 2016: 2).

In response to the international agreements referred to in the previous chapter which include the COP’s held over the years, the USA committed to the reduction in the emission of carbon dioxide. This commitment was made at the Copenhagen climate change Summit in December, 2009. The use of clean energy has also been prioritized for some time now with evidence being the establishment of the United States EPA which handles issues concerning the protection of the environment. However, recent news in the United States indicates that the country is withdrawing from the Paris Climate Accord echoing the sentiments of the current President, Mr. Donald Trump’s belief of putting ‘America first’ because according to him, the agreement did not represent what America stood for and that he was willing to re-enter the agreement on new terms or sign another form of agreement altogether (Buckley, 2017:1). This decision has not been received well by many Americans.

3.1.3 Germany

The European Union (EU) has prioritised climate change mitigation emphasizing the reduction in emission of GHGs and advocating that other regions and nations do the same. The following are the key targets for the EU in 2020 and 2030, respectively according to the European Commission:

- i. Targets for 2020
 - Cutting 20% of greenhouse gas emission compared with 1990.
 - Total energy consumption of renewable energy of 20%.
 - Increase of energy efficiency of 20%.
- ii. Targets 2030
 - Cutting 47% of greenhouse gas emission compared with 1990.
 - Total energy consumption of renewable energy of 27%.
 - Increase of energy efficiency of 27%.

Germany which is part of the European Union has been acting collectively with the international community and is actively involved in responding to climate change. Though Germany has made strides in reducing the emission of GHGs, it still remains to be one of the largest emitters in Europe. Germany has come to the realization that environmental policies such as those regarding climate change may be too costly to implement and thus have introduced cost-effective measures to deal with climate change which involves sensitization and participation of the citizens (European Environment Agency, 2015).

3.1.4 South Africa

South Africa has responded to climate change through the National Climate Change Response White Paper. "South Africa will build the climate resilience of the country, its economy and its people and manage the transition to a climate-resilient, equitable and internationally competitive lower-carbon economy and society in a manner that simultaneously addresses South Africa's over-riding national priorities for sustainable development, job creation, improved public and environmental health, poverty eradication, and social equality" (National Climate Change Response White Paper, 2016).

This document which was guided by principles embedded in the country's constitution, the then MDGs and a response to the UNFCCC and COP's among other things, committed to stabilizing GHG concentration and also put in appropriate measures to respond to climate change.

3.1.5 Kenya

Kenya was privileged to host the Nairobi Conference of Global Warming and Climate Change in 1990 where the first climate change declaration was made. At this conference, commitments were made to put measures in place to deal with issues of climate change. Climate change studies done in Kenya revealed that this will have a negative effect on the ecological, economic and socio-physical aspects in Kenya because most of the country's livelihood and economy depends on natural resources (UN Statistics Common Database, 2006).

Kenya is collaborating with other countries and is a party to international treaties and agreements. "The whole of Africa emits only 3.6% of carbon dioxide per

year. It is also noted that Africa carries about 14% of the world's population. Kenya as a country produces less than 0.5% of carbon dioxide per year" (UN Statistics Common Database, 2006).

3.1.6 Brazil

Covering almost half of the continent, Brazil is the largest country in South America and its population is the 5th largest worldwide. Development in Brazil is being necessitated by the domestic economy where the manufacturing industry is producing goods for export purposes.

There has been an increase in use of fossil fuels due to population growth, rapid economic growth and industrialization. Rapid economic growth and industrialization in Brazil have seen an increase in GHG emissions. "Brazil's 91 million tons of energy-related carbon emissions are estimated to be 20 million to 25 million tons, or 20 percent, lower than they would be if not for measures intended primarily to reduce dependence on energy imports, diversified energy supplies, increased energy efficiency, reducing local environmental impacts, and spur social and economic development" (Chandler, Schaeffer et al, 2002: 4).

It must be noted though that Brazil like many other resource-constrained countries are not large contributors to emission of greenhouse gases. Similar to the Zambian situation, deforestation in the Amazon of Brazil has had a negative impact on climate change.

The Intended Nationally Determined Contribution (INDC) was submitted as a climate plan for the country which focuses on the reduction of emission of GHGs. Most of Brazil's policies and strategies of dealing with climate change are based on components of the INDC and the use of clean energy. The following has been observed:

- i. The promotion of the use of use of clean sources of energy such as ethanol.
- ii. In 2000, there was a call for the promotion of conservation and efficiency in the transportation and electricity sectors.
- iii. The use or renewable energy in different sectors of the economy.

- iv. Working with other developing countries on controlling and monitoring the use of forests to deal with deforestation.

The observations made by the INDC are centred on the reduction of GHG emissions as prescribed by the international bodies to deal with the problem of climate change.

Raising public awareness on climate change in Brazil has become a significant aspect of solutions to deal with the problem. There are a number of projects in Brazil that are raising awareness on climate change. Projects such as the 'Inhotim' Global Change that is located in the large savanna areas of Brazil has been central in raising climate change awareness and creating awareness of similar related issues (IDB, 2015). Economic activities such as agriculture and production of charcoal have led to loss of vast areas of land in the savanna which has made the areas susceptible to the negative effects of climate change.

The Ministries responsible for Science, Technology and Innovation and Agriculture, Livestock and Supply have come together to develop effective public policies that emphasise the importance of public awareness in environmental issues to promote sustainable development (IDB, 2015).

3.1.7 India

India is another developing country with a fast growing economy similar to that of Brazil, and is striving to enhance economic growth and improving the lives of its citizens. Through its rapid industrialization process, emission of GHGs has increased. "India's carbon emissions have increased by 63 percent over the last decade, despite the decline in carbon intensity later in the decade. This emissions increase results primarily from energy use associated with economic development and a heavy dependence on coal. Methane, originating primarily from rice paddies and ruminant cattle, contributed one-third of India's total GHG emissions, although its share decreased rapidly with the rise in energy-related carbon emissions" (Chandler, Schaeffer et al, 2002:22).

With regard to policy, India has adopted the National Action Plan on Climate Change (NAPCC) which includes awareness and dissemination of information of the threats of climate change and to find a solution to these threats.

India's rapid, growing economy has embarked on an education and outreach programme for targeting the rural poor in an effort to raise awareness on climate change. A large percentage of the poor in India use firewood and dung as a source of energy which produces GHGs through the smoke that is released. Through educating this large group of people on how negative this practice is, positive changes have been made. This section of the population has been taught and encouraged to use cleaner sources of energy such as biogas that powers clean burning methane stoves, the use of solar energy and the use of climate-smart farming techniques. Climate change awareness is embedded in activities that bring about economic development to ensure result-orientated climate change adaptation and mitigation.

3.2 CHAPTER CONCLUSION

In concluding this chapter that has looked at how different countries have responded to climate change. It is seen that awareness creation often plays an important role in addressing the problem of climate change.

It has been indicated that there is a challenge especially for those countries that are highly industrialized such as China to reduce the emission of GHGs as these activities are the ones that drive the economy. Countries such as the USA that are not constrained with resources have the ability to develop and innovate clean sources of energy, but currently have leadership that is not willing to commit to the global joint effort of dealing with climate change. This attitude has not been well received by the rest of the world.

Germany which is one of the largest emitters of GHGs in the European Union has made strides in reducing emissions as prescribed in the global conventions and it has also emphasized the importance of environmental policies such as those governing climate change and have noted that these may come at a high cost. It thus becomes cost effective to use measures of public awareness in order to make meaningful positive developments in the fight against climate change because this information is able to trickle down to all citizens. What is

key is to ensure that information on climate change is made accessible through continuous public campaigns and education.

Brazil and India which are currently undergoing massive industrialization have adopted national policies for climate change adaptation and mitigation which have introduced measures aimed at reducing emissions and promoting the use of clean energy. Public awareness and education have also been prioritized in these national policies.

In order for a resource-constrained country to develop a climate change policy, the following essential elements are required:

- i. Clear and precise knowledge on what climate change is; that is, how it came about, its causes, how the causes have manifested over the years, strategies, adaptation and mitigation aspects.
- ii. Nationalizing international solutions to climate change, fitting them into the country-specific context to ensure that they represent the needs of that country.
- iii. Well-crafted identification of climate change as a socio-economic problem.
- iv. Narrowing down of the climate change problem to be more specific for policy formulation.
- v. Clearly defined policy goals and objectives.
- vi. Using an appropriate policy design that speaks specifically to the problem.
- vii. Government commitment and political-will through the use of government instruments that put the climate change policies into action.
- viii. The promotion of participatory and integrated approach in formulating climate change policies.
- ix. Stakeholder engagement at all levels of public policy formulation.
- x. The use of skilled human resources.
- xi. Collaboration with the international community.
- xii. Use of cost-effective methods to combat climate change.

It can thus be concluded that countries around the world have some measure of awareness and are educated to a degree on climate change issues. As a

cost effective strategy to combat climate change, that is also critical for success through combined citizen action.

The next chapter will focus on the degree to which the NPCC are successful in creating climate change awareness.

CHAPTER 4: CLIMATE CHANGE IN ZAMBIA

4.0 INTRODUCTION

Chapter four will first briefly provide some background information on Zambia to familiarise readers with the country. The chapter will focus on the NPCC and its development process, some of which has already been alluded to in chapter one. It will also look at previous policies and strategies that have been developed and implemented prior to the NPCC. As the NPCC is reviewed, a number of aspects will be looked at and emphasis will be put on the awareness component of the policy.

4.1 BRIEF FACT FILE ON ZAMBIA

Zambia is a beautiful land-locked country situated in the Southern part of Africa sharing borders with Zimbabwe, Botswana, Angola, Democratic Republic of Congo, Namibia, Tanzania, Mozambique and Malawi. Information obtained from the Central Statistical Office reveals the Zambia's estimated population stands at 17.86 million with over half of the population living in poverty. "Poverty is widespread, 64 per cent of the total population lives below the poverty line, rising to 80 per cent in rural areas, meaning they do not have adequate income to meet their basic food requirements. Such poverty automatically implies deprivation for children," (UNICEF, 2018) It is these high poverty levels which have made the mitigation of climate change in Zambia very challenging as priority is given to the fight against poverty and the provision of basic services.

The country is endowed with natural resources and environmental assets and is covered with vast forests and water bodies such as the Zambezi River and the mighty Victoria Falls teeming with wildlife which are a major tourist attraction. Lusaka is the capital city of Zambia and the country has ten (10) provinces with seventy-two tribes. Mining, tourism and agriculture are the main economic activities in Zambia with most of the rural poor being involved in agriculture activities.

Generally, Zambia has a pleasant climate with three main seasons:

- i. May – August which is cool and dry.
- ii. September – October which is hot and dry.
- iii. December – April which is warm and hot.

4.2 CLIMATE CHANGE AS A PROBLEM IN ZAMBIA

Zambia that has enjoyed favourable weather patterns in the past has now experienced an erratic change in the weather patterns due to global warming which is evident from incidences such as heavy rains, floods, droughts and extreme heat. The current weather pattern in the country is actually very difficult to determine and the weather forecasting may not always be accurate. There seems to be a prolonged hot and dry season whilst the cold season has shortened with temperatures not as low as was before. The rainy season is also very short with limited amounts of rainfall being recorded. Rainy seasons have also been characterised by heavy rains in some areas causing floods. This haphazard type of weather pattern has had a negative impact on people's livelihoods and sectors of the economy. Impacts include food shortages and destruction to human lives and wildlife.

4.2.1 Deforestation in Zambia

Deforestation and its prevalence in Zambia has been highlighted in the introductory chapters above. Forests are one of the most important natural resources of Zambia and they play vital roles in people's livelihoods as major sources of timber, traditional medicine, wood fuel, food, and building materials. They are also a key factor in the conservation of soil and water and are important for other landscape factors. Arable fertile land has been compromised due to deforestation.

Charcoal burning and deforestation are two sides of the same coin because trees are cut to make charcoal that is sold to sustain livelihoods and as a source of energy. This has left areas that were once thriving forests bare. "Zambia is regarded as one of the highly forested countries whose forests cover accounts for about 60% of the total land area estimated at 64 million hectares. The total area of indigenous forest in Zambia is estimated at 44.6 million hectares, covering 60% of the total land area" (Phiri, 2013)

4.3 CLIMATE CHANGE POLICIES AND STRATEGIES PRIOR TO THE NPCC

Before the NPCC was developed, a number of isolated policies and strategies were already being implemented. However, there seemed to be a lack of

coherency between these policies and strategies making it difficult for government and the citizens to follow and remain committed to the laid down objectives of these documents. There seems to be an alarming culture of failure to implement well-developed policies in Zambia. This is evident in a number of policies and strategies that have been developed across different sectors of the economy. Failure to implement or actualize policies is due to the following reasons:

- Lack of commitment from government and stakeholders.
- Poor implementation plans.
- Costs associated with both policy development and implementation.
- Corruption and theft of funds meant for developing and implementing policies.
- Lack of access to comprehensive information due to poor planning.
- Lack of policy/strategy awareness by those affected and the nation as a whole.

Prior to the NPCC, the following policies and strategies were developed and have been implemented:

4.3.1 National Adaptation Plan of Action (NAPA) Zambia

The NAPA is a plan of action that was devised by developing countries and submitted to the UNFCCC regarding the urgent and immediate action to mitigate climate change. NAPA is a country specific plan that uses existing information of that particular country to deal with priority areas which have been identified in climate change assessments. These country-specific priority areas are identified by NAPA at the UNFCCC who have maintained a data base with this information. A special fund called the Least Developed Country Fund (LDCF) was established for the purpose of financing selected projects under NAPA.

Though the key or priority sectors for NAPA were identified, there were a number of factors that hampered the implementation of these activities which include the following:

- i. Lack of financial resources.

- ii. The NPCC was not in existence then so there was a lack of a specific, legal and clear policy framework in the country.
- iii. Poor individual capacity and institutional systems to deal with climate change.
- iv. Inadequate public awareness on climate change and its impact on the economy, livelihood, and the ecosystem.
- v. Lack of an integrated approach in dealing with issues of climate change.
- vi. Inadequate monitoring and evaluation systems to obtain relevant climate change data.
- vii. Inadequate human resource expertise and limited understanding of the impact of climate change, strategies and mitigation.

The NAPA was seen as Zambia's road map to deal with climate change issues though it could not achieve its goal due to mostly financial constraints to carry out projects in the identified areas. The document developed for NAPA in Zambia looked only at the urgent priority areas though other sectors are in need of assistance and expertise concerning climate change issues.

4.3.2 Nationally Appropriate Mitigation Actions (NAMAs)

The NAMAs were agreed upon at the United Nations Climate Change Conference in Copenhagen (COP 15) in December 2009. These too are country specific policies and actions where countries were to make commitments to reduce the emissions of GHGs. In addition, developing countries were supposed to provide financial assistance to developing for this purpose.

The Low Emission Capacity Building (LECB) programme was initiated globally in 2011 to be implemented in twenty-four (24) countries, Zambia included in order to achieve the NAMAs objective of reducing GHG emissions.

4.3.3 Nationally Determines Contributions (NDCs)

The NDCs is part of the terms under the UNFCCC which emphasizes the necessity of reducing greenhouse gas emissions. The NDC was first discussed

at COP 19 Warsaw Poland and a decision was made at the Lima Call for Climate Action (COP 20 Lima Peru).

The NDC incorporated components of both adaptation and mitigating aspects of climate change and Zambia submitted these in September, 2015 in the context of contributing to a low carbon and climate resilient economy. Priority sectors similar to those in NAPA were identified and these would be monitored and evaluated with a view to adaptation and mitigation of climate change.

4.3.4 National Forestry Policy 2009

The policy was developed in October 2009 by the Ministry of Lands, Natural Resources and Environmental Protection in order to enhance environmental sustainability by maintaining and managing forests and addressing challenges in this area which include climate change.

Before the policy was developed, forests were mismanaged and in the process the ecosystem disturbed. Ecosystems are a vital component of maintaining the environment. When human activities disturb ecosystems, it leads to increased global warming (Polyzos and Minetos, 2012: 123).

4.3.5 National Strategy for Reducing Emissions from Deforestation and Forest Degradation

This national strategy developed by the Ministry of Lands and Natural Resources was aimed at dealing with deforestation. It was recognised that degradation of forests was the main source of carbon emissions and there was a need for a better way to manage of forests (Matakala et al, 2015).

Other responses to climate change Zambia has embarked on include the following:

- i. The implementation of climate smart agriculture.
- ii. The use of renewable energy and energy efficiency.
- iii. Promoting sustainable management of forests and enhancement of the carbon sinks.
- iv. Climate proofing of infrastructure, such as roads and canal.
- v. Integrating education for sustainable, environmental education and climate change in the national school curriculum.

- vi. Strengthening of the early warning systems.
- vii. The Health National Adaptation Plan.

4.4 THE CONTENT AND OBJECTIVES OF THE NPCC

The development of the NPCC came about as a result of Zambia recognizing how negatively climate change has affected people and the economy at large. It is a coordinated and well-structured national strategy to tackle climate change in Zambia. The NPCC has provided a clear path on how to deal with climate change in the country by the avoidance of duplication of efforts from sectors to a more integrated way of finding a solution to climate change. It has been a progressive development for the country to have a national strategy which is well structured to respond to climate change to enhance its mitigation and adaptation.

The policy which is spear-headed by the Ministry of Lands and Natural Resources re-aligns the responses to climate change to the climate change sensitive sectors of the economy.

The objectives of the NPCC as per policy document are as follows:

- i. Implementation of adaptation and risk reduction measures.
- ii. Implementation of sustainable land use management practices.
- iii. Mainstreaming of climate change into policies, plans and strategies.
- iv. Enhance institutional human resource capacity.
- v. Communication and dissemination of climate change information.
- vi. Investments in climate resilient and low carbon development pathways.
- vii. Research and development.
- viii. Inclusion of gender equality in the management of climate change programmes.
- ix. Appropriate technologies to build national capacity to benefit from climate change technological transfer (Ministry of National Development Planning, 2015).

In order to ensure sustainability, the policy has been mainstreamed in the Ministry responsible for National Development Planning and this is meant to strengthen coordination and collaboration with line government ministries and departments who have a role to play in the mitigation and adaptation of climate

change. Mainstreaming of the policy has also improved coherency between national developmental plans and other programmes concerning climate change.

The NPCC during its process of development was guided by the following principles:

- i. Responding to climate change in a sustainable manner.
- ii. Compliancy with international obligations.
- iii. Ensuring that development efforts contribute to building resilience to climate change.
- iv. Enhancing collectivity and inclusiveness when responding to climate change.
- v. Creating an integrated, multi-stakeholder and consultative approach with vulnerable groups being a priority.
- vi. Ensuring the integrity of the ecosystem and its vital role in climate change mitigation.
- vii. Taking into account the complementary nature of climate change adaptation, disaster risk reduction and mitigation.

The development of the NPCC was facilitated by the Ministry of Lands, Natural Resources and Environmental Protection, the Ministry of National Development Planning, the Ministry of Finance, the Disaster Management and Mitigation Unit and a newly created Climate Change Department which was established under the Ministry of Lands, Natural Resources and Environmental Protection to oversee climate change issues and coordination purposes. According to the NPCC document, the following stakeholders are to be involved in the implementation process of the policy:

- i. Civil society organizations.
- ii. Local authorities.
- iii. Local communities and traditional leaders.
- iv. Media houses.
- v. The private sector.
- vi. Other line Ministries and relevant statutory bodies.

- vii. Cooperating Partners.
- viii. Academia.

It can thus be said that all relevant stakeholders were involved in the development of the NPCC as its development included in a broad consultative process of a cross section of stakeholders across the country.

4.4.1 Raising community awareness on climate change as prescribed by the NPCC

With regard to awareness, the NPCC states that it strives “to promote communication and dissemination of climate change information to enhance awareness and understanding of its opportunities and impacts” (MLNREP, 2016:15). The measures to achieve this objective have been highlighted in the NPCC as follows:

- i. Facilitate climate change advocacy, communication and awareness.
- ii. Strengthening education, public awareness and training on climate change.
- iii. The development and implementation of information generation and sharing mechanisms for climate change.
- iv. The promotion and involvement of local authorities including traditional leaders in climate change public awareness.
- v. Promote the dissemination of research findings.

Public awareness is therefore significant in ensuring the successful implementation of this policy. Reaching the grassroots with climate change information requires the active participation of traditional leaders who are highly respected in rural areas. They have the authority to ensure that this information reaches their subjects.

4.4.2 The process of stakeholder engagement in the development of the NPCC

The formulation of government policies involves a highly consultative process where relevant stakeholders are identified and taken on board during the development of the policy. Stakeholders for the development and the implementation of the NPCC are as listed in section 4.4 of this chapter.

These stakeholders were engaged in the development of the NPCC and played a role in formulating the contents of the policy. The same stakeholders are involved in the implementation of the policy.

Consultative meetings and focus group discussions were held in district and provincial centres countrywide to disseminate information of the policy. These were held from the period 2014 to 2015 with various stakeholders that included traditional leaders and other high ranking individuals in the traditional structures, staff from the local authorities, provincial and district administrative staff, representatives of civil society organisations and church leaders.

These meetings were usually town hall in nature where contents of the NPCC were widely discussed and open to amendments once submissions were made. It was encouraged for stakeholders to participate in both the development and implementation of the policy.

Traditional leaders and local communities were especially significant in this process because of their ability to reach the grassroots. It should be noted though that not all those invited would attend to these meetings which would still go on as scheduled as programmes would have already been made.

4.5 CHAPTER CONCLUSION

This chapter has explained in detail the development of a response to climate change mitigation in Zambia. It firstly gave a brief profile about Zambia and provided a detailed overview of prior policies, strategies and laws that impact on climate change. After highlighting the development of the NPCC, prior strategies and policies that were formulated before the advent of the NPCC were discussed. The issue of deforestation in Zambia was also explained in this chapter because it is one of the main causes of climate change in Zambia; thus the importance of having an understanding of this is essential.

Lastly, the section of the NPCC that talks about awareness was reviewed and it emphasises the promotion of communication, dissemination, awareness and understanding of climate change information. It stresses the importance of

developing and implementing information sharing mechanisms and platforms to strengthen climate change education, public awareness and training. The involvement of traditional leaders and the local authorities in climate change public awareness has also been noted.

To be presented in the next chapter is the research design and methodology that will be used to assess climate change awareness among relevant stakeholder.

CHAPTER 5: RESEARCH DESIGN AND METHODOLOGY

5.0 INTRODUCTION

Chapter five gives a detailed description on the research design and methods that will be used to obtain data for this study. This study aimed to assess the extent to which awareness on climate change was prioritized in the development of the NPCC and how aware the relevant stakeholders are of climate change and the existence of the policy which is a critical requirement for wide-spread implementation of the climate prevention strategies contained in the policy.

Communication and public awareness strategies which are part of the NPCC. It supports the premise of this study that awareness is an important tool to deal with the issue of climate change and most relevant for resources-constrained countries such as Zambia. The objectives of this research have been clearly stated in chapter 1, and this chapter focuses specifically on research objective four, namely “to assess whether citizens are aware of the causes and consequences of climate change, as well as the NPCC that aims to combat climate change in Zambia.” This chapter will focus on the following questions:

- i. How much priority was given to the awareness in the design of the NPCC?
- ii. What the current levels of climate change awareness amongst the rural population are?
- iii. What are awareness of the NPCC under community leaders that should facilitate the awareness within their communities?
- iv. How can the aims of the NPCC be maximised to ensure the communities change destructive behaviour that may be contributing to climate change?

The research is qualitative in nature will involve the participation of 20 respondents in four provincial centres namely, Lusaka, Copperbelt, Southern and Eastern Province. Non-probability sampling method will be used to identify five participants per province to participate in the study. Participants will be selected from existing community leaders who represent larger groups of people in the community, such as ward councillors, traditional leaders, community leaders and church leaders.

Two software packages will be used for data analysis and these are the Statistical Package for the Social Sciences (SPSS) and Atlas-ti. It was necessary to use two software packages for data analysis because both will add to the quality of the findings. SPSS for instance analyses results with quantitative data in the questionnaire and these will be illustrated in table form and/or pie charts. Atlas-ti will on the other hand create graphical views and analyses texts. The data collected and the results will be presented and interpreted in the subsequent chapter 6.

5.1 RESEARCH DESIGN

In terms of the NPCC objective of raising community awareness, the key focus of this implementation evaluation is to determine whether the policy's approach to raising awareness shows early evidence of success. To achieve this, the empirical research will test both participant's awareness of climate change causes and effects, as well as awareness of the NPCC. The rationale is that given that there are so many prior and simultaneous initiatives aimed at raising awareness, the awareness of climate change in participations may not necessarily be attributable to the NPCC, but to a prior initiative. Therefore, the questionnaire will specifically test awareness of the NPCC, as early evidence of the degree to which the NPCC may be contributing to awareness of climate change and possible climate change mitigation strategies. If participants are aware of the NPCC, the policy may in part be responsible for raising awareness, but if participants are not aware of the NPCC, awareness of climate change can most probably not be attributed to this policy.

This study is crucial and relevant as the policy is the main climate change mitigation policy of the Zambian government and the public need to participate in its implementation to contribute to its success.

5.2 METHODOLOGY

The use of non – probability sampling will be adopted to draw a sample frame from various stakeholders targeted to be sensitized about the NPCC in provincial centres alluded to above. The five participants per province that will be identified represent a specific group people such as the church, chiefdoms, wards and members of the community. The sample will not be representative,

but will serve to assess whether awareness campaigns have reached community leaders, and whether it has increased awareness and understanding of climate change.

Data collection methods will include the following:

- i. Structured and semi-structured interviews.
- ii. Individual interviews.
- iii. Use of documentation (secondary data).

The questionnaire will include a combination of structured and semi-structured questions. Individual questions will also be used as well as secondary data which will be obtained from various stakeholders which will include relevant government institutions and departments.

5.2.1 Target population

The provinces mentioned above are 4 of the 10 provinces in Zambia. The 4 provinces represent either the north, south, east, west or central part of the country. The north has been represented by Copperbelt province while the south and west part of the country is represented by Southern Province. Lusaka Province represents the central part of the country and the Eastern Province represents the east part of the country. While the remaining provinces (Central, Western, North Western, Muchinga and Luapula Provinces) were excluded from the study, these provinces are close to one or more of the selected provinces and therefore may have similar responses to the awareness campaigns, although this is not explicitly tested in this study. Five participants from each of the selected four provinces were included in the study based on stakeholder representation of targeted community leaders, including ward councillors, traditional leaders, community leaders and church leaders within that province. Some participants were approached in person by the researcher while others participated via mobile phone communication. All participants invited to participate in the research responded to the invitation, with those unable to respond timely suggested an alternative community leader representative to participate in the data collection phase of the research in their stead.

5.2.2 The questionnaire

The main data collection tool to be used in this study is a questionnaire. The six-page document, which can be found in annex 1, has twenty simple questions which are both closed and open-ended. While some questions only require one option to be collected, others need a brief explanation. Apart from the first two questions requesting for the gender and occupation of the respondent, the other questions are all related to climate change and cover the following themes:

- i. Definition of climate change.
- ii. Causes of climate change.
- iii. Effects of climate change.
- iv. Awareness of the NPCC.
- v. Implementation of the NPCC and other climate change programmes.
- vi. Mitigation of climate change.

5.2.3 Software packages for data analysis

As briefly highlighted above, the statistical techniques to be used in this study are SPSS and Atlas-ti. These will be used to analyse the data collected and the results obtained will be presented and interpreted to support this research.

SPSS: will be used to analyse the responses obtained that are quantitative in nature.

Atlas-ti: will be used to code and analyse narrative responses to the questions.

5.3 ETHICAL CONSIDERATIONS

The research is guided by the Stellenbosch policy on ethical research and formally approved by the ethics committee. The identity of all participants will remain confidential. Participants and organizations will not be identified in the final research report. The researcher will not request the name or any other personal information of the participants. Information shared by participants during this study will be protected. The data collected and data entry will be done on the researcher's personal laptop that can only be accessed by the researcher.

All questionnaires will only be handled by the researcher and used questionnaires will be shredded once the study has been finalized.

5.4 CHAPTER CONCLUSION

This chapter has detailed the research design and methodology. The study which is qualitative in nature, will gather its data from 4 of the 10 provinces of Zambia. The four provinces selected to be part of the study represent the major regions in the country and are a good sample frame. The sample frame has been selected with a lot of thought by the researcher who is confident that it will yield accurate results that will contribute positively to the finding of the study.

Non – probability sampling method will be used and data collected will be analysed using SPSS and Atlas-ti and will be presented and interpreted in the next chapter. Highlighted in this chapter is how the data tools will be managed and stored with emphasis on the confidentiality and protection of the participants.

CHAPTER 6: PRESENTATION AND INTERPRETATION OF FINDINGS

6.0 INTRODUCTION

Chapter 6 of this report will give a presentation and interpretation of the findings of the research based on the responses given by the participants in the questionnaire. As already detailed in chapter 5, twenty questionnaires were used, five each distributed to four provinces in Zambia which are Lusaka, Southern, Eastern and Copperbelt.

Two software packages were used to analyze the data collected and these include SPSS and Atlas-ti.

6.1 RESULTS

The presentation and interpretation of results will be done according to the relevant themes they belong to. The results were analyzed using two different types of software and hence will be illustrated differently. Details of what is expected in each of the themes will be explained.

6.1.1 Demographic details of respondents

This theme represents the demographic details of the respondents that were obtained and they include the gender and occupation of the respondents.

6.1.1.1 Gender

Gender			
		Frequency	Percent
Valid	Male	11	55.0
	Female	9	45.0
	Total	20	100.0

Table 6. 1: Gender of the respondents

The distribution of the responses on the respondent's gender is illustrated in the table 6.1 above. The table illustrates that out of the total number of 20 respondents, 11 were male constituting 55% of the total sample size and 9 were female constituting 45% of the total sample size. This shows that there was a fair gender representation in the respondents. Below in figure 6.1 is an illustration of the percentage of the gender distribution.

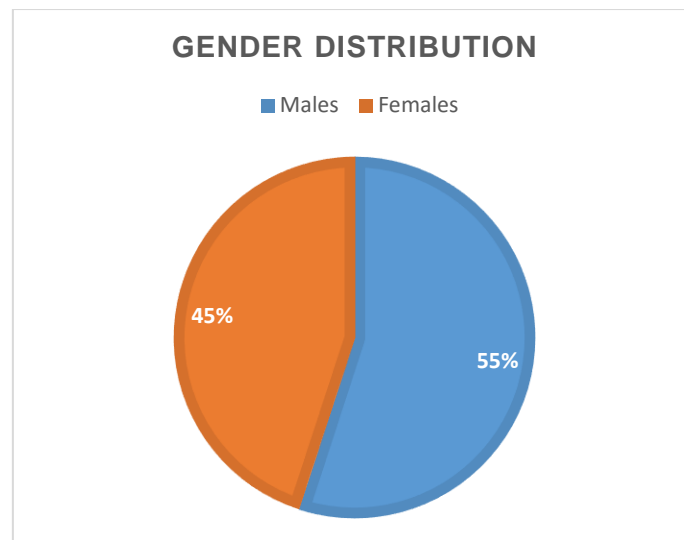


Figure 6. 1: Gender distribution

6.1.1.2 Current occupation

Current occupation			
		Frequency	Percent
Valid	Government Ministry or Department	4	20.0
	Private Sector	5	25.0
	Informal sector	3	15.0
	Other	6	30.0
	Total	18	90.0
Missing	System	2	10.0
Total		20	100.0

Table 6. 2: Occupation of respondents

Table 6.2 represents the current occupation of the respondents while the same information has been illustrated in percentage form in figure 6.2. Of the 20 respondents, 4 worked in a government ministry or department; 5 in the private sector and 3 in the informal sector. Six answered other and 2 did not answer.

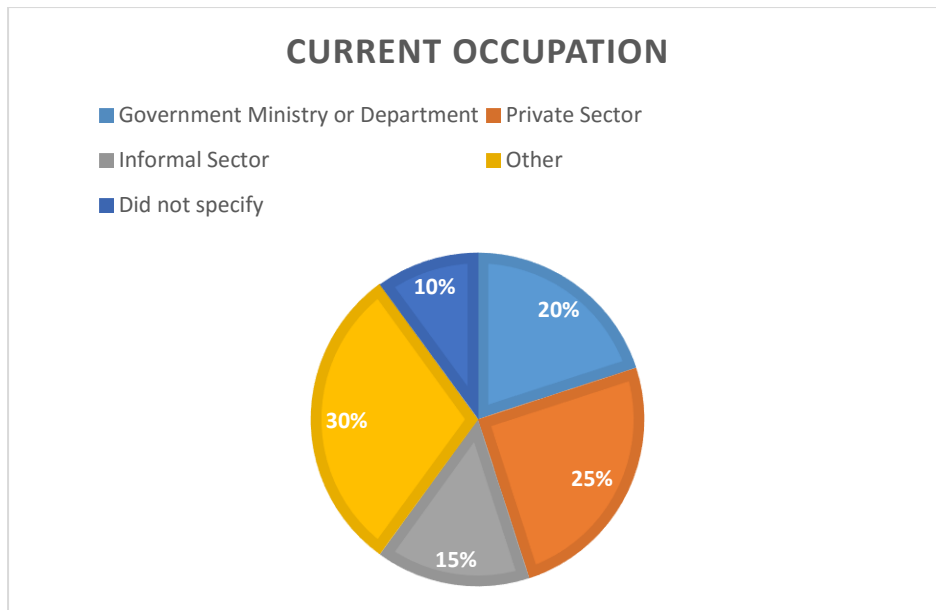


Figure 6. 2: Graphical illustration of occupation of respondents

6.1.2 Information and knowledge on climate change

Information and knowledge on climate change provides details on how much the respondents know about climate change, such as how they define it and what the causes of climate change are. This information is important to this study because it indeed indicates that there is inadequate knowledge of climate change among the citizenry in Zambia. The questions asked under this theme include the following:

- i. How knowledgeable are you with regard to information on climate change?
- ii. Are you aware that climate change is caused by human activities?
- iii. What are the effects of climate change?
- iv. Do you know what greenhouse gases are?
- v. Have you been affected by the impacts of climate change in any way?

6.1.2.1 Knowledge of greenhouse gases

Knowledge of greenhouse gases			
		Frequency	Percent
Valid	Yes	16	80.0
	No	4	20.0
	Total	20	100.0

Table 6. 3: Knowledge of greenhouse gases

Table 6.3 illustrates that there was some knowledge of GHGs by the respondents. 16 (80%) have some knowledge on what GHGs are while 4 (20%) had no idea what GHGs were.

6.1.2.2 Awareness of human activities causing climate change

Aware of human activities causing climate change			
		Frequency	Percent
Valid	Yes	19	95.0
	No	1	5.0
	Total	20	100.0

Table 6. 4: Awareness of human activities causing climate change

The information obtained in table 6.4 indicates that 19 (95%) of the 20 respondents were aware that climate change is indeed caused by human activities. Being aware that the activities they are involved in cause climate change can lead to their finding alternative forms of livelihoods that are clean and safe. Only 1 (5%) respondent was not aware that climate change is caused by human activities.

6.1.2.3 Access to information on climate change

Access to information on Climate change			
		Frequency	Percent
Valid	Yes	4	20.0
	No	16	80.0
	Total	20	100.0

Table 6. 5: Access to information on Climate change

Table 6.5 shows how many of the respondents had access to information on climate change. Four had access while 16 had no access to information on climate change.

Based on the information obtained above, it can be said that though a considerable number of respondents have some knowledge on climate change,

access to this information is not easily accessible. The narratives in the opened ended questions indicated that most if the respondents were aware the climate change was caused by human activities and they were indeed knowledgeable on what GHGs were.

Effects of climate change were experienced by many who cited similar responses such as a change in weather patterns, rising or high temperatures, droughts, floods, diseases caused by changes in weather patterns, disturbance of the wildlife and habitat and poor yields during the farming season.

The illustrations presented below, indicate the responses that were obtained when respondents were asked what activities caused climate change and what the effects of climate change were respectively. These showed basic knowledge on climate change awareness.

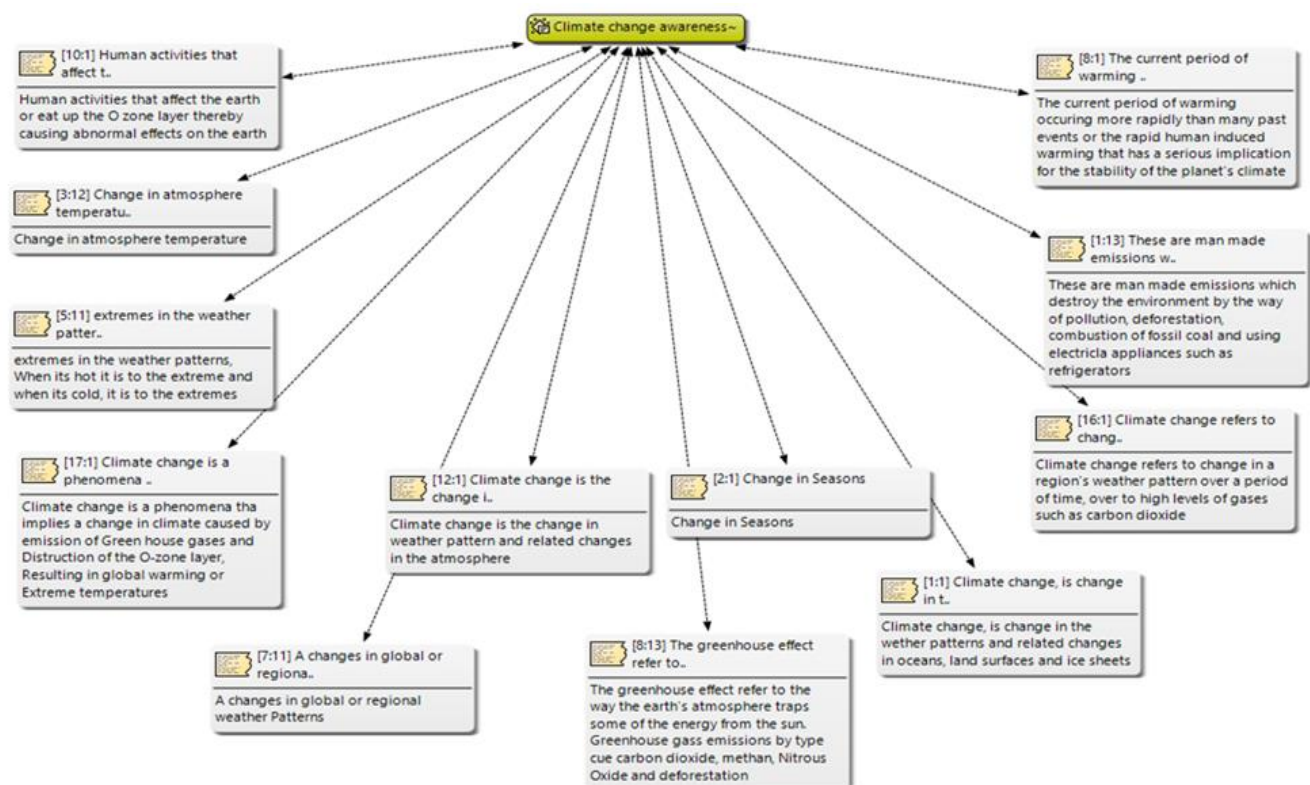


Figure 6. 3: Climate change awareness

Here, respondents indicated that they were aware about climate change and that it was characterized by changes in weather patterns. Others were able to use scientific terms such as the 'destruction of the ozone layer' and 'global warming'.

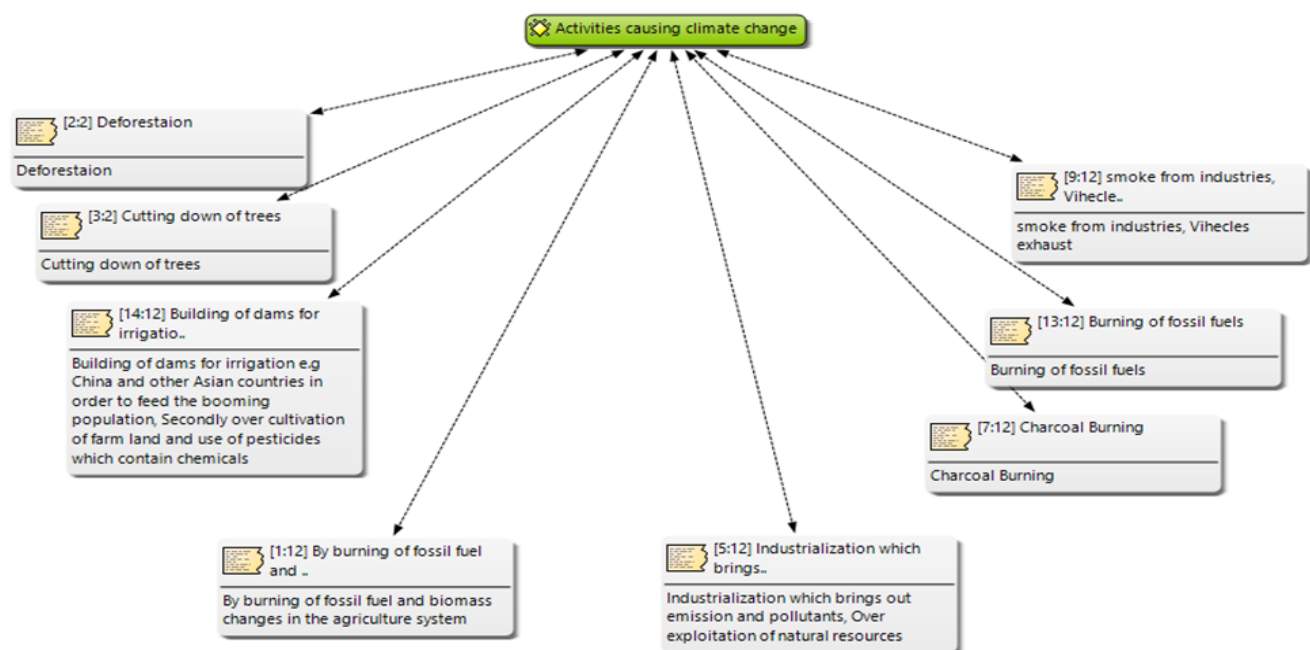


Figure 6. 4: Activities that cause climate change

In figure 6.4, respondents indicated that they were aware of the activities that caused climate change such as cutting down trees and charcoal burning.

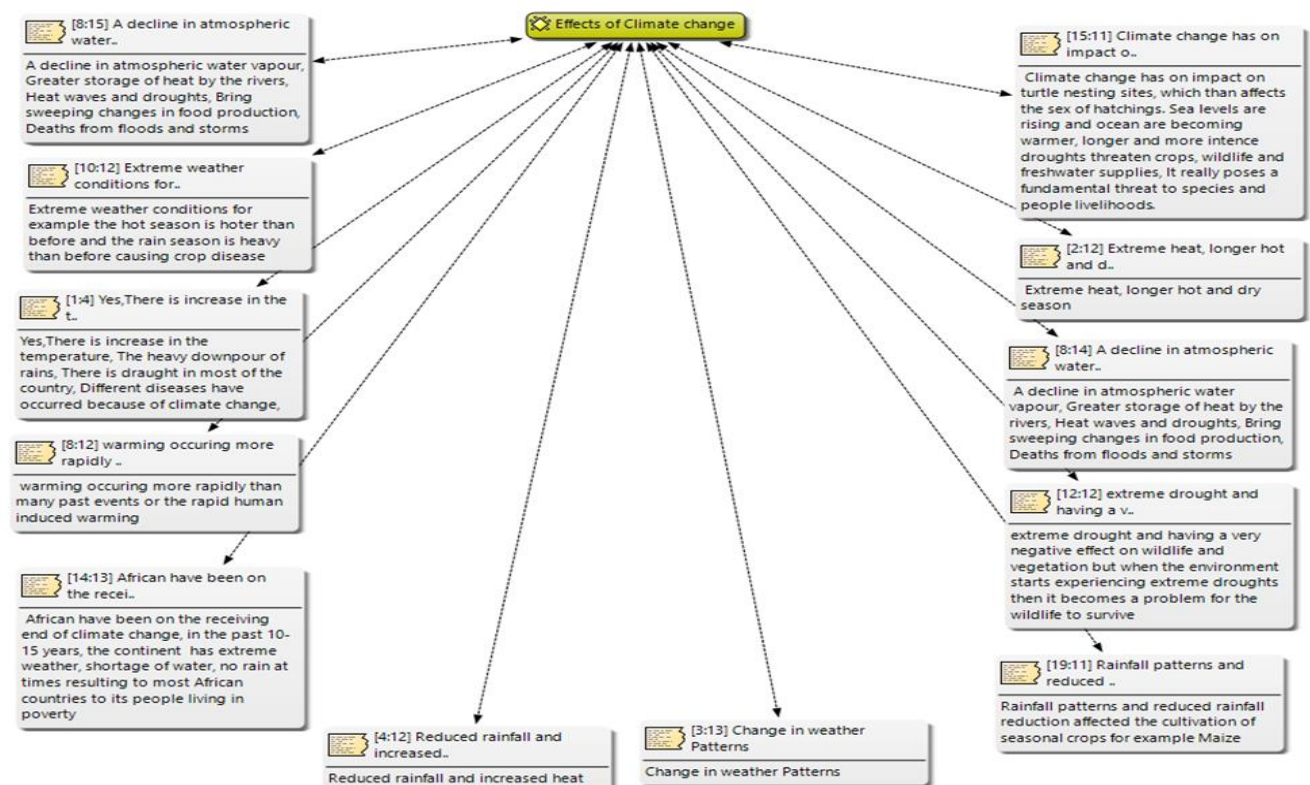


Figure 6. 5: Effects of climate change

The effects of climate change have been described in figure 6.5.

6.1.3 Involvement in climate change awareness programmes

The involvement in climate change awareness programmes is a key matter in this study that seeks to assess the awareness of the NPCC and other climate change programmes. The questions in the questionnaire that addressed this included the following:

- i. Are you aware of any government programmes, past or present, to deal with climate change?
- ii. Are you aware of the National Policy on Climate Change in Zambia?
- iii. Did you attend any sensitization workshops or programmes on the National Policy on Climate Change?
- iv. Were you involved in the validation process of the National Policy on Climate Change?
- v. How would you rate the efforts of government to involve members of the public in climate change awareness programmes?

6.1.3.1 Awareness of government programmes

Aware of government programs			
		Frequency	Percent
Valid	Yes	13	65.0
	No	7	35.0
	Total	20	100.0

Table 6. 6: Awareness of government programmes

In table 6.6 which indicates the awareness of government programmes on climate change by the respondents, 13 (65%) respondents were aware of such programmes while 7 (35%) were not aware of any programmes at all.

6.1.3.2 Attendance to sensitization workshop on the NPCC

Attended workshop on the national policy on climate change			
		Frequency	Percent
Valid	Yes	3	15.0
	No	17	85.0
	Total	20	100.0

Table 6. 7: Attendance to sensitization workshop on the NPCC

Table 6.7 indicates that only 3 (15%) of the respondents attended a workshop on the NPCC while 17 (85%) did not attend any sensitization workshop. This is an indication that the targeted stakeholders were not sensitized on the NPCC.

6.1.3.3 Involvement in the NPCC validation process

Involved in the Validation process			
		Frequency	Percent
Valid	Yes	4	20.0
	No	15	75.0
	No response	1	5.0
	Total	20	100.0

Table 6. 8: Involvement in the NPCC validation process

Similar to the information obtained in table 6.8, only 4 (20%) respondents were involved in the validation process of the NPCC while 15 (75%) were not involved. Again, that is an indication that the relevant stakeholders were not targeted.

6.1.3.4 Awareness of the NPCC

Aware of the National Policy on climate change in Zambia			
		Frequency	Percent
Valid	Yes	11	55.0
	No	9	45.0
	Total	20	100.0

Table 6. 9: Awareness of the NPCC

Table 6.9 illustrates that 11 (55%) of the respondents are aware of the NPCC while 9 (45%) were not aware.

The information given above indicates that though earlier results show that there is a general awareness of climate change, this cannot be the result of the NPCC but other sources of climate change information. The NPCC cannot achieve its aims if the general community are not aware of the policy. It also can be concluded that there is a failure in how the NPCC is being rolled out. The individuals were selected to participate in the study because the NPCC documentation indicated that they were involved in the development and implementation process. These individuals were targeted because they are community leaders who can help raise awareness of climate change and strategies in the NPCC to the broader community.

Given that the sampling frame was specifically selected based on the role of intended participants in sensitization workshops on the NPCC, the low awareness in the sample group may also indicate that the general population has a limited awareness of the NPCC, a policy document intended to present a solution to the problem of climate change. This is the document that is intended to serve as a guide to the mitigation of climate change. It outlines the vision, rationale, guiding principles, policy objectives and implementation framework towards this goal. Implementation of the NPCC began in April, 2016 and it is therefore disconcerting to find that people specifically targeted as champions of the NPCC are not aware of the policy and the content thereof.

6.1.4 Challenges in climate change mitigation

Closely related to the theme above is that of the challenges in climate change mitigation. The questions in the questionnaire that tackled this issue are as follows:

- i. What are the main limitations that government faces in managing climate change?
- ii. Do you agree that awareness on climate change issues can contribute positively to its mitigation?

Atlas-ti selected the questions that represented these responses and these are illustrated in the figure below:

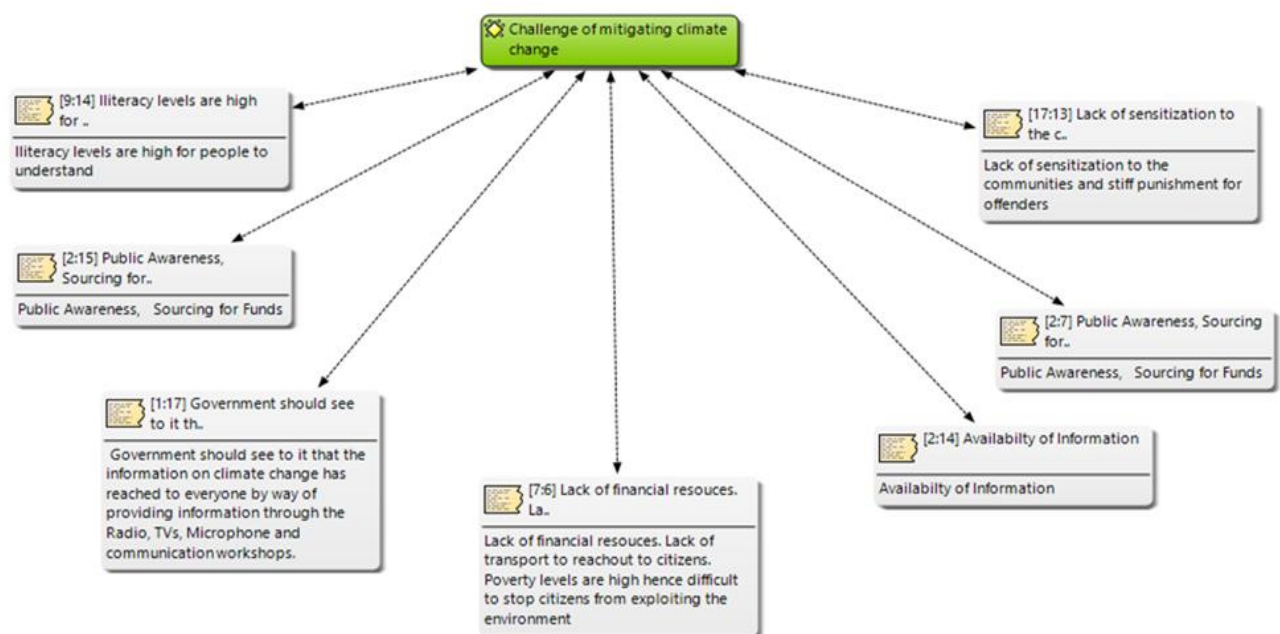


Figure 6. 6: Challenges of Climate Change Mitigation

This is yet another important theme in this study because as can be seen in the illustration above, the responses dwelled on the lack of public awareness. The responses captured included the following:

- i. High illiteracy levels inhibiting people to understand.
- ii. Lack of sensitization.
- iii. Poor availability of information.
- iv. Poor source of funding.

Educating citizens on how to refrain from polluting and destroying the environment was a measure established to mitigate climate change. This could be promoted by providing information through print and electronic media, holding of public forums such as workshops and seminars, the inclusion of climate change in the school curriculum and dissemination of information in churches and other community gatherings.

Information obtained also revealed that there was a need for trained personnel on issues of climate change to carry out sensitization and awareness programmes as this will ensure that the correct information is being disseminated.

6.1.5 Strategies to deal with climate change

Having discussed the challenges in climate change mitigation, the respondents also gave some strategies on how to deal with climate change in a question formulated as follows, 'what in your opinion, is the most important role that government could play in managing climate change?' Responses included the following:

- i. Running of awareness campaigns.
- ii. Encouraging the use of renewable energy.
- iii. Including climate change education in the school curriculum.
- iv. To put in place sensitization programmes.
- v. To establish NAPAs.
- vi. Collaboration with stakeholders the deal with the challenge of poor funding.

These responses have been highlighted in the illustration given below, which responses are all pointing to climate change implementation programmes.

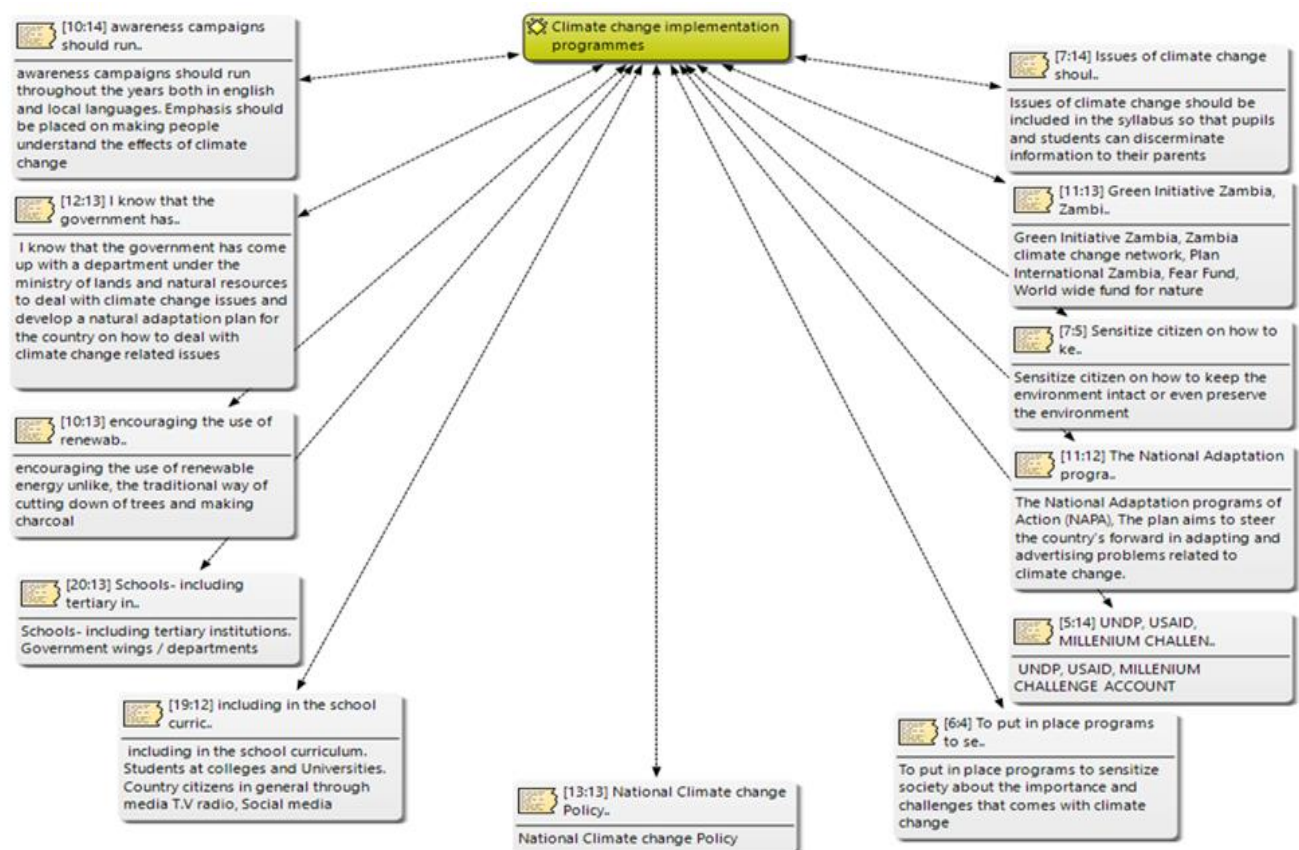


Figure 6. 7: Climate change implementation programmes

Respondents emphasized the importance of government putting in place climate change programmes. Awareness campaigns should run on a continuous basis both in English and local languages so that the effects of climate change are understood by all. Several responses focused on including issues of climate change in the school syllabus so that pupils and students can disseminate information to their parents and others in the community. The response by participants confirms the importance of awareness strategies as an important component of an integrated strategy to address climate change.

One respondent also advocated that the use of renewable energy instead of the traditional way of cutting down of trees for charcoal which is a norm, especially in Zambia's rural areas. The development of sector specific NAPAs which plan to steer the country forward in adapting and mitigating climate change were also requested for.

One respondent listed various organizations involved in climate change activities that include the Green Initiative Zambia; Zambia Climate Change Network; Plan International Zambia; Fear Fund and World Wide Fund for Nature. This confirms that changes in climate change awareness may be attributed to other initiatives, not necessarily the NPCC.

6.2 INTERRELATIONSHIP BETWEEN THE THEMES

The study as highlighted in chapter 1 has stated that, without education and awareness on climate change, it is almost impossible to have effective mitigation that can enhance sustainable development. Further, the study seeks to focus on inexpensive awareness strategies that can be used during the implementation of the NPCC. The specific objectives revolve around the priority that was given to education and awareness of climate change in the development of the NPCC, the current levels of climate change awareness and establish the relationship between climate change awareness and climate change mitigation. Figure 6.8 demonstrates the importance of awareness progress in mitigating climate change and the connection between the themes.

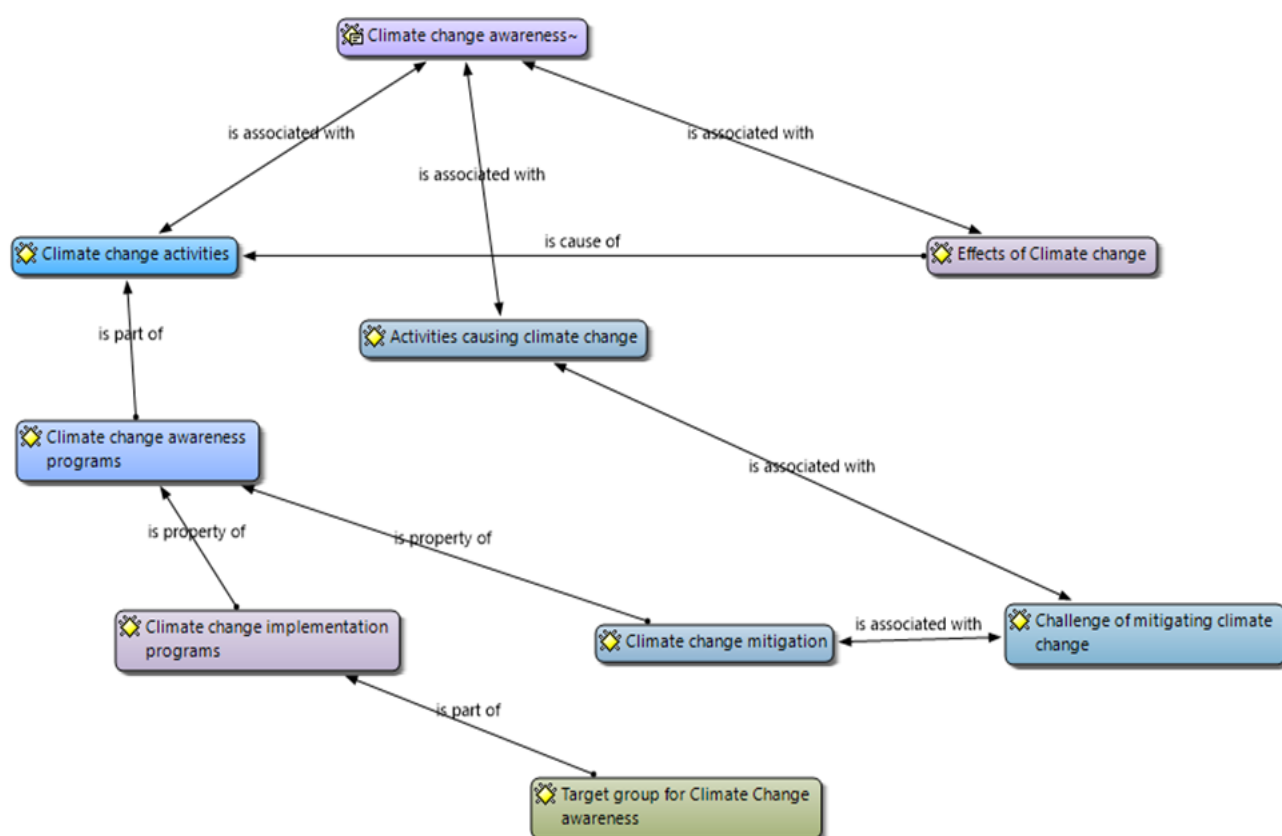


Figure 6. 8: Connection between the themes

Responses to the questionnaire reveal a lack of awareness of the content of the NPCC by those that were specifically targeted as community leaders to disseminate the information. The responses reveal that while respondents have little awareness of the NPCC policy, they do have an understanding of climate change causes and combatting strategies, obtained from initiative other than the NPCC. Given that many of the respondents were not aware of the NPCC, it raises doubts on the potential successful implementation of the policy, specifically the objectives that require engagement and buy-in from citizens.

Raising awareness about solutions to a social problem does not necessarily require spending huge sums of money. In this case, funds for the development and implementation of the NPCC had been available and this was an opportunity to sensitise people on the policy. The assumption was that once this information was assimilated by the relevant stakeholders, their responsibility was to take this knowledge and share it with other members of the community. It is therefore problematic if those who were the intended target of the awareness campaigns were not reached.

6.3 CHAPTER CONCLUSION

The presentation and interpretation of results collected from the questionnaires administered have been presented in this chapter. Twenty questionnaires were used with 5 being distributed to four provinces in Zambia targeting stakeholders in the development of the NPCC. SPSS and Atlas-ti were the software packages used to analyse the data catering for both the closed and open-ended questions. A number of illustrations have been used to interpret the data.

The general view of the information collected is that there is some knowledge of climate change and that it was mostly derived from other documents or initiatives, rather than from the NPCC. Part of the failure seems to be that the awareness campaigns for the NPCC failed to reach the targeted participants. The majority of the respondents were not aware of the NPCC.

The government needs to intensify its efforts to engage the community in the NPCC to sensitize them to climate change causes and consequences as well

as specific objectives in the policy that depend on citizen buy-in and support. The next chapter will offer recommendations in this regard.

CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.0 INTRODUCTION

The aim of this study was to assess whether community leaders in targeted provinces have been sensitized on the existence and content of the NPCC. This implementation evaluation aimed to assess whether those targeted to be sensitized on NPCC were reached and where awareness of climate change and mitigating strategies exist, whether this is a result of the NPCC. The NPCC has been developed outlining clearly the negative impacts of climate change and the government's plans to deal with this issue. Analyzing the implementation of the NPCC with specific focus on creating awareness of climate change and the content of the NPCC will give an indication as to the degree to the awareness among the citizens. The assumption with this research is that if community leaders are unaware of the policy, they cannot raise awareness of the policy and its content under citizens. If citizens are unaware of the policy, it may not meet its intended objectives and it will be ineffective in combating climate change.

The specific objectives were as follows and this is what can be concluded with regard to these objectives:

- i. **To review what the international response to climate change has been with particular focus on the major international organisations, conferences and summits.**

In an effort to combat the problem of climate change at a global level, a number of international organisations have been formed and conferences and summits held. This was discussed in detail in chapter 2.

The focus on the international conferences and summits held around the world has been on reducing the emissions of GHGs. The COPs that have been held from the year 2000 onwards, all emphasized the reduction in the emission of GHGs by specific percentages which has been usually higher for those countries that are highly industrialised such as China.

ii. To review the alternative approaches adopted by countries to mitigate climate change.

Chapter 3 which looked at country responses to climate change indicated a trend in specific national policies that highlighted the importance of education and awareness in climate change for effective and successful mitigation.

We have seen how highly industrialised countries such as China having challenges in reducing the emission of GHGs as they still rely on the use of unclean sources of energy for production in their manufacturing industries and factories. However, China has in its national policy documents on climate change committed to reducing emissions of GHGs and has also included the importance of public awareness. Countries in the EU like Germany have embraced public awareness as a cost effective tool to make meaningful strides in dealing with climate change.

Brazil and India who are at present developing economies through industrialisation are also committed to the use of clean energy to produce energy and public awareness has also been prioritised. In Brazil where deforestation is rampant and similar to the Zambian situation, citizens are being sensitised and encouraged to use cleaner sources of energy for fuel.

All in all, countries worldwide seem to speak with one voice when they prioritize the importance of public awareness of climate change in enhancing mitigation efforts. Citizens who are aware of the causes of climate change are better equipped to contribute positively to adaption and mitigation measures. The use of renewable energy is also an important aspect of making significant headways in the fight against climate change.

iii. To review the National Policy on Climate Change with particular emphasis on the content and strategies that raise citizen awareness of the causes and effects of climate change.

The government of the Republic of Zambia through the Ministry of Lands, Natural Resources and the Environmental Protection launched the NPCC in April, 2016 to coordinate the response to climate change issues. It acts as a guide on how Zambia can grow her economy in a sustainable manner.

The formulation of this policy was consultative in nature where stakeholders from across the country were involved with special consideration being given to vulnerable groups including the rural poor. One of the objectives of the NPCC is to communicate and disseminate information on climate change. This is a key component of the policy as it is vital that citizens are provided with information on climate change and the policy specifically.

Before the NPCC was developed, there was a fragmented approach of dealing with climate change and environmental protection issues in Zambia that saw various government departments working in silos. The development of the NPCC therefore was an effort to coordinate such activities to ensure a positive outcome of climate change interventions.

The overall objective of the NPCC is “to provide a framework for coordinating climate change programmes in order to ensure climate change resilient and low carbon development pathways for sustainable development towards the attainment of Zambia’s Vision 2030” (MLNREP, 2016:11). Zambia’s Vision 2030 is in line with joining the world in meeting the SDGs.

Though public awareness has been identified as a priority area in the NPCC, the sad reality is that most of the citizens are not aware of this policy and there is need to improve in this area if the policy is to have a positive impact.

iv. To assess whether citizens are aware of the causes and consequences of climate change, and the NPCC that aims to combat climate change in Zambia.

Information obtained from this study has led to the conclusion that the citizenry was not aware of the existence of the NPCC. This is a policy that was implemented in April 2016, and is currently in its second year of implementation. How can we expect this policy to be a success and make an impact?

The results revealed that the respondents did have some level of awareness of climate change causes and consequences and strategies to mitigate this. The awareness was not necessarily derived from the NPCC as most respondents were not aware of it but rather from prior policies and programmes by the government and other agencies. Results also revealed that there was a general knowledge on what climate change was including its causes and effects. Most

of those that participated in the study have been affected or recognized the effects of climate, change especially through the changes in weather patterns which had affected agriculture negatively.

The final objective that aims to offer recommendations for improved awareness of the NPCC and climate change in Zambia will be addressed in the next section.

It can be concluded that the development of the NPCC like many other policies in Zambia that are well planned and respected have not given priority to awareness and education of the policy. The policy offers a possible solution to mitigating climate change and reducing its negative impacts has not reached the citizenry and is most likely not going to reach those at the grassroots level, the rural poor. Though there is some awareness on climate change and its causes, more has to be done to sensitize and educate the citizenry in order to ensure that they have the correct and accurate information. Only then will they be able to understand and participate in implementing the NPCC effectively.

Not all the participants of this research were aware of the existence of the NPCC or any other government programme on climate change. Others had participated or were aware of climate change programmes facilitated by other organisations.

There is indeed a close relationship between climate change awareness and climate change mitigation. If the implementation of the NPCC is to yield any positive results, awareness and education need to be prioritized which needs to reach all the parts of the country. The problem of climate change which has the ability to negatively affect sustainable development is making headlines and should really be a topic of discussion country-wide. Information on climate change should be disseminated on a continuous basis to ensure assimilation by all members of the public regardless of which part of the country they reside in. If urban dwellers hardly have knowledge of this document and its contents, it is highly doubtful that the people living in rural areas are aware of it.

7.1 RECOMMENDATIONS

In addressing the final objective of this research, the following recommendations are offered to improve awareness on the NPCC and climate change awareness in Zambia, based on the findings of the empirical research and review of international strategies in the earlier chapters.

First, **as the policy is already being implemented and in circulation, it must be disseminated to all parts of the country not only to urban areas.** The Ministry of Lands, Natural Resources and Environmental Protection who developed the NPCC needs to do more in ensuring that the dissemination of this policy reaches all parts of the country. The newly established Department of Climate Change under the same Ministry needs to be proactive in educating and creating awareness of climate change. Funding of the Department needs to be utilized appropriately before they can embark on starting new programmes and projects.

The section under country responses to climate change has highlighted the significance of climate change awareness and education in order to enhance mitigation and adaptation efforts. There is still an opportunity to go out and assess the impact of the policy through a monitoring and evaluation programme and fill in the gaps where need be by promoting awareness on the policy and climate change related issues in general.

Second, **the NPCC must be printed in various local languages to allow the locals across the country access the information.** It also is important to note that the majority of Zambians living in rural areas may not be able to understand the English version of the NPCC and this calls for the need for the policy to be printed in all local languages and production of a simplified version of the document to enable people to understand the contents of the policy. The NPCC has not been translated into the local languages and the English copy has not been distributed evenly in all provinces.

All citizens have the right access to information such as that of government policies. It is the mandate of government to ensure that people are well informed on policies, programmes and projects that are put in place to improve their livelihoods. Only then can they be able to contribute effectively to finding a solution to the problem. Not all citizens can read English and it therefore is prudent that the NPCC be produced in local languages and in a simplified version to bring about access by all.

Third, **the newly formed Department of Climate Change in the Ministry of Lands, Natural Resources and Environmental Protection should undertake sensitisation programmes on the NPCC.** They should produce simplified brochures to be disseminated in addition to the simplified policy version. Information must be able to trickle down from cities and towns to the most rural parts of the country. A lot more with regard to sensitisation and dissemination of information on climate change and the NPCC can still be done as highlighted in the second recommendation.

Fourth, **climate change must be introduced as a part of the curriculum in primary and secondary schools.** The Ministries of General and Higher Education in collaboration with the Curriculum Development Centre have to introduce courses on climate change in both primary and secondary schools. This will enable learners to start acquiring knowledge on climate change at an early age. This can also help to disseminate information to other household members and the society at large.

Introducing climate change issues in Zambia's education system has been discussed at a number of climate change forums and most recently in the development of the Zambia National Climate Change Learning Strategy which has prioritized the following three areas:

- i. Awareness Raising.
- ii. Capacity building.
- iii. Mainstreaming of climate change into national curricula.

Fifth, **there is a need for strong political will by top government leaders to prioritize climate change.** The NPCC is a policy document developed by the government and they therefore have the responsibility to ensure that the objectives of the policy are achieved. The government needs to make sure awareness programmes are prioritized which is key in ensuring that the mindsets of the citizenry change. This can be done by ensuring that during the budgeting process, adequate funds are allocated to climate change activities and specifically the Ministry of Lands, Natural Resources and Environmental Protection which is mandated to deal with climate change issues. This Ministry needs to work closely with other line Ministries which include but are not limited to the following:

- Ministry of Chief and Traditional Affairs.
- Ministry of Tourism and Arts.
- Ministry of Agriculture.
- Ministry of Fisheries and Livestock.

Additional funds need be sourced from donors with emphasis on the fact that it be used for the intended purpose. Dealing with climate change needs to be a consented effort with an input from key stakeholders.

Sixth, **Members of Parliament and Traditional Leaders should be involved and adequately informed on the NPCC and climate change in general in order for them to take back this information to their constituencies and chiefdoms respectively.** There is also a need to identify and engage with community leaders and other relevant stakeholders as these would also play an important role in disseminating information on the policy and climate change.

Members of Parliament and Traditional Leaders have a responsibility to ensure that the people that they represent are well informed on national issues. This can be done through frequent engagement with their constituents and subjects respectively.

Finally, **climate change mitigation programmes must be inclusive and participatory in nature and this will enhance information sharing.** There are a number of ways that can be adopted such as town hall meetings in urban centers and community meetings and focus group discussions in rural areas. Environmental protection clubs can be introduced in schools where children can be encouraged to participate in activities such as tree planting. The development of such policies should not only focus on urban areas and provincial centers. The Ministry of Lands, Natural Resources and Environmental Protection needs to ensure that members of the public are engaged and participate in climate change mitigation activities.

7.2 CHAPTER CONCLUSION

This study investigated climate change awareness in Zambia and particularly aimed at offering recommendations for the improved implementation of the NPCC to advance climate change awareness in Zambia. It finds that though Zambian citizens have some level of climate change awareness, most of them are not aware of the NPCC meaning that they may be unable to participate in the successful implementation of this policy.

To overcome this, there is a need to follow the recommendations given which include that the NPCC needs to formulate a document that is presented and disseminated in a way that is understood by all Zambians. This needs to be done in all local languages and summarized for easy reading and understanding. The use of information communication technology may also be a useful tool in enhancing awareness of the national policy on climate change. This also applies to other related information on climate change. Climate change mitigation strategies have to include awareness activities in order to be successful and both government and all stakeholders need to move at the same pace and speak with one voice as they endeavour to deal with the issue of climate change.

REFERENCES

- Agawral, P. & Ravichander, A. 2016. ***Theatre, A Strategy to Raise Awareness about Public Policy Challenges***. Edited by Leandro Etch. Politics and Ideas. February, 2016.
- Amin, A. L. 2015. ***Building Climate Change Awareness in Brazil***. Inter – American Development Bank (IDB). October, 2015.
- Buckley, C. 2017. China's ***Role in Climate Change, and the Possibility in Tightening It***. New York Times. Accessed from <https://www.nytimes.com/2017/06/02/world/asia/chinas-role-in-fighting-it.html> . Accessed on 19th September, 2018.
- Catrinus, J. & Munasinghe M, 1998. ***Climate Change Policy*** Cambridge University Press, March 1998. ISBN-10: 052159314.
- Centre for Climate and Energy Solutions. 2017. ***Working Together for the Environment and the Economy***. 2101 Wilson Boulevard, Arlington, VA, 22201.
- Centre for Disease Control Prevention. 2011. ***Developing an Effective Evaluation Plan***. United Kingdom, CDC, 2011.
- Chandler, W. Schaeffer, R. Dadi, Z. & Shukla, P. 2002. ***Climate Change Mitigation in Developing Countries: Brazil, China, India, Mexico, South Africa and Turkey***. AGRIS, 2013.
- Croitoru, L. & Sarry, M., 2010. ***The Cost of Environmental Degradation: Case Studies from the Middle East and North Africa***. Washington, D.C: World Bank, 2010.
- Department of Climate Change. 2015. ***National Development and Reform Commission of China***. <https://www4.unfccc.int/sites/submissions/INDC/SubmissionPages/submissions.aspx> Accessed on 10th October, 2018.
- Department: Planning, Monitoring and Evaluation, DPME Evaluation Guideline 2.2.16, 2015. ***How to develop a Departmental Evaluation Plan***. The Presidency Republic of South Africa, 2015. South Africa.

Dunn, W, N. 2014. **Public Policy Analysis**. Fifth Edition. Pearson Education Limited, Edinburgh Gate, Harlow, Essex CM20 2JE, England and Associated Companies throughout the world.

European Environmental Agency. 2015. **Climate Change Mitigation – National Responses (Germany)**. Published in March by the European Environmental Agency, 2015.

Glacken, C. J. 1967. **Geologies on Environmentalism**. University of California Press, 1967.

Government of the Republic of Zambia. 2014. **The National Forestry Policy**. Ministry of Tourism, Environment and Natural Resources.

Harshal, T. Pandve, Chawla P.S. Fernandez, K. Singru, S. A. & Pawar, S. 2011. **Indian Journal of Occupational and Environmental Medicine**. Assessment of Awareness Regarding Climate Change in an Urban Community. Volume: 15. Issue: 3. 2011. September-December.

Human Development Report 2007/2008. 2007. **Fighting Climate Change: Human Solidarity in a Divided World**. United Nations Development Programme. New York, USA. 2007.

Intergovernmental Panel on Climate Change (IPCC). Climate Change 2007: **Impacts, Adaptation and Vulnerable Edited by the IPCC Working Group II Contribution to the Fourth Assessment Report of the IPCC**. Published for the Intergovernmental Panel on Climate Change. Cambridge University Press.

Intergovernmental Panel on Climate Change (IPCC). 2013. **IPCC Factsheet: What is the IPCC**. IPCC Secretariat World Meteorological Organisation. IPCC Geneva, Switzerland.

https://archive.ipcc.ch/news_and_events/docs/factsheets/FS_ipcc_assess.pdf
Accessed on 10th October, 2018.

Intergovernmental Panel on Climate Change (IPCC). 2014. **Climate Change 2014: Synthesis Report Contribution of Working Groups I, II, and III**. Fifth Assessment Report on the IPCC. IPCC Geneva, Switzerland.

Jeori, R. 2015. ***Impact of Short-lived non-CO2 Mitigation on Carbon Budgets for Stabilizing Global Warming***. Environmental Research Letters. 10 075001.

Kiehl, J. & Trenberth, K. 1997. ***Earth's Annual Global Mean Energy Budget***. Bulletin of the American Meteorological Society 78, 197-206.

Lee, K. Y. 2016. ***Communications for Public Policy Delivery. The Government and Public Sector Practice***. School of Public Policy, NUS 469C Bukit Timah Road Singapore, 259772. <http://sites.wpp.com/sustainabilityreports/2017/our-client-work/> . Accessed on 18 July, 2017.

Lieserowitz, A. & Howe, P. 2015. ***Climate Change Awareness and Concern in 119 Countries***. Yale Program on Climate Change Communication. Article, July 27, 2015.

Matakala, P. Kokwe, M. & Statz J. 2015. ***Zambia National Strategy to Reduce Emissions from Deforestation and Forest Degradation (REDD+)***. Ministry of Lands Natural Resources and Environmental Protection. UN – REDD Programme. United Nations Development Programme.

Manuti, A. 2017. ***Climate Change Awareness: An explorative Study of the Discursive Construction of Ethical Consumption in a Communication Campaign***. Department of Educational Sciences, Psychology and Communication, Department of Educational Sciences, Psychology and Communication, University of Bari, Italy. <http://pubs.sciepub.com/ajap/1/3/6/> . Accessed on 10th September, 2018.

McIntyre, S. 2008. ***Climate Audit: Role of the IPCC***. <https://climateaudit.org/2008/01/08/role-of-the-ipcc/>. Accessed on 13 September, 2017.

Ministry of Lands, Natural Resources and Environmental Protection. 2016. ***National Policy on Climate Change (NPCC)***. Republic of Zambia, Ministry of National Development Planning, April 2016, Lusaka.

Ministry of Tourism, Environment and Natural Resources. 2007. ***Formulation of the National Adaptation Programme of Action on Climate Change***. 22 September, 2017.

Nature Science Report, 2017. ***How Climate Change Unfairly Burdens Poorer Countries***. www.time.com/4209510/climate-change-poor-countries Accessed on 13 September, 2018.

Norton, A. & Leaman, J. 2004. ***The Day After Tomorrow: Public Opinion on Climate Change***. MORI Social Research Institute, 79-81 Borough Road London

Pachauri R. K. & Reisinger A. 2007. ***The Fourth Assessment Report (AR4) of the Integrated Panel on Climate Change***. Contribution of Working Groups I, II and III. IPCC Geneva, Switzerland.

Phiri, F. 2013. ***Deforestation, Charcoal Burning and Livelihood: Zambia's Dilemma***. Uniting African Climate Change Reporters, PAMACC News. Retrieved on June 20th 2015 from <http://pamaccfrica.blogspot.com.../deforestation-charcoal-burnining-and.html>.

Planet Energies. 2017. ***International Efforts to Combat Climate Change***. Accessed from www.planete-energies.com/en/medias/close/international-efforts-combat-climate-change . Accessed on 13th September, 2018.

Polyzos, S. & Minetos, D., 2012. ***Deforestation Dynamics: A Review and Evaluation of Theoretical Approaches and Evidence from Greece, Deforestation around the World***. Dr. Paulo Moutinho (Ed.) ISBN: 978-953-51-0417-9, In Tech. <http://www.intechopne.com/books/deforestation-around-the-world/deforestation-dynamics-a-review-and-evaluation-of-theoretical-approaches> . Accessed on 10 September, 2018.

Swelling, M. & Annecke, E. 2012. ***Just transitions: Explorations of sustainability in an unfair world***. South Africa, UCT Press.

Tucker, D. 2016. ***Developing Countries Can't Afford Climate Change***. Future of Life Institute (FLI), Massachusetts, United States of America.

Uggla, Y. 2008. ***Strategies to Create Risk Awareness and Legitimacy: The Swedish Climate Campaign***. Journal of Risk Research Volume 11, 2008 - Issue 6.

United Nations Development Programme. 2013. ***Sustainable Development Goals*** www.undp.org. Accessed on 10 September, 2018.

United Nations Educational, Scientific and Cultural Organisation (UNESCO). 2017. ***Climate Change Education and Awareness***. UNESCO, 2018.

United Nations Environmental Programme (UNEP), 1992. ***Global Climate Change and Coral Reefs: Implications for People and Reefs***. UNEP, 1992.

Wang, B and Li, Y. 2012. ***Public Climate Change Awareness and Climate Change Communication in China***. 2019 Yale Program on Climate Change Communication.

ANNEXES

Annex 1: Questionnaire

Introduction

Climate change has become one of the most problematic issues both at a national and international level hindering the achievement of sustainable development and having a negative impact on people's livelihoods. The purpose of this questionnaire is to obtain information on the importance of awareness in climate change mitigation.

I am a Masters student in the School of Public Leadership at Stellenbosch University carrying out a research on climate change issues. This fairly short questionnaire will take less than 10 minutes to be completed. The information collected is solely for research purposes and it will be treated as highly confidential. The questionnaire does not request for any personal information and participants are not identifiable in any way. Completing this questionnaire or not has no consequences, there are no risks or benefits at all.

A total of 20 questionnaires will be printed of which 5 each will be distributed to 4 Provinces which include Lusaka, Southern, Copperbelt and Eastern.

Confidentiality clause

Be assured that the information you provide in this questionnaire is strictly confidential and will not be used to injure you in any way. You also have the option not to participate in this study.

Instructions

You are kindly requested to answer the questions below by marking 'X' in the space provided '[]'. A brief explanation can be given in some of the questions where space has been provided.

1. Gender

Male []

Female []

2. What is your current occupation?

Government Ministry or Department []

Private sector []

Informal sector []

Other []

3. Which Province do you currently reside in? If you are visiting in any of the provinces specified below select 'other' and give details of your area of residence and how long your visit has been in the space provided.

Lusaka Province []

Southern Province []

Eastern Province []

Copperbelt Province []

Other; specify below []

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4. How knowledgeable are you with regards to information on climate change?

Very good []

Good []

Moderate []

Poor []

5. If your response in question 4 was 'moderate', 'good' or 'very good', could you briefly explain to me what you understand by the term "climate change"?

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6. Are you aware that climate change is caused by human activities?

Yes []

No []

7. If your answer in question 6 is 'yes', could you provide one or two examples of such activities in the space provided below?

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8. Do you know what greenhouse gases are?

Yes []

No []

9. If your answer in question 8 is 'yes', could you explain your understanding of greenhouse gases in the space provided below?

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10. Have you been affected by the impacts of climate change in way?

If yes, please give brief details on how you have been affected.

Yes []

No []

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11. Are you aware of any government programmes, past or present, to deal with climate change?

If yes, kindly provide details of these in the space provided below

Yes ☐

No ☐

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12. What in your opinion, is the most important role that government could play in managing climate change?

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13. What are the main limitations that government faces in managing climate change?

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14. Are you aware of the National Policy on Climate Change in Zambia?

Yes []

No []

15. Did you attend any sensitization workshops or programmes on the National Policy on Climate Change?

If yes, give details on where and when the workshops and programmes were held in the space provided below.

Yes []

No []

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16. Do you agree that awareness on climate change issues can contribute positively to its mitigation?

If yes, who should be targeted to be educated? What is the best communication strategy government can adopt to reach them and what should be the main focus of such an awareness campaign?

Yes []

No []

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17. Were you involved in the validation process of the National Policy on Climate Change?

Yes []

No []

18. How would you rate the efforts of government to involve members of the public in climate change awareness programmes?

Very good []

Good []

Moderate []

Poor []

19. Would you say that information on climate change and the National Policy on Climate Change in particular has been made available and accessible to the Zambian public?

Yes []

No []

If yes, how has this information been made available and accessible and if no, what do you think the relevant authorities should do to ensure information on climate change is made accessible? Please provide details in the space provided below.

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20. Have you had any other organisation apart from the government who come with programmes on awareness and education on climate change?

If yes, give details of which organisations these are in the space provided below.

Yes ☐ ☐

No ☐ ☐

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Thank you for your participation.

Annex 2: Consent form



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jou kennisvennoot • your knowledge partner

STELLENBOSCH UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

You are invited to take part in a study conducted by Chibemba Kaoma-Sikaneta, from the School of Public Leadership at Stellenbosch University. You were approached as a possible participant because you may be in the position to provide information on climate change that this study requires.

PURPOSE OF THE STUDY

This study is a design evaluation of the National Policy on Climate Change that seeks to assess the prioritization of awareness of the policy and climate change as a whole. The successful implementation of this policy which aims to mitigate the effects climate change requires that members of the public are fully aware of what climate change is and the efforts government is making to deal with this problem.

WHAT WILL BE ASKED OF ME?

If you agree to take part in this study, you will be asked to fill in a simple questionnaire that should not take more than 10 minutes. You can answer these questions in a location comfortable to you and the researcher may either wait for completion to collect it or collection may be done at a time convenient for the participant.

POSSIBLE RISKS AND DISCOMFORTS

There are very minimal or no risk at all for the participant taking part in this study. Your identity is protected as the researcher will not obtain any of your personal information. The information you provide is strictly confidential and will only be used for the purpose of this study.

POSSIBLE BENEFITS TO PARTICIPANTS AND/OR TO THE SOCIETY

There are no direct benefits for your participation in the study. However, the information you provide will be useful for the policy makers who will be able to assess the levels of awareness of climate change in our society. This information will contribute positively as a Monitoring and Evaluation tool of the policy.

PAYMENT FOR PARTICIPATION

You will not be receiving any form or payment for your participation in this study though your contribution will be highly appreciated.

PROTECTION OF YOUR INFORMATION, CONFIDENTIALITY AND IDENTITY

Any information you share with me during this study and that could possibly identify you as a participant will be protected. This will be done by ensuring that your identity remains anonymous as I will be requesting for your name or any other personal information. I will handle all the data collection and entry which will be done on my personal laptop that can only be accessed by myself. Participants and organisations will not be identified in the final research report.

The information you share will be part of data collected from other participants which data will be analyzed and findings used in the final research report. The report will be submitted to the School of Public Leadership at the Stellenbosch University. Be assured that the information you have provided is strictly for the purpose of this research and you may at any point opt out of participating should you feel uncomfortable.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you agree to take part in this study, you may withdraw at any time without any consequence. You may also refuse to answer any questions you don't want to answer and still remain in the study. The researcher may withdraw you from this study if the information you share is not objective.

RESEARCHERS' CONTACT INFORMATION

If you have any questions or concerns about this study, please feel free to contact Chibemba Kaoma – Sikaneta at +260 977 856880, and/or the supervisor Babette Rabie at +27 219184186.

RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research participant, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development.

DECLARATION OF CONSENT BY THE PARTICIPANT
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As the participant I confirm that:

- I have read the above information and it is written in a language that I am comfortable with.
- I have had a chance to ask questions and all my questions have been answered.

- All issues related to privacy, and the confidentiality and use of the information I provide, have been explained.

By signing below, I _____ (name of participant) agree to take part in this research study, as conducted by _____ (name of principal investigator).

Signature of Participant

Date

DECLARATION BY THE PRINCIPAL INVESTIGATOR
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As the principal investigator, I hereby declare that the information contained in this document has been thoroughly explained to the participant. I also declare that the participant has been encouraged (and has been given ample time) to ask any questions. In addition, I would like to select the following option:

The conversation with the participant was conducted in a language in which the participant is fluent.

The conversation with the participant was conducted with the assistance of a translator (who has signed a non-disclosure agreement), and this "Consent Form" is available to the participant in a language in which the participant is fluent.

Signature of Principal Investigator

Date