Prepared with financial and technical support from UN CC Learn, UNDP and the Swiss Agency for Development and Cooperation

UN CC:Learn
The One UN Climate Change Learning Partnership

UNDP
Empowered lives. Resilient nations.

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

PRINTED BY PROPRINT LTD

Republic of Zambia

Ministry of Lands and Natural Resources

NATIONAL CLIMATE CHANGE LEARNING STRATEGY

Foreword

Zambia like all the countries of the world is affected by climate change. The country is experiencing climate induced hazards such as drought, floods and extreme temperatures. Droughts and floods have increased in frequency and intensity since 2007 when the National Adaptation Programme of Action (NAPA) was prepared. Droughts and floods have adversely impacted food and water security, water quality, energy, health and livelihoods of the people, especially in rural communities. Droughts have caused crop failures and affected hydroelectricity generation.

The health effects of climate change related disruptions include; increased respiratory and cardiovascular diseases, injuries and premature deaths related to extreme weather changes. Insufficient infrastructure for water and sanitation has caused disease outbreaks during the flooding episodes as was the case of the cholera outbreak in Lusaka in October, 2017.

Globally, learning has been identified as one of the ways to address climate change. This National Climate Change Learning Strategy provides the social context for learning in key sectors concerned with climate change. The Strategy aims to strengthen the national education and training systems to scale up climate change learning across sectors. It provides specific activities that can be performed in the short, medium and long terms by key sectors for a start. Ultimately, the aim is to have all sectors of the Zambian economy to implement climate change activities.

The Strategy embraces the promises and challenges of the Zambia Vision 2030, reflecting the collective understanding, aspirations and determination of the Zambian people to be a prosperous middle-income nation. This will be achieved by means of implementing the Seventh National Development Plan (7NDP) and climate change associated policies.

Through the 7NDP, Zambia has domesticated and aligned the Sustainable Development Goals (SDGs) to the national plans and priorities. SDG 4 is well articulated in pillar 4 of the 7NDP known as enhancing human capital development. Goal 4 aims to 'ensure inclusive and equitable quality education and promote life -long learning opportunities for all'.

Climate change will continue to affect the country's national economic development agenda, unless company chief executive officers understand green investment opportunities; policy-makers encourage and reward climate smart innovations; teachers convey the right messages about climate change; farmers acquire knowledge and skills to apply climate-resilient agriculture; and forests are managed sustainably.

As climate change affects every aspect of our lives, I wish to implore all stakeholders to work together and implement this Strategy in order to achieve its objectives and meet the aspirations of the Zambian people.

Hon. Jean Kapata, MP
Minister of Lands and Natural Resources

Acknowledgements

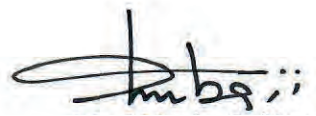
The Ministry of Lands and Natural Resources, on behalf of the Republic of Zambia, is indebted to the Swiss Government through the Swiss Agency for Development and Cooperation (SDC), One UN Climate Change Learning Partnership (UN CC:Learn), United Nations Institute for Training and Research (UNITAR) (as the Secretariat of the UN CC:Learn) and the United Nations Development Programme (Zambia Office) for the technical and financial support towards the development of this National Climate Change Learning Strategy.

The development of this Strategy involved numerous stakeholders, too many to mention by name. Special mention goes to the participants of the National Planning Workshop of July 2019, the Inception and Background Workshop of October, 2019 and the Mid-term Workshop of February 2020 participants. These participants were instrumental in shaping the direction of this Strategy.

Sincere thanks are due to the National Consultant, Dr Justin Lupele, who spearheaded the development of this Strategy; the National Climate Change Learning Strategy technical team represented by Climate Change and Natural Resources Management Department of the Ministry of Lands and Natural Resources; Zambia Environmental Management Agency (ZEMA); Zambia Climate Change Network (ZCCN) and regional partners such as MIET Africa.

I am confident that, with the multi-stakeholder collaboration achieved in the development of this Strategy, implementation will be realized and ultimately contribute to the goal of attaining low carbon and climate resilient development in Zambia.

Lastly, I would like to extend my appreciation to everyone who participated in the process of developing this National Climate Change Learning Strategy for Zambia and for entrusting the Ministry of Lands and Natural Resources to coordinate the process.



Mr. Ndashe L. Yumba
Permanent Secretary
Ministry of Lands and Natural Resources

Contents

Foreword ii
Acknowledgements iii
Tables and Figures v
List of Acronyms and Abbreviations vi
Working Definitions vii
Executive Summary x
Introduction x
International and national contexts x
Legal and Policy Frameworks x
Chapter 1 1
Introduction 1
1.1 Introduction 1
1.2 Education as a response to climate change 1
1.3 Process of developing the NCCLS 2
Chapter 2 4
Background and Rationale 4
2.1 Overview of climate change situation and responses in Zambia 4
2.2 Legal and Policy Frameworks 7
2.3 Education Sector as key to Climate Change Learning 12
2.3.1 General Education 13
2.3.2 Higher Education 13
2.4 Learning Needs and Institutional Capacity to Deliver Climate Change Learning 14
2.5 Institutional Capacities to Deliver Learning 15
2.6 Identified Gaps from capacities to deliver learning 16
Chapter 3 18
Vision 18
Chapter 4 19
Strategic Objectives 19
Chapter 5 20
Measures 20
Chapter 6 38
Implementation Framework 38
6.1 Implementation Framework 38
6.2 Resource Mobilisation and Funding 42
6.3 Evaluation Framework 44
Monitoring and Evaluation Framework 46
References 58

Tables and Figures

FIGURES

FIGURE 1: ZAMBIA'S AGRO ECOLOGICAL REGIONS 4
FIGURE 2 INCREASING ANNUAL TEMPERATURES (1950-2010) 4
FIGURE 3: DECLINING ANNUAL RAINFALL TREND 1980 - 2020 6
FIGURE 4: A SUMMARY OF NPCC COORDINATING AND MANAGEMENT STRUCTURE 38

TABLES

TABLE 1: TIMELINE LEADING TO THE DEVELOPMENT OF THIS STRATEGY 2
TABLE 2: CLIMATE CHANGE RELATED ACTS 7
TABLE 3: POLICY MEASURES 10
TABLE 4: SUMMARY OF CLIMATE CHANGE LEARNING NEEDS 14
TABLE 5: STRATEGIC MEASURES 21
TABLE 6: COORDINATION AND MANAGEMENT - ROLES AND RESPONSIBILITIES 39

List of Acronyms and Abbreviations

AER	Agro Ecological Region
AfDB	African Development Bank
AUC	Commission of the African Union
CC	Climate Change
CCNRMD	Climate Change and Natural Resources Management Department
ClimDev-Africa	Climate for Development in Africa Programme
CSA	Climate Smart Agriculture
CSO	Civil Society Organisation
DMMU	Disaster Management and Mitigation Unit
ECE	Early Childhood Education
ESD	Education for Sustainable Development
GHG	Greenhouse Gas
HEIs	Higher Education Institutions
HNAP	Health National Adaptation Plan
ICT	Information, Communication and Technology
IPCC	Intergovernmental Panel on Climate Change
M&E	Monitoring and Evaluation
MLNR	Ministry of Lands and Natural Resources
MOGE	Ministry of General Education
MOHE	Ministry of Higher Education
MRV	Measurement/Monitoring, Reports and Verification
MTENR	Ministry of Tourism, Environment and Natural Resources
NAIS	National Agricultural Information Services
NAP	National Adaptation Plan
NAPA	National Adaptation Plan of Action on Climate Change
NDC	Nationally Determined Contribution
NMT	Non-motorised Mode of Transport
NPCC	National Policy on Climate Change
NRDC	Natural Resources Development College
REDD	Reducing Emissions from Deforestation and Forest Degradation
SADC	Southern Africa Development Communities
SDGs	Sustainable Development Goals
SEAs	Strategic Environmental Assessments
TEVET	Technical Education, Vocational and Entrepreneurship Training
TEVETA	Technical Education, Vocational and Entrepreneurship Training Authority
UN	United Nations
UN-CC	United Nations - Climate Change
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations International Children Emergency Fund
ZARI	Zambia Agricultural Research Institute
ZMD	Zambia Meteorological Department
ZCCN	Zambia Climate Change Network

Working Definitions

Adaptation	Refers to actions aimed at managing the known and unknown impacts of climate change.
Aesthetic Value	The value of a resource, land or property based on its appearance or scenic views that may be enjoyed from it.
Afforestation	Planting of new forests on lands that historically have not contained forests.
Agro Ecological Region	Land resource mapping unit, defined in terms of climate, landform and soils, and/or land cover, and having a specific range of potentials and constraints for land use. Sometimes used inter-changeably as Agro-Ecological Zones.
Alternative Energy Sources	Energy derived from non-traditional sources e.g. compressed natural gas, solar, hydroelectric, wind.
Biodiversity	The total variety of all living organisms, including their genetic constituents, inter-relationships and habitats together with ecosystems and landscapes of which they are part.
Capacity building	Capacity building and capacity development for climate change refers to the development or strengthening of (a) individual skills/expertise and/or (b) relevant institutions and organizations, to reduce GHG emissions and/or to reduce vulnerability and adapt to climate change.
Climate change	A change of climate, which is attributed directly or indirectly to human activities that alter the composition of the global atmosphere, and which is additional to natural variability, and observed over comparable periods of time.
Climate Change Learning	This is fostering awareness, capacity building and innovation in order to help communities and individuals reduce the greenhouse gas emissions and effectively adapt to the changing climate.
Climate variability	Variations in the mean state and other statistics (such as standard deviations, the occurrences of extremes, etc.) of the climate on temporal and spatial scales beyond that of individual weather events largely due to natural internal processes within the climate system.
Clean development Mechanism	A market-based mechanism under the Kyoto Protocol through which industrialized countries invest in projects in developing countries that yield emission reduction which go towards their commitment under the Protocol.
Community Mobilisation	Act of arranging and organizing society and making it ready for an intended action.
Concentration	Amount of a chemical in a particular volume or weight of air, water, soil or other medium.
Conservation	The wise use and management of nature and natural resources for their inherent value and for the benefit of society, bearing in mind

	that the future generations have as much right to these resources as our own.
Convention	An agreement among states on a particular issue.
Curriculum	A series of planned events, activities which learners go through acquire knowledge and skills. It may also be understood as lessons and academic content taught in a school or in a specific course or program of study.
Deforestation	Those practices or processes that result in the conversion of forested lands for non-forest uses; cutting down of trees in a large area.
Disaster risk reduction	The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.
Dissemination	Act of spreading (information, beliefs and ideas among others
Early Warning	The provision of timely and effective information, through relevant institutions, that allows those exposed to hazards to take action to avoid or reduce their risk and prepare for effective response.
Ecosystem	A complex of living communities of organisms and their non-living environment interacting as a self-sustaining entity of its own.
Electronic Media	Ways of communication by the use of electronics instead of paper.
Emissions	Refers to the release of greenhouse gases and/or their precursors into the atmosphere over a specific area and period of time.
Energy Efficiency	Using less energy to provide the same service.
Entrepreneurship	The act of setting up a business through innovative means.
Environmental Education	This is a process of developing a world population that is aware of and concerned about the total environment and its associated problems, and which has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones.
Flash floods	Sudden local flood of great volume and short duration.
Food insecurity	Uncertainty with regards to availability of food.
Gazetted forest	Forest estate that has been legally established by the state.
Gender mainstreaming	Integration of gender sensitivity and equality in to development plans.
Global Warming	Refers to the gradual increase, observed or projected, in global surface temperatures, as a consequence of the disturbance in the climate system.
Green economy	This refers to an economy that is low in carbon and efficient in its use of natural resources, in addition to traditional inputs such as labour, fossil energy and capital. A green economy values and invests in natural capital and offers the best conditions for

	ensuring sustainable growth, it seeks to conserve and preserve the environment and its sustainability for future generations.
Greenhouse gas	These gaseous constituents of the atmosphere, both natural and human induced that absorbs and re-emits infrared radiation.
Greenhouse gas inventory	Summarises the accuracy of estimations made for the gas emission for climate change planning.
Habitat	Those parts of the environment (aquatic, terrestrial, atmospheric), often typified by a dominant plant form or physical characteristic on which an organism depends, directly or indirectly, in order to carry out its life processes.
Indigenous Knowledge	The understandings, skills and philosophies developed by societies with long histories of interaction with their surroundings.
Integrate	To form and coordinate as one unit to make it more effective.
Kyoto Protocol	This an international legally binding agreement under the United Nations Framework Convention on Climate Change, which gives legally binding emission reduction targets to industrialized countries.
Mainstream	The integration of climate change considerations into the development planning process, sector and local level plans.
Mitigation	Refers to efforts that seek to prevent or slow down the increase of atmospheric GHG concentrations by limiting current and future emissions and enhancing potential sinks for greenhouse gases.
Policies	System or statement containing principles to guide decisions and achieve rational outcomes.
Renewable Energy	An energy source that can be replenished in a short period of time.
Resilience	The ability of a system and its component parts to anticipate, absorb, accommodate or recover from the events of the hazardous event in a timely and efficient manner.
Resources	Any property that can be converted into means of value and support.
Socio economic	Involving social as well as economic factors.
Steering Committee	A committee that decides on the priorities and provides strategic oversight and guidance on issues of climate change adaptation and mitigation.
Strategy	A means chosen to achieve a desired outcome, such as the attainment of a goal or solution to a problem. It implies the art of planning and marshalling resources for their most efficient and effective use.
Stress	Force or combination of forces which produces a strain.
Summit	A meeting of heads of governments.
Sustainable development	The development that meets the needs of current generations, without compromising the ability of the future generations to meet theirs.
Vulnerability	The degree of susceptibility to the negative effects of climate change. It is a function of the type, magnitude and frequency of climate events to which a system is exposed to (exposure) as well as the sensitivity of the system and its capacity for adaptation.

Executive Summary

Introduction

This National Climate Change Learning Strategy systematically examines learning and skills development needs in energy, forestry, agriculture, health and education sectors of Zambia to respond to the impact of climate change. The first three sectors were identified as priority sectors in the Nationally Determined Contribution (NDC) while the education sector was identified as key to knowledge and skills delivery. The health sector is also affected by climate change, by increasing the risk of illness through variations in weather patterns. The Strategy aims to address the challenge of strengthening climate change mitigation and adaptation measures.

International and national contexts

International concerns about global warming were first translated into the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, a global treaty whose main objective is to stabilise GHG concentrations in the atmosphere to a level that would prevent dangerous human induced interference with the climate system. Under the UN Framework Convention on Climate Change (UNFCCC), nations have been urged to integrate learning in the fight against climate change.

The development of national climate change learning strategies in Africa have been informed by global and international policy statements and conventions. At African sub regional and national levels, the development of National Climate Change Learning Strategies has been shaped by initiatives such as establishment of the Climate for Development in Africa Programme (ClimDev-Africa). ClimDev-Africa is a joint initiative of the African Development Bank (AfDB), the Commission of the African Union (AUC) and the United Nations Economic Commission for Africa (UNECA).

Legal and Policy Frameworks

Zambia has put in place climate relevant legal, policies and strategies which include, among others, National Adaptation Programmes of Action (NAPA) 2007; Nationally Determined Contribution (NDC) 2015; National Climate Change Response Strategy 2010; and National Policy on Climate Change (NPCC) 2016. The NPCC provides a framework for coordinating climate change programmes in order to ensure climate resilient and low carbon development pathways for sustainable development, towards the attainment of Zambia's Vision 2030. Although the policies are in place, the challenge remains to integrate and mainstream climate change into other key national development programmes. Most of these policies are sector focused and say little about climate change learning issues. The closest they mention is climate change capacity building, information exchange and awareness raising. This Strategy provides a framework for a comprehensive integration of climate change learning across sectors.

Strategy Vision: Enhanced climate change learning in energy, forestry, agriculture, health and education sectors contributing to mitigation efforts and a resilient Zambia

Overall Objective: To strengthen individual and institutional systemic capacities of the energy, health, forestry, agriculture and education sectors to enable them deliver climate change learning and contribute to the implementation of the NDC and NAPs; and subsequently towards a resilient Zambia by 2030.

Learning Needs and Institutional Capacity to Deliver Learning

The study to assess learning needs and institutional capacity to deliver climate change learning revealed that: staff from learning institutions needed to be capacitated to effectively deliver climate change learning; there was need to establish an understanding of climate change learning and skills development needs of key sectors (i.e.) education, agriculture, energy and forestry); and there was need for deliberate efforts to capacitate the learning institutions and sectors. The research participants were mainly from the education sector (general and higher education); agricultural training institutions. Both public and private higher institutions of learning where invited to participate in the study. Participants to the Resilience Ready: Zambia's 2030 Vision Conference in 2019 also took part in this study.

Measures

The Action Plan for this strategy was developed through a consensus-based process involving relevant sectors (energy, health, forestry, agriculture and education) and stakeholders during the Mid-Term workshop in Chisamba in February 2020. The priority actions to strengthen individual and institutional systemic capacities of priority sectors to deliver climate change learning for a resilient Zambia by the end of 2030 are phased as short term (1-2 years); medium term (3-5 years); and long term (6-10) years. Each of the five sectors (energy, health, forestry, agriculture and education) will deal with the three national priority actions i.e. 1) awareness raising and knowledge strengthening; 2) individual and institutional capacity building and 3) mainstreaming climate change learning into the priority sector policies and systems in the short, medium and long-terms.

Strategy Implementation and Evaluation Framework

The implementation of the National Climate Change Strategy will need multi stakeholder participatory approach. The Strategy will be implemented through the existing (with some new inclusions) sector-wide structure and coordination mechanism outlined in the NPCC whose main stakeholders include:

Council of Ministers - The Council of Ministers is the supreme decision-making body for overseeing climate change interventions in the country. It is chaired by the Vice President. The Permanent Secretary from the Ministry of National Development Planning is the Secretariat to the Council of Ministers.

Steering Committee of Permanent Secretaries - The Steering Committee is the main advisory body to the Council of Ministers on policy, programme coordination and implementation. It is

chaired by the Permanent Secretary in the Ministry of National Development Planning. The Steering Committee is made up of permanent secretaries from line ministries.

Technical Committee – The Technical Committee comprises representatives from relevant ministries and other key stakeholders. The Technical Committee is chaired by the Permanent Secretary, Ministry of Lands and Natural Resources.

Ministry of Lands, and Natural Resources - This is the lead institution in overseeing the implementation of the NPCC and other climate change related programmes and activities, such as this National Climate Change Learning Strategy. It reports to the Steering Committee of Permanent Secretaries.

Ministry of National Development Planning - The Ministry of National Development Planning is responsible for overall coordination and oversight, and mainstreaming of climate change in national development planning processes.

Ministry of Finance - The Ministry of Finance is responsible for resource mobilisation in line with its mandate. It is responsible for managing the national budget process, and is the conduit for all international climate-related financial inflows.

Office of the Vice President - **Disaster Management and Mitigation Unit** - The DMMU is responsible for mobilising and managing resources for disaster response and rehabilitation.

Climate Change and Natural Resources Management Department (CCNRMD) - The Department serves as a Climate Change Secretariat. For purposes of coordination, overall oversight and mainstreaming of climate change in national development planning processes. CCNRMD works in close collaboration with the Ministry of National Development Planning.

In addition to what is spelt out in the NPCC and for the purpose of the implementation of this Strategy, the coordinating committee membership will be extended to include the Ministry of General Education, Ministry of Higher Education, Ministry of Health, Zambia Environmental Management Authority and Zambia Climate Change Network. These will play key roles in the implementation of the NCCLS.

The performance of this Strategy will be measured by means of a Monitoring and Evaluation (M&E) Framework. Performance will be ascertained by ensuring continuous monitoring and regular evaluations of the set-out action plans and their respective indicators, which include anticipated outcomes from the interventions. Accountability will ensure compliance with set standards and results against planned activities/targets which will be responsive to the demands and expectations of the national leadership, citizenry as well as donors. Above all, M&E will ensure continuous and conscious involvement of key stakeholders by transparently sharing results, ideas, views and perspectives thereby enhancing collaborative learning.

Chapter 1
Introduction

1.1 Introduction

Climate Change is defined as change in the earth's climate over time. It is attributed directly or indirectly to human activities that alter the composition of the global atmosphere, adds to natural variability, and observed over comparable periods of time. Climate change is disrupting global economies and affecting lives, costing people, communities and countries. Weather patterns are changing, sea levels are rising, weather events are becoming more extreme and greenhouse gas emissions are now at their highest levels in history. Without action, the world's average surface temperature is likely to surpass 3 degrees Celsius this century. The poorest and most vulnerable people are being affected the most.

In 1992, international concerns about global warming were translated into the United Nations Framework Convention on Climate Change (UNFCCC). The main objective of the UNFCCC is to stabilise GHG concentrations in the atmosphere to a level that would prevent dangerous human induced interference with the climate system. Zambia is a signatory to the UNFCCC having signed the treaty on 11 June 1992 and ratified it on 28 May 1993.

Zambia has experienced climate induced hazards which include drought, floods and extreme temperatures. These have adversely impacted food and water security, water quality, energy and livelihoods of the people, especially in rural communities. Such impacts are likely to compound the daunting economic and social challenges the country already faces.

1.2 Education as a response to climate change

Globally education, in its broader sense, is seen as a response to taking action against climate change. Education provides skills, knowledge and setting the right attitude for people world over to take action. International conventions and policies have provided guidelines on the need for education and learning to be at the centre of the efforts to respond to climate change. The need for education has been highlighted in initiatives such as the Rio Earth Summit; the UNFCCC Article 6 and the Doha Work Programme; the UNFCCC Article 6 and the Kyoto Protocol Article 10; the Paris agreement of 2016; Durban Forum on Capacity Building; the World Summit on Sustainable Development (2002); and the UN Decade of Education for Sustainable Development (2005-2014).

> **"Education provides the skills people need to thrive in the new sustainable economy, working in areas such as renewable energy, smart agriculture, forest rehabilitation, the design of resource-efficient cities, and sound management of healthy ecosystems. Perhaps most important, education can bring about a fundamental shift in how we think, act, and discharge our responsibilities toward one another and the planet."**
>
> Heads of UNESCO and UNFCCC

As a response to the international calls for concerted efforts to tackle effects of climate change, Zambia has established a long-term institutional structure for the coordination of climate change activities and programmes. The coordinating structure includes the Council of Ministers, the Steering Committee of Permanent Secretaries and the Technical Committee on Climate Change. Furthermore, the country has established a dedicated Department of Climate Change and Natural Resources in the Ministry of Lands and Natural Resources. Zambia has also embarked on the development and implementation of dedicated climate change related policies and strategies. They include the National Policy on Climate Change (NPCC), the National Determined Contribution (NDC), and the country is in the process of developing the National Adaptation Plan (NAP). Various sector policies and programmes have mainstreamed climate change.

Against this backdrop, this National Climate Change Learning Strategy has been prepared under the One UN Climate Change Learning Partnership (UN CC: Learn) with financial and technical support from the Zambia office of the United Nations Development Programme (UNDP), the Swiss Development Cooperation and the United Nations Institute for Training and Research (UNITAR). The NCCLS aims to build capacities of individuals and institutions in climate change learning with the view to empower the general citizenry to take action on the effects of climate change. Many studies and policies in Zambia have shown that awareness, knowledge and skills are often the bottleneck for green, low emission and climate resilient development. These findings have been highlighted in the Study on Information Needs Assessment and Identification Gaps on Climate Change in Zambia (2010); National Adaptation Plan of Action (NAPA) 2000; National Policy on Climate Change (2016); and Nationally Determined Contribution (NDC) 2015, among others.

1.3 Process of developing the NCCLS

The process of developing the National Climate Change Learning Strategy involved multiple stakeholders from line ministries, civil society organisations, non-governmental organizations, private sector and media organisations. The process involved a series of meetings, workshops and a survey on learning needs and capacity to deliver learning. Table 1 below shows a brief timeline for the process of developing the Strategy.

TABLE 1: TIMELINE LEADING TO THE DEVELOPMENT OF THIS STRATEGY

Date and Place	Event
July, 2019 Ibis, Chisamba	National Plan National Planning and Inception Workshop to identify 3 key priority actions.
October, 2019 Cresta Golfview, Lusaka	Workshop to review and validate the Inception and Background Report Review draft reports.
November, 2019 Lusaka	The Background Report was subjected to rigorous reviews by the technical team which included the UNITAR and UNDP.
January 2020 Lusaka	A report on the study to assess learning needs and institutional capacity to deliver climate change learning produced. The report provided an understanding of learning and skills development needs of key sectors and institutions which are affected by climate change.
26-27 February 2020 Ibis, Chisamba	Mid-term workshop to develop initial sector (energy, forestry, agriculture and education) specific activities and draft Action Plans in the context of the three priority areas that were identified at the National Planning Workshop in July 2019. 25 participants attended the meeting which reviewed the Background and Learning Needs and Capacity to Deliver reports. The meeting also confirmed the initial priority actions (based on the National Planning Workshop outcome).

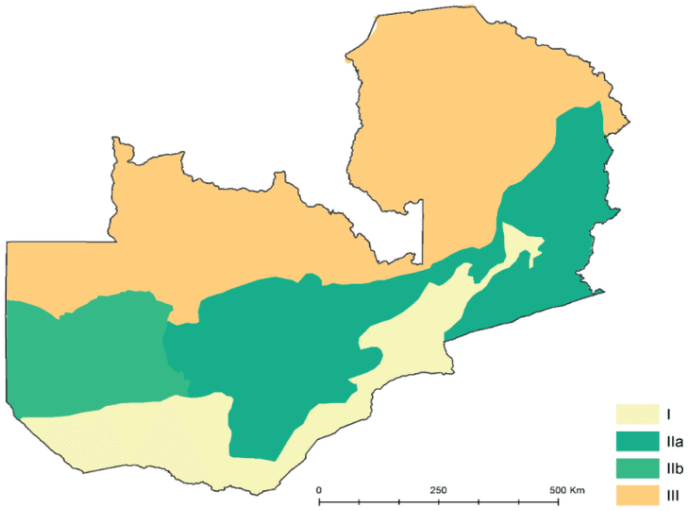
Chapter 2

Background and Rationale

2.1 Overview of climate change situation and responses in Zambia

According to the United Nations, Zambia has experienced some of its worst droughts and floods in the last two decades. The future trends in the country are towards a higher average temperature, and a possible decrease in total rainfall. To better understand the effect of climate change in the context of rainfall and temperature trends, the NCCLS draws on the Agro Ecological Regions (AER) (Figure 1) which have been used as policy and adaptive management tool in agriculture planning and investment.

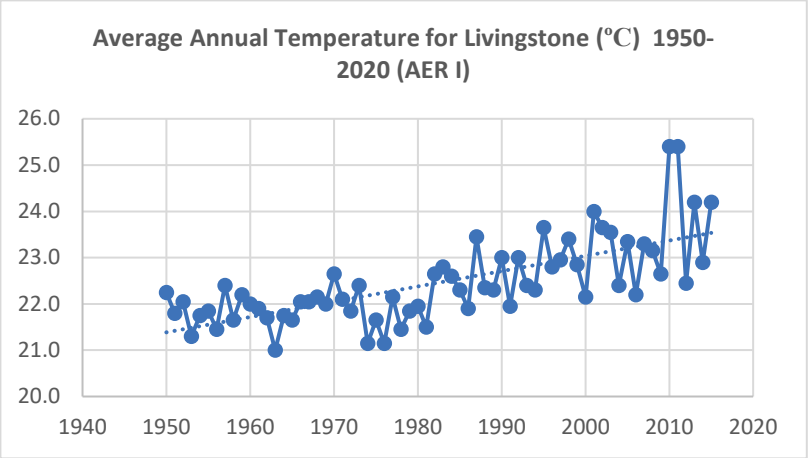
FIGURE 1: ZAMBIA'S AGRO ECOLOGICAL REGIONS

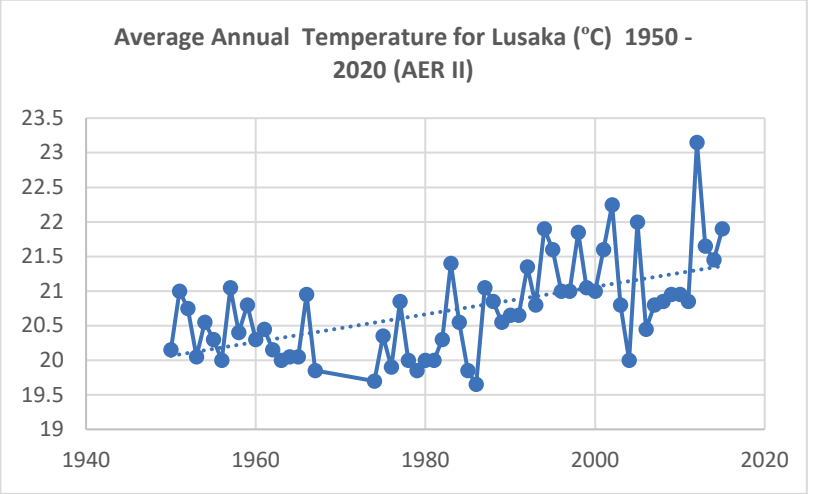


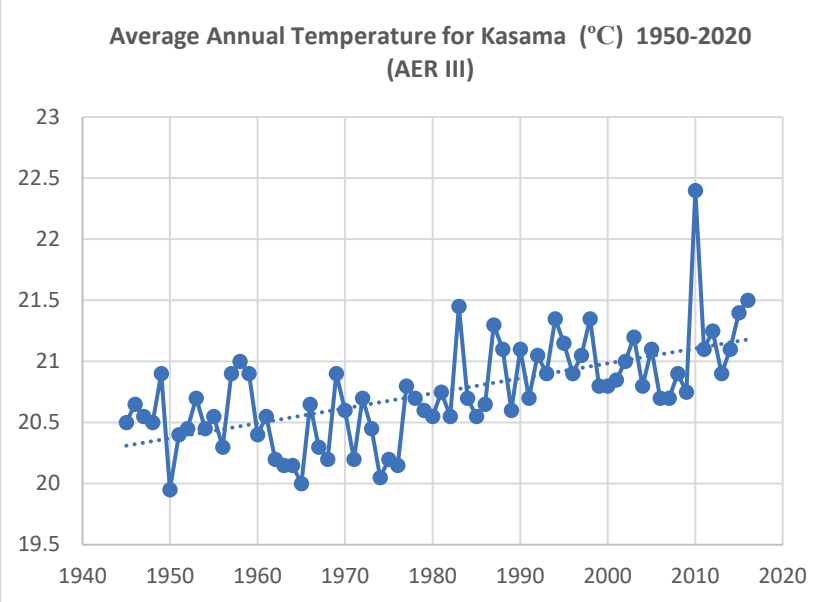
Zambia has three Agro Ecological Regions (AER I, AER II and AER III). The impact of climate change in the country's AER are evidenced through observed gradual increases in average temperatures averaging 0.3 degrees Celsius per decade and declining trend in amounts of rainfall. There has been a declining rainfall pattern across Zambia with the Southwest Region (largely AER I) and Western parts (AER II) receiving less rain and experiencing higher frequency of climate extreme events; droughts and flash floods compared to other AERs of the country.

Figure 2 and 3 illustrate the recent annual temperature and rainfall trends (respectively) between 1950 and 2020 (average annual temperature) 1980 and 2020 (average annual rainfall) in the three AERs. The temperature and rainfall are based on readings during the same time period from Livingstone (AER I), Lusaka (AER II) and Kasama (AER III).

FIGURE 2 INCREASING ANNUAL TEMPERATURES (1950-2010)



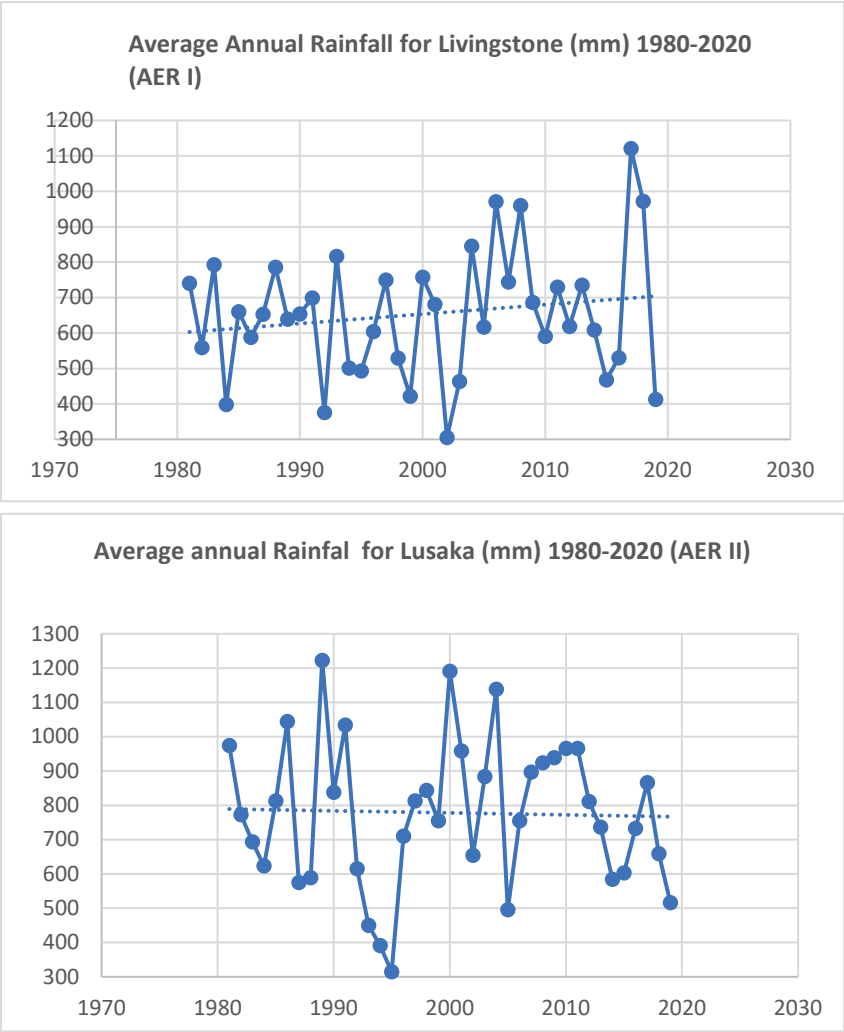


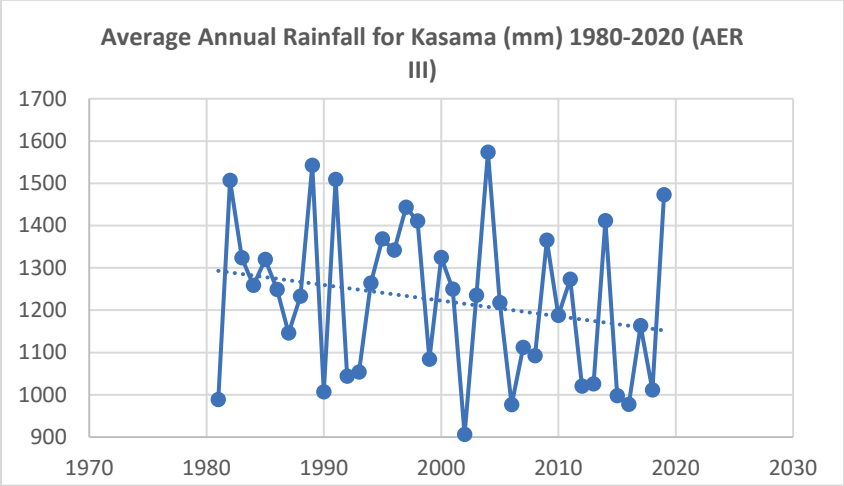


Temperatures in all the three agro-ecological regions are fluctuating above and below the normal temperature threshold from the year 1950-2020. However, there has been a steady increase in

average annual temperate since 1950. Figure 2 indicates that mean annual temperature has increased by 1.3 degrees Celsius since 1960, an average rate of 0.34 degrees Celsius per decade. On the other hand, the mean rainfall over Zambia has decreased by an average rate of 1.9 mm/month (2.3%) per decade since 1960. For example, in 2010 AER I experienced a sharp average annual temperature of up to 25.4 degrees Celsius. AER II recorded 23.15 degrees Celsius in 2012 while AER III recorded 22.4 degrees Celsius in 2009 and 2019.

FIGURE 3: DECLINING ANNUAL RAINFALL TREND 1980 - 2020





Source - Rainfall and temperature data – Zambia Meteorological Department 2020.

The average annual temperature has been increasing in all the three AERs (see Figure 3) AER II received the lowest rainfall in decades of 314 mm in 1995. A 25 year period, from 1990-2015 shows at least 20 years in each AER 1 had below average rainfall. The average annual rainfall variability is not uniform across the three AERs.

2.2 Legal and Policy Frameworks

The Zambian government has put in place a comprehensive legal framework and policies for an integrated approach to climate change. The sector ministries regularly review their relevant policies and legislation, in order to ensure that they are in line with the objectives of the National Policy on Climate Change and other initiatives meant to tackle climate change. These legal and policy frameworks will inform the implementation of the NCCLS. Tables 2 and 3 provide some explanation on how the legal and policy frameworks will apply to the implementation of the NCCLS.

TABLE 2: CLIMATE CHANGE RELATED ACTS

Enabling Act	Purpose	How it will support NCCLS Implementation
Environmental Management Act No. 12 of 2011	The Act provides for the management of environment and natural resources. It establishes Zambia Environmental Management Agency.	Promote public awareness, information sharing and education on climate change impacts and effects Support climate change learning in the control and management of emissions from the industry.
Forest Act No. 4 of 2015	The Act provides for the conservation and protection of forests and trees.	Promote community managing of forests and forest products. Educate communities on the importance of forestry in the wake of climate change.

Enabling Act	Purpose	How it will support NCCLS Implementation
Zambia Wildlife Act No. 15 of 2015	The Act is responsible for wildlife management and conservation.	Support sustainable managing and harvesting of wildlife.
Lands Act Cap 184	The Act is responsible for the management and administration of land in Zambia.	Promote sustainable land use management in the context of climate change learning
Agriculture Lands Act Cap 187	The Act provides for sustainable agricultural practices, development, investment and management.	Support Climate Smart Agriculture technologies such as crop diversification. Promote sustainable agriculture practices and climate change adaptation conservation agriculture up-scaling. Promote sustainable irrigation strategies. Improved agricultural practices in response to changes in climate.
Agriculture (Fertilizer and Feed) Act No. 13 of 1994, Cap 226	The Act provides for the regulation and control of manufacture, processing, importation and sale of agricultural fertilisers.	Promote sustainable increase in agricultural productivity of major crops with comparative advantage through use of inorganic fertilisers.
Energy Regulations Act No. 23 of 2019	The Act among other issues regulates energy use and efficiency.	Scale up of alternative energy sources, energy efficiency and conservation, such as solar, wind and geothermal. Promote practices that will reduce demand for wood energy. Promote the upgrade of petroleum by blending of oil and fuel to reducing carbon emissions.
Mines and Minerals Act 11 of 2015	The Act provides for mineral and mines development.	Provide for safety, health and environmental protection and green production in mining operations.
Urban and Regional Planning Act No. 3 of 2015	The Act provides for planning for all land in Zambia.	Construction of climate resilience infrastructure such as roads and buildings.
Road Traffic Act No. 11 of 2002	The Act provides for road safety and transport management.	Reduce GHG emissions from vehicles and increasing government revenues through education on the enforcement of carbon tax.
Water Resources Management Act No. 21 of 2011	The Act provides for the regulation and management of water resources.	Promote integrated water resources management. Supports delineation of flood risk zones. Supports development of catchment management plans. Strengthen water users' associations and regulate construction of boreholes and dams.

Enabling Act	Purpose	How it will support NCCLS Implementation
Zambia Development Agency Act No. 11 of 2006	The Act provides for the trade, investment and industrial development.	Promote climate change resilience trade and investment.
National Heritage Conservation Commission Act, Cap 173	The Act provides for heritage conservation and management.	Promote sustainable conservation and management of national heritage sites.
Fisheries Act No. 22 of 2011	The Act provides for sustainable fisheries and aqua- cultural development and management.	Promote aqua-cultural development and management Community fish conservation education
Disaster Management Act No. 13 of 2010	The Act provides for Disaster preparedness and response.	Contribute to shifting from focusing only on disaster management to disaster risk reduction, climate change and decentralisation. Promote education for sustainable development among vulnerable communities and improve their resilience.
Public Health Act No. 22 of 1995	The Act provides provision with respect to matters affecting public health in Zambia including prevention and suppression of infectious diseases.	Improve the health status of the people and reducing mortality rates resulting from climate sensitive diseases and HIV/AIDS Epidemic preparedness and response. Support the operationalisation of the Health National Adaptation Plan (HNAP) strategy.

TABLE 3: POLICY MEASURES

Policy Measure	Objective	Climate Change Learning Strategies Related Measure
Adaptation and Disaster Risk Reduction	To promote and strengthen the implementation of adaptation and disaster risk reduction measures to reduce vulnerability to climate variability and change	• Strengthen the mechanism for identifying risks and hazards in order to facilitate planning and early warning • Strengthen the resilience of infrastructure, ecosystems and promote innovation, knowledge and education • Promote the adoption of appropriate Climate Smart Agricultural (CSA) technologies for different agro-ecological zones • Promote monitoring and management of wildlife habitats • Establish and/or strengthen mechanisms for monitoring networks and information systems for improved utilization of climatic data and information • Promote communities' ability to develop physical and social infrastructure that are resilient to the adverse effects of climate change
Mitigation and Low-Emission Development-Related Actions	To promote investments in climate resilient and low carbon development pathways in order to generate co-benefits and provide incentives for addressing climate change more effectively	• Ensure that investments adhere to sustainable development principles and are in line with low-carbon development principles • Promote scaling up of alternative energy sources, energy efficiency and conservation • Reduce forest degradation and loss of forest ecosystems
Measures Related to Crosscutting Issues (Capacity Building)	To strengthen the institutional and human resource capacity in order to effectively and efficiently address all aspects of climate change at, national, provincial, district and local levels	• Promote stakeholders' participation and partnerships that integrate climate change in natural resources management at all levels • Enhance the capacity of rural economies to diversify, by promoting alternative income generating activities that are climate resilient • Promote capacity building in climate change response actions • Facilitate implementation of capacity development programmes in modeling and systematic observation • Enhance the monitoring and review of the effectiveness of capacity-building programmes • Promote consideration of gender aspects and the role and needs of youth and persons with disabilities in capacity-building activities • Promote public education and awareness to enhance the capacity to address climate change

		• Build capacity in developing innovations and technologies and adoption and utilisation of external technologies • Strengthen the capacity of local technological innovation centers to help strengthen institutional technology generation and transfer through a learning-by-doing approach
Research and Development	To foster research and development in order to improve understanding and decision making in responding to climate change	• Promote research and development (R&D) to address climate change/ variability in all sectors • Promote the use of prediction models and technologies to determine regional vulnerability of the sectors to climate change • Support higher learning and research institutions on climate related applied research • Facilitate research, development and demonstration of new climate-friendly technologies for mitigation and adaptation
Education and Public Awareness	To promote communication and dissemination of climate change information to enhance awareness and understanding of its opportunities and impacts	• Facilitate climate change advocacy, communication and awareness • Strengthen climate change education, training and public awareness at all levels • Develop and implement an information generation, sharing and exchange mechanism for climate change • Promote involvement of local authorities and traditional leaders in climate change education, public awareness including the use of indigenous knowledge • Promote dissemination of research findings at all levels
Gender	To engender climate change programmes and activities in order to enhance gender equality and equity	• Promote gender differentiation and implementation of gender-specific measures on climate change • Improve the participation of women, youth and children in climate change programmes • Promote gender equity in access to climate finances
Technology Development and Transfer	To develop and promote appropriate technologies and build national capacity to benefit from climate change technological transfer	• Facilitate the development, deployment, diffusion, transfer, and promotion of access to affordable environmentally sound technologies • Promote identification and utilisation of available climate-friendly technologies for mitigation and adaptation that meet low-carbon and climate-resilient development needs • Promote use of indigenous knowledge and local innovation on climate change • Encourage protection of local innovation and intellectual property rights • Facilitate establishment and strengthening of climate technology centres/networks; and
Promotion of Green Investments	To promote investments in climate resilient and low carbon development pathways in order to generate	• Promote investments in renewable energy resource development and increase the proportion of renewable energy in the total energy mix • Provide incentives for low emission technologies

	co-benefits and provide incentives for addressing climate change more effectively	• Promote investments in non-motorised modes of transport (NMT)
Mainstreaming of climate change	To promote mainstreaming of climate change into policies, plans and strategies at all levels in order to account for Climate Change risks and opportunities in decision making and implementation	• Strengthen effective mainstreaming of climate change, response and sustainable recovery from climate related disasters • Promote Strategic Environmental Assessments (SEAs) as a tool for integration of low emission principles • Promote mainstreaming of gender into all climate change programmes • Facilitate mainstreaming of climate change into school curriculum and teachers continuing professional development • Develop and implement codes and standards to promote adaptation and mitigation in infrastructure development

2.3 Education Sector as key to Climate Change Learning

Government's aspiration is to deliver education in a seamless process for the learner from inception, early childhood education, primary school, secondary school, teacher education to tertiary level (including Technical Education, Vocational and Entrepreneurship Training [TEVET], and university education). In order to realign what is taught in teacher training colleges with school curricula, some teacher education programmes in higher education institutions teach climate change as full courses, electives or at post graduate level. For example, the University of Zambia has fully fledged undergraduate and post graduate programmes in environmental education which cover climate change issues. Chalimbana University and some colleges of education offer environmental education or Education for Sustainable Development modules to trainee teachers. What is needed is a comprehensive and holistic approach to integrations of climate change learning in formal and non-education systems.

Climate Change is also taught in non-educational courses and programmes. For instance, Copperbelt University offers climate change as follows: as an elective course in 5th year of the BEng in Environmental Engineering; BSc in sustainable natural resource management and climate change; BSc in plant and environmental sciences; MSc climate change; and MSc in climate change and sustainable development. Apart from the formal curriculum, aspects of climate change are offered in professional development and specialised training in key sectors such as; water, agriculture, tourism, livestock and fisheries etc. The Ministry of Agriculture has included climate change in their colleges of agriculture in Monze, Mpika and the Natural Resources Development College (NRDC), for example. The plan would be to expand the integration of climate change in the curriculum of farm training institutes.

2.3.1 General Education

The Ministry of General Education (MoGE) provides oversight over Early Childhood Education (ECE), primary, secondary and colleges of education. The Zambia Education Curriculum Framework of 2013 acknowledges the fact that Zambia has experienced various environmental problems, including deforestation, air and water pollution, land degradation, inadequate sanitation and depletion of fish and wild species. The Framework recognises Education for Sustainable Development, Environmental Education and Climate Change as some of the key cross cutting issues that must be taught from ECE, primary and secondary schools. In particular, the Framework notes that:

> *"Climate Change is an ecological problem as well as a social problem because all societies are affected in one way or another. For this reason, it is important that the school curriculum provides for this education so that learners become aware of the ecological aspects of the climate crisis and learn how to contribute towards preventing and combating the issue."* Zambia Education Curriculum Framework (MOGE, 2013)

Though climate change issues appear in the Zambia Education Curriculum Framework of 2013, the schools lack teaching and learning materials. The teachers may also lack the knowledge and skills to handle climate change issues in the classroom. This Strategy identifies the capacities and capabilities needed to comprehensively integrate climate change issues across the curriculum. These include training of teachers and curriculum developers, development of the learning and teaching materials.

2.3.2 Higher Education

The Ministry of Higher Education (MOHE) has the mandate to oversee University Education; Technical Education, Vocational and Entrepreneurship Training (TEVET); and Science, Technology and Innovation. All the three sectors provide opportunities in the implementation of climate change learning in their programmes. The MOHE policy (MOHE, 2019) is premised on national, regional and global aspirations for education and skills development. These aspirations are espoused in the Seventh National Development Plan (7NDP) 2017 -2021; Vision 2030; Africa Agenda 2064 and Sustainable Development Goals. Developed in 2017, the 7NDP has five (5) pillars that lead to development outcomes intended to improve the livelihoods of Zambians. These pillars are 1) Economic diversification and job creation; 2) Poverty and vulnerability reduction; 3) Reducing development inequalities; 4) Enhancing human capital development; and 5) Creating a conducive governance environment for a diversified economy.

It is through the 7NDP that Zambia has domesticated and aligned the sustainable development goals (SDGs) to the national plans and priorities. The SDG 4 is well articulated in pillar 4 of the 7NDP known as the enhancing human capital development. SDGs 7,9,12, and 13 speak to targets in Science Technology and Innovation

Sustainable Development Goal (SDG) 4 on education and SDG 13 on climate change highlight the importance of education's role in climate change responses. Of particular relevance are Target 4.7 which states that "by 2030 all learners acquire knowledge and skills needed to promote sustainable development..." and Target 13.3 which emphasises the need to "improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning".

However, it is worth noting that Zambia runs a fragmented higher education system which lacks coordination mechanism. For example, on one hand the Government through the MOHE provides policy direction, but on the other hand different line ministries (such as General Education, Justice, etc) and Cabinet Office provide policy and legal oversights to the higher education institutions of learning in specialised areas such as agriculture, law, agriculture tourism, health and public administration. It is envisioned that this National Climate Change Learning Strategy will help create synergies in the provision of climate change learning across sectors and HEIs.

2.4 Learning Needs and Institutional Capacity to Deliver Climate Change Learning

Prior to the development of this Strategy, an assessment of learning needs as well as institutional capacities to deliver learning was carried out. The assessment focused on the priority sectors (energy, forestry, agriculture and education at the time). Climate change related policies and programme documents were reviewed and analysed. Other data came from expert interviews, carried out during the Resilience Ready: Zambia's 2030 Vision conference in 2019. The major documents which were reviewed included the: National Climate Change Response Strategy (2010); Study on Information Needs Assessment and Identification Gaps on Climate Change in Zambia (2010); National Adaptation Plan of Action (NAPA) 2000; National Policy on Climate Change (2016); National Forestry Policy of 2014; National Energy Policy of 2019; National Agriculture Policy of 2014; Zambia Education Curriculum Framework (MoGE, 2013); Nationally Determined Contribution (NDC) 2015; NAP Health and NAP – Agriculture. Others were refereed research papers on climate change education in Zambia such as those of Muchanga (2013) and Namafe (2009). Table 4 shows a summary of climate change learning needs that emerged from the study.

TABLE 4: SUMMARY OF CLIMATE CHANGE LEARNING NEEDS

Identified Learning Needs
Increased sensitisation and awareness-raising effort for effective climate change adaptation and mitigation strategies
Provision of climate change information, knowledge and long-term data to researchers, planners, policy makers and the general public on climate change impacts, adaptations and mitigation measures
Support the Ministry of General Education and the Ministry of Higher Education with skills and knowledge to integrate climate change in teaching, learning and research.
Need for climate change education in formal and non-formal settings. Incorporation of Indigenous knowledge systems in climate change resilience and adaptability practices
Promoting communication and dissemination of climate change information and research findings to enhance awareness and understanding of its impacts

Enhancing the capacity of the media, scientists, researchers, government departments and other organisations involved in climate change to effectively engage and disseminate climate change information
Improving adaptation capacity of farmers through strengthening technical capacity and institutions by providing training on adaptation option and developing training materials on the identified needs
Promoting advocacy and knowledge sharing through global outreach, and write-up of annual reports
Researching education, training and public awareness, capacity building, information and networking, and related financial, technical and capacity needs
Enhancing mainstreaming of climate change in transport infrastructure including housing, energy, water and sanitation, health, education, agriculture, livestock and fisheries, mining, tourism, manufacturing, information and communication, science, technology and innovation, natural resources, local government and decentralization, and gender
Integrating of climate change in the secondary and primary school curriculum and tertiary education through the provision/development of adequate and up-to-date learning and teaching materials.
Support to civil society organisations and the media to raise awareness and education. There is need to support more NGOs and civil society to become climate change training providers
Support community-based adaptation projects such as sustainable agriculture, crop diversification and alternative livelihoods (e.g. bee- keeping, entrepreneurial skills development and fish farming)
Promotion of climate champions among the youth and creating mentoring icons to support them and also spearhead community projects
Capacity building for civil society and government officers participating in the UNFCCC-sponsored climate change negotiations
Facilitating learning and networking among journalists and between the media and other stakeholders to report on climate change
Encompassing legislation, appropriate infrastructure and equipment to develop emergency response plans and disseminate to community and engage them in emergency response education
Promoting climate risk insurance and other traditional mechanisms for risk transfer such as through savings groups, as well as use of ICT and other channels for communication among farmers for a sustained dialogue and feedback from farmers to institutions

2.5 Institutional Capacities to Deliver Learning

This section provides a summary of results of the study - 'Assessment of learning needs and institutional capacities to deliver learning.' The following were the highlights of the findings of the study on institutional capacity to deliver learning:

- Private universities needed more encouragement and support to offer climate change learning programmes. The study showed that while the private universities were interested in offering programmes in climate change, they lacked funds and technical skills.

- The participating higher education institutions had no dedicated funding for Climate change learning activities. All the funding was tied to their 'traditional' courses and programmes.
- Integration of climate change learning into formal education (primary and secondary schools) needed support from institutions that were dealing with teacher education programmes such as the schools of education in universities and the colleges of education. Graduate teachers had a high multiplier effect on climate change learning as they taught in schools throughout the country.
- The agriculture training institutions had a great impact on small scale farmers on integrating climate change learning into their practice.
- Graduate extension officers and trainers who provided services to small scale farmers needed more knowledge on climate change learning strategies.
- The results of the analysis of topics covered by the higher education institutions and desired future climate change topics showed that only few (12.7%) participating training providers offered fundamentals of climate change.
- The more complex topics of climate change (such as REDD; Carbon Markets and CDM, Climate Change and Population Dynamics; and International Law to Address Climate Change) were only covered by 1.6% of the participants.
- All the teaching staff from the participating institutions expressed the desire for capacity development to be able to deliver climate change learning effectively.

2.6 Identified Gaps from capacities to deliver learning

- Lack of funds to support climate change learning programmes within the higher education institutions.
- Lack of knowledge and skills on climate change in the key sectors of the economy
- Complex topics of climate change (such as REDD; Carbon Markets and CDM, Climate Change and Population Dynamics; and International Law to Address Climate Change) were not adequately covered in HEI
- Inadequate climate change information, knowledge and long-term period data to researchers, planners, policy makers and the general public.
- Inadequate communication infrastructure to support exchange of climate change information.
- Lack of awareness, education and training to deal with the negative impacts of climate change.
- Climate change stories by journalists were relatively minimal in both print and electronic media. The potentially powerful role of community media to increase outreach remained untapped due to lack of resources for in-depth reporting of climate change issues.
- Limited/inadequate specialised training among the media personnel on climate change related issues.

- Mainstreaming climate change into the national programmes such as forestry, agriculture, energy health and education were a big challenge due to lack of expertise (in some areas) and financial constraints.
- Lack of climate change teaching and learning materials in primary, secondary schools and tertiary education hampered integration of climate change
- Curriculum developers under the Ministry of General Education had inadequate knowledge and skills to integrate climate change education in early childhood education, primary and school education.
- Lack of capacity and expertise among specialized agencies such as ZEMA, Zambia Meteorological Department (ZMD) and other public and private stakeholders to collaborate effectively in the dissemination of climate risk information.
- Staff capacities of ZMD to reach out to line ministries and agencies on weather and climate forecasting were limited. Furthermore, there was lack of expertise in other line ministries and specialized institutions such as the Zambia Agricultural Research Institute (ZARI) to further operationalize the topic for their sectors/field.

Chapter 3
Vision

The vision of this Strategy was devised at the Mid Term Review workshop held in Ibis Gardens, Chisamba in February 2020. The Vision was informed by literature review of the background report, findings from the learning needs and capacity to deliver climate change assessment and other sector programmes, strategies and policies.

Vision

"Enhanced climate change learning in energy, forestry, agriculture, health and education sectors contributing to mitigation efforts and a resilient Zambia."

Mission

Every priority sector (energy, forestry, agriculture, health and education sectors) in Zambia becomes a climate change learning organisation and a champion of climate-resilient and green economic development by 2030 through the following national priorities:

- raising awareness and strengthening climate; change mitigation and adaptation;
- building individual and institutional capacities to implement climate change learning; and
- mainstreaming of climate change into national priority sector policies and systems.

Chapter 4
Strategic Objectives

Overall Objective

To strengthen individual and institutional systemic capacities of the energy, health, forestry, agriculture and education sectors to enable them deliver climate change learning and contribute to the implementation of the NDC and NAPs; and subsequently towards a resilient Zambia by 2030.

The strategic objectives are derived from the identified national priorities. The strategic objectives are as follows:

Strategic Objective 1

Raise awareness and strengthen climate change knowledge

Strategic Objective 2

Build individual and institutional capacity in climate change mitigation and adaptation

Strategic Objective 3

Mainstream climate change learning into national priority sector policies and systems.

The above strategic objectives will be integrated in all the five identified sectors i.e. energy, forestry, agriculture, health and education. The strategic objectives are geared towards the successful achievement of the mission and overreaching goal of this National Climate Change Learning Strategy.

The media will be a cross cutting theme across all the identified sectors. Mass media is vital in spreading climate change information to impact primarily on the first (basic) levels of the behaviour change stages i.e. awareness creation, creating interest and education - to a large and varied target audiences and in a cost-effective way. This approach will provide the three strategic national priorities with a context in which they will be implemented.

Chapter 5
Measures

The priority actions to strengthen individual and institutional systemic capacities of the energy, forestry, agriculture, health and education sectors to deliver climate change learning for a resilient Zambia by end of 2030 will be achieved by means of activities and strategies to be implemented in the short term (1 to 2 years), medium term (between 3 to 5 years) and long term (between 6 to 10 years). These are illustrated in Table 5. The indicators of each of the activities are included in the Monitoring and Evaluation Framework.

TABLE 5: STRATEGIC MEASURES

National Priority 1		Sensitisation and awareness raising on climate change learning						
Identified main gaps		• **Inadequate climate change information, knowledge and long-term period data to researchers, planners, policy makers and the general public** • **Lack of awareness, education and training to deal with the negative impacts of climate change for Zambia to understand local climate better**						
Strategic Objective		**To raise awareness and strengthen climate change knowledge and skills in the priority sectors**						
Strategy		**Sensitization and awareness raising on climate change learning integration in the key sectors**						
Priority Sector	**Action**	**[1]Indicative Time Frame**	**Lead Agency**	**Supporting Partners**	**Estimated Budget (USD)**	**Potential Source for Resources Mobilization**	**Activities**	**Target Stakeholder/Sectors**
Energy	Sensitisation and awareness raising on climate change in the energy sector	Short term	Ministry of Energy	ZCCN, ZEMA, ZESCO Swedish Embassy, SNV	1500000 (50000 x 3yrs)	UN CC: Learn, Treasury, Ministry of National Development Planning	1.1 Carry out public campaigns/exhibitions on the use of energy efficient technologies 1.2 Conduct community sensitisation activities on the use of renewable energy	Small Businesses households, communities, schools, farmers and health facilities, ZEMA ZESCO ZCCN

[1] Short term =1-2years; medium term= 3-5 years; long term = 6- 10 years

Agriculture	Sensitisation and awareness raising on climate change in agriculture	Short term	Ministry of Agriculture	UN CC: Learn ZCCN, NGOs in Agriculture	580 000 (5000 per district x 116 districts)	UN CC: Learn, Treasury, Ministry of National Development Planning	1.1 Develop and disseminate promotion messages on the successful climate smart agriculture projects including indigenous Knowledge 1.2 Conduct field days at farms undertaking climate smart agricultural projects 1.3 Form radio listening groups on sustainable agriculture such as those formed by Community Markets for Conservation (COMACO) 1.4 Use of audio/visual vans	Small scale farmers Farmer organizations and associations Culture associations School farmers club
Forestry	Sensitisation and awareness raising on climate change in forestry	Short term	MLNR	UN CC: Learn; UNICEF; UNDP Zambia	250000	UN CC: Learn, Treasury, MLNR Ministry of National Development Planning	1.1 Carryout campaigns to improve public awareness and knowledge on the effect of climate change on the forestry sector 1.2 Conduct training workshops, seminars on sustainable forestry management with local communities 1.3 Carry out tree planting activities in schools and local communities 1.4 Establish tree nurseries in schools and communities 1.5 Conduct training, workshops, seminars on Result Based Payments under the REDD+ Programme	General public/small scale farmers Forest extension officers School children Media houses Private companies Commercial & Development Bank
Health	Sensitisation and awareness raising on climate change in health	Short term	MOH	UN CC: Learn; UNICEF, UNDP, Treasury, other CPs	200,000	UN CC: Learn, Treasury, MOH	1.1 Conduct national consultative workshop (physical or virtual) for all the Ministry of Health training stakeholders 1.2 Design and disseminate Information, Education and Communication (IEC) materials	

							such as posters, brochures to health posts throughout the country 1.3 Support school health and nutrition clubs with information and materials on the relationship between climate change and health	NGOs and CSOs that support health education
General Education	Sensitisation and awareness raising on climate change education.	Short Term	MOGE (Ministry of Youth and Sports)	UN CC: Learn; UNICEF; UNDP Zambia	200,000	UN CC: Learn, Ministry of National Development Planning Treasury, UNICEF, UNDP Zambia Office	1.1 Organise (inter school) competitions such as quiz/essay/debates that are related to climate change mitigation and adaptation for in and out of school youths through face to face interactions and via social media 1.2 Design and disseminate Information, Education and Communication (IEC) materials such as posters, brochures, sign board in localities and schools at the sub-national levels 1.3 Create youth climate change dialogues (platforms for young people to discuss effects of climate change on them and climate change issues on youths). provide a sustainable way of coordinating the clubs formed so that they don't die in a short-term 1.4 Hold Sensitisation seminar of Curriculum Dev. Specialists, selected teachers/ school administrators, climate change ambassadors participating in all climate change related activities	Learners, out of school youths Learners at ECE, primary, secondary and colleges of education. Curriculum experts, selected teachers, standards officers, teacher educators from higher education institutions, and TEVET institutions (including provincial and district officials, teacher educators, early childhood educators and standard officers In school and out of school learners

Higher Education	Sensitisation and awareness raising on climate change education.	Short to medium term	MOHE Ministry of youth and sport	UN CC: Learn; UNICEF; UNDP Zambia	200 000	UNITAR, Treasury, UNICEF, UNDP	1.1 Hold seminars and public lectures or forums on climate change 1.2 Development and distribution of supplementary readers, brochures, and posters on climate change for university students and lecturers 1.3 Participate in the Global Climate Change Week (GCCW) every year in October 1.4 Participate and organize activities such as conferences and workshops on climate change related topics. 1.5 Research activities, such as conferences and workshops on climate change related topics 1.6 conducting awareness through social media such as podcasts, organised discussion groups or forums, and Q&A sessions on climate change. Inclusion of aspects of climate change trainings via online platforms in form of short courses 1.7 Youth climate dialogues should as well be included at tertiary level	• Higher Education Institutions Student unions and associations Environment, Climate Change Clubs Out of School Youths

National Priority 2	Build individual and institutional capacity in climate change mitigation and adaptation							
Identified main gaps		• **Lack of knowledge and skills on climate change in the key sectors** • **Lack of awareness, education and training to deal with the negative impacts of climate change for Zambia to understand local climate better** • **Integrating climate change issues into the national programmes such as health, forestry, agriculture, energy and education is a big challenge due to lack of expertise and financial constraints.**						
Strategic Objective		**To build individual and institutional capacity in climate change mitigation and adaptation**						
Strategy		**Strengthen individual and institutional capacities in climate change mitigation and adaption in the key sectors**						
Priority Sector	**Action**	**[2]Indicative Time Frame**	**Lead Agency**	**Partners**	**Estimated Budget (USD)**	**Potential Source for Resources Mobilization**	**Activities**	**Target Stakeholder/ Sectors**
Energy	Strengthen individual and institutional capacities in climate change mitigation and adaption in energy sector	Medium Term	Ministry of Energy	UN CC: Learn, UNDP, UNESCO, USAID UNITAR, Local Universities	200 000	UNDP, USAID, Treasury, Min. National Development Planning.	2.1 Conduct capacity building training on the fabrication, installation and maintenance of cleaner and energy efficient technologies 2.2 Conduct a series of inhouse and online courses on the use of energy efficient technologies 2.3 Capacitate the energy sector to integrate climate change learning in its activities and plans 2.4 Conduct training in mitigation analysis, vulnerably assessment and	Staff from private and public institutions dealing in energy, Civil Society Organisation, SMEs Artisan working in energy sector

[2] Short term =1-2years; medium term= 3-5 years; long term = 6- 10 years

							MRV *This is a specialized function under the Climate Change Department	
Agriculture	Strengthen the capacity of the Agriculture Training Institutes to be able to integrate climate change in their training programmes	Medium Term	Ministry of Agricultu re	UN CC: Learn, UNDP, UNESCO, Agriculture Based NGOs Private firms that support climate smart agriculture	300,000	UNDP, USAID, Treasury, Min. National Development Planning.	2.1 Training on integration of climate change in agricultural training colleges 2.2 Provide online courses on agriculture and climate change learning 2.3 Conduct training to agriculture institutions to enhance their capacities for community- based climate change adaptation strategies through collaboration with universities in Zambia and e-learning materials from UN CC: Learn	Lecturers and/trainers from agriculture training institutes
Forestry	Strengthen the teaching and learning of climate change at all levels of the forestry sector	Medium Term	MLNR	UN CC: Learn, UNDP, Forestry based NGOs	320000	UNDP, USAID, Treasury, Min. National Development Planning.	2.1 Capacitate the forestry sector through financial and technical support to implement climate change in its policies and programmes (climate change has already been integrated into policies) 2.2 Integrate climate change into the training and research programme at Zambia Forestry College 2.3 Held annual research seminars on climate change and the forestry sector in collaboration with the Copperbelt University 2.4 Provide training to individuals in environmental service, biodiversity and ecosystem	Forestry Department staff Climate Change and Natural Resources Management Department Staff Zambia Forestry College teaching and training staff.

							2.5 Provide scholarships for training in climate change and forestry	Zambia Forestry College Copperbelt University University of Zambia, Copperbelt University & Mulungushi University
Health	Enhance the teaching and learning of climate change at all levels of health education (formal and informal).	Medium Term	Ministry of Health	Tourism and Hospitality Industry, Health Profession Associations- Ministry of Higher Education, Health Professional Council of Zambia	120,000	UN CC Learn; UNDP, USAID, PERPFAR, Treasury	2.1 Carry out a review of the current curriculum for health sector training sub-sectors such as the nursing schools, environmental health practitioners and clinical officers 2.2 Strengthen health educators and trainers' capacities to deliver accurate information and integrate climate change in the training curriculum for nurses and paramedics 2.3 Develop climate change teaching materials for health sector educators	• Ministry of Health, • Colleges of Nursing and Biological Sciences
General Education	Strengthen teachers and teacher educators'	Medium Term	Ministry of General	UN CC: Learn, UNDP, Higher	200,000	UN CC Learn: Treasury, UNESCO, UNDP	2.1 Capacitate Ministry of General Education with skills, knowledge and finances to be enable it to	• Ministry of General Education (Curriculum

	capacities to deliver accurate information, integrate local content, promote critical thinking and take action on climate change mitigation and adaptation in schools		Education Ministry of Higher Education	Education Authority			integrate climate change learning in early childhood education, primary and secondary curricula 2.2 Workshops for curriculum developers and selected teachers on training and teaching materials development for early childhood education, primary and secondary curricula 2.3 Integrating climate change education in the National Continuing Professional Development Framework 2.4 Develop the teaching and learning materials to aid the integrating of climate change learning into education curriculum at various levels (ECE, primary and secondary)	Development Centre) Teaching Council of Zambia Directorate of Standards and Curriculum Directorate of Teacher Education and Specialised Services (TESS) Directorate of Open and Distance Education (DODE). Directorate of Early childhood Education (ECE).
Higher Education	Strengthen instructors' and educators' capacities to deliver accurate information, integrate local content,	Medium Term	Ministry of Higher Education HEA ZQA	UN CC: Learn, UNDP, Higher Education Authority	160, 000	UN CC Learn: Treasury, UNESCO, UNDP	2.1 Capacitate higher education institutions with skills, knowledge and finances to be able to integrate climate change learning in college/university curricula 2.2 Workshop for course designers and developers for learning and teaching	• Ministry of Higher Education • planners Universities colleges

	promote, critical thinking and take action on climate change mitigation and adaptation						support materials on climate change 2.3 Integrating climate change education in the continuing professional development programmes of colleges and universities 2.4 Offer online climate change learning courses (including adapted ones from UN CC: Learn) to university lecturers as part of the CPD programme.	TEVET colleges

National Priority 3		Mainstream climate change learning into national priority sector policies and systems						
Identified main gaps		• **Inadequate climate change information, knowledge and long-term period data to researchers, planners, policy makers and the general public.** • **Mainstreaming climate change into the national programmes such as forestry, agriculture, energy, health and education is a big challenge due to lack of expertise (in some areas) and financial constraints.** • **Lack of climate change teaching and learning materials in primary, secondary schools and tertiary education.**						
Strategic Objective		**Mainstream climate change learning into national priority sector policies and systems**						
Strategy		**Promote mainstreaming of climate change in the sector policies, plans and strategies at all levels of the identified key sectors**						
Priority Sector	**Action**	**[3]Indicative Time Frame**	**Lead Agency**	**Partners**	**Estimated Budget (USD)**	**Potential Source for Resources Mobilization**	**Activities**	**Target Stakeholder/Sectors**
Energy	Develop strategies and policies for mainstreaming	Short term	Ministry of Energy	Ministry of National	120,000	UN CC: Learn, Treasury, Ministry	3.1 Identify policy frameworks, laws and legislation that can be used	Ministry of Agriculture, Ministry of

[3] Short term =1-2years; medium term= 3-5 years; long term = 6- 10 years

	climate change in the energy sector			Development and Planning, Chamber of commerce, mines and industry, Academia		of Finance, EU, world Bank	for mainstreaming climate change into the energy efficiency and renewable energy strategies 3.2 Conduct training workshops/seminars to improve individual and institutional capacity to mainstream climate change in the energy sector 3.3 Train individuals in the energy sector in the development of information kits and tools for mainstreaming climate change in the sector 3.4 Develop private public partnership projects/ funds in mainstreaming climate change.	Commerce and Trade, Ministry of Water Development, Sanitation and Environmental protection
Agriculture	Develop strategies and policies for mainstreaming climate change in the agriculture sectors	Long term	Ministry of Agriculture	UN CC: Learn ZCCN, NGOs in Agriculture	300000	UN CC: Learn, Treasury, Ministry of Development Planning	3.5 Identify policy frameworks, laws and legislation in the agriculture sector that can be used for mainstreaming climate change through a multi-	Ministry of Agriculture senior and middle managers

							stakeholder workshop 2.1 Conduct training workshops/seminars on mainstreaming climate change in the agriculture sector 2.2 Conduct training and develop teaching materials for educators in agriculture training institutes 2.3 Facilitate/commission research on the climate change effect on agriculture productivity 2.4 Develop private public partnership projects/ funds in mainstreaming climate change.	Ministry of Agriculture Training Institutes Lecturers and trainers in agriculture Ministry of Agriculture
Forestry	Develop strategies and policies for mainstreaming climate change in the forestry sector	Long Term	MLNR	UN CC: Learn; UNICEF; UNDP Zambia	220000	UN CC: Learn, Treasury, MLNR Ministry of National Development Planning	3.1 Identify policy frameworks, laws and legislation in forestry sectors that can be used for mainstreaming climate change through a multi-stakeholder workshop/ consultation	MLNR Senior and middle Managers and other stakeholders Forestry Department

							3.2 Conduct training and teaching materials development workshops/seminars for educators in forestry for mainstreaming climate change into the forestry training programmes 3.3 Provide scholarships for training in climate change mainstreaming skills 3.4 Develop information kits and tools for mainstreaming climate change in the forestry sector 3.5 Develop private public partnership projects/ funds in mainstreaming climate change.	Zambia Forestry College Climate Change and Natural Resources Management Department Copperbelt University
Health	Develop strategies and policies for mainstreaming climate change in the health sector	Long term	MOH	UN CC: Learn; UNICEF, UNDP, Treasury, other CPs	200 000	2.1	3.1 Identify policy frameworks, laws and legislation in health sector that can be used for mainstreaming climate change through a multi-stakeholder	Ministry of Health Health Professions Council of Zambia

							workshop/ consultation 3.2 Conduct training and teaching materials for health practitioners and tutors for mainstreaming climate change in health training 3.3 Provide scholarships for training in climate change mainstreaming skills 3.4 Develop information kits and tools for mainstreaming climate change in the health sector 3.5 Develop private public partnership projects/ funds in mainstreaming climate change.	Health training institutes
General Education	Develop strategies and policies for mainstreaming climate change in the general education sub-sector	Long term	Ministry of General Education	UN CC: Learn; UNICEF; UNDP Zambia	300,000	UN CC: Learn, Ministry of Development Planning Treasury, UNICEF, UNDP	3.1 Conduct national multi-stakeholder consultative curriculum review for the ECE, primary, secondary and colleges of education 3.2 Develop the teaching and learning materials	Teachers, teacher educators and education leaders Curriculum specialists and standards officers

						Zambia Office	to aid the mainstreaming of climate change into education curriculum at various levels (ECE, primary, secondary and tertiary education	Civil Society Organisations in the education sector
							3.3 Conduct district and zonal continuing professional development workshops on climate change learning in the ECE, primary and secondary school curriculum	Teacher educators and selected teachers Teachers, curriculum specialist and teacher educators
							3.4 Conduct materials development workshop to develop learners' climate change supplementary materials for ECE, primary and secondary school materials Hold training workshops for teachers to develop scripted lesson plans for teaching climate change in ECE, primary and schools	

Higher Education	Develop strategies and policies for mainstreaming climate change in the higher education sector	Long term	Ministry of Higher Education	UN CC: Learn; UNICEF; UNDP Zambia	150, 000	UN CC: Learn, Ministry of Development Planning Treasury, UNICEF, UNDP Zambia Office	3.1 Conduct a multi-stakeholder consultative curriculum review for the higher education sector on mainstreaming climate change in colleges and university curriculum 3.2 Develop courses (including adaptation/use of UN CC Learn existing online courses) to strengthen the role of universities to implement the adaptation and mitigation of climate change 3.3 Develop the teaching and learning materials to aid the mainstreaming of climate change into universities, TEVET programmes 3.4 Provide fellowships, and scholarships to support post graduates and under graduate	Ministry of Higher Education University Vice Chancellors and Principals University lecturers, and TEVET tutors. Higher Education Loans and Scholarships Board

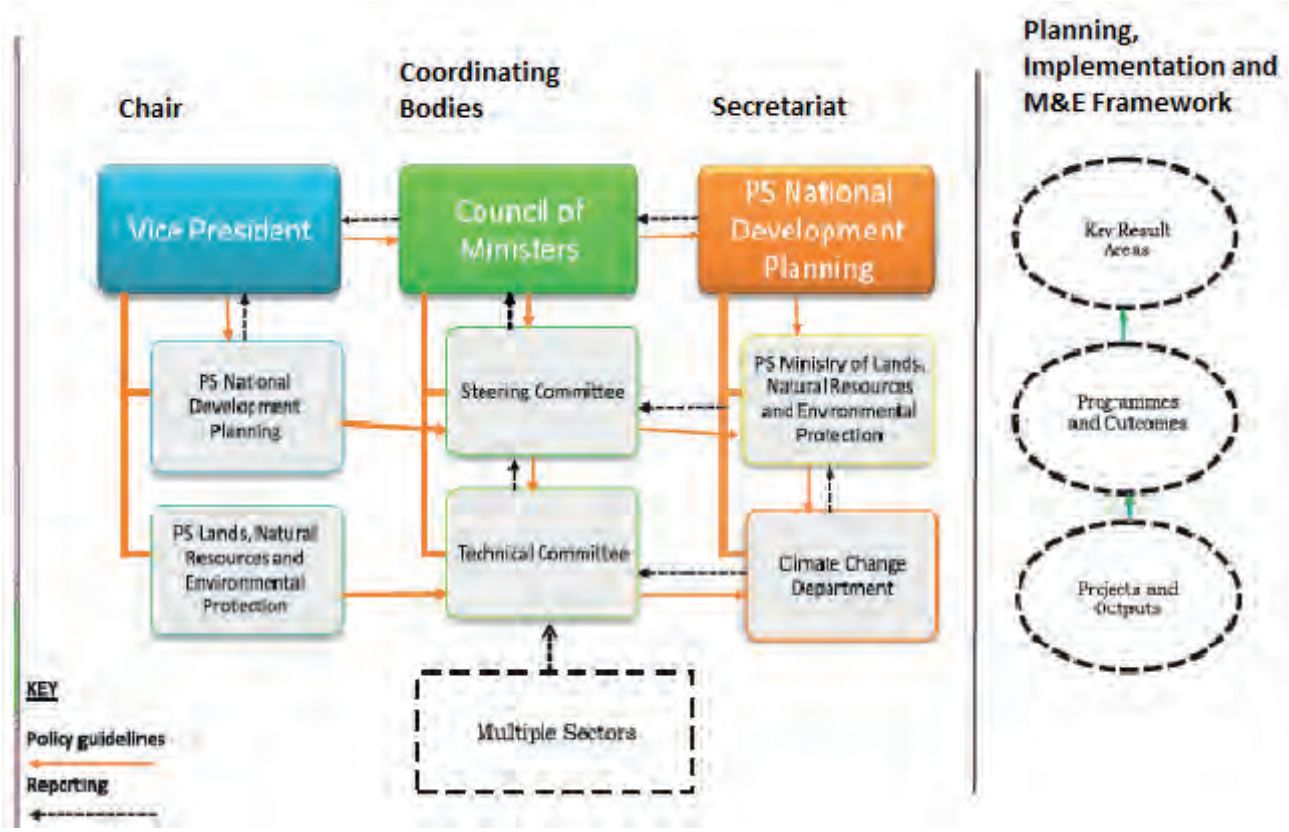
							students undertaking studies in climate change 3.5 Support selected universities and research institutions to become centres of excellence in climate change education	

Chapter 6
Implementation Framework

6.1 Implementation Framework

This Strategy will be implemented through the existing sector-wide structures and coordination mechanism outlined in the National Climate Change Policy. The Policy supports and facilitates a coordinated response to climate change issues in the country. It provides for collaborative efforts by all stakeholders through a coordinating and management structure as shown in Figure 4:

FIGURE 4: A SUMMARY OF NPCC COORDINATING AND MANAGEMENT STRUCTURE



For the purpose of the implementation of the NCCLS, it is proposed to expand the coordination and management structure to include non-traditional members. The additional members are critical to the implementation of this Strategy. Table 6 shows the extended membership of the coordination management structures with each member's roles and responsibilities spelt out

TABLE 6: COORDINATION AND MANAGEMENT - ROLES AND RESPONSIBILITIES

Stakeholder	Roles and Responsibilities under NPCC	Proposed Roles and Responsibilities for NCCLS
Council of Ministers - chaired by the Vice President	The Council of Ministers is the supreme decision-making body for overseeing climate change interventions in the country.	Providing oversight and coordination of the implementation of the NCCLS. Ensuring delivery of funded projects
Steering Committee of Permanent Secretaries - chaired by the Permanent Secretary in the Ministry of National Development Planning	Providing advice (and sometimes making decisions) about changes to the climate change related projects.	The Steering Committee is the main advisory body to the Council of Ministers on policy, programme coordination and implementation. Will advise the Council of Ministers on the NCCLS coordination and implementation Will provide advice, ensure delivery of the NCCLS outputs and outcomes.
The Technical Committee is chaired by the Permanent Secretary, Ministry of Lands and Natural Resources.	Representatives from relevant ministries and other key stakeholders combine their expertise to deal with climate change related issues.	The technical committee will provide technical direction in the implementation of the NCCLS. The committee will be extended to include representatives from the Ministry of General Education and Ministry Higher Education.
Ministry of Lands, and Natural Resources	This is the lead institution in overseeing the implementation of National Policy on Climate Change and other climate change related programmes and activities. It reports to the Steering Committee of Permanent Secretaries.	Providing overall oversight on the implementation of NCCLS, through the CCNRMD which will act as the secretariat of the coordination and management structure. In addition, the MLNR will support the: • raising of awareness on climate change learning in the forestry sector • integrating of climate change learning in the forestry sector policies and programmes • mainstreaming of climate change learning in forestry sector programmes and activities
Ministry of National Development Planning	Responsible for overall coordination and oversight, and mainstreaming of climate change in national development planning processes	• provide overall coordination, of the NCCLS implementation process • ensure that sector outcomes of strategic objectives are integrated in the national planning processes
Ministry of Finance	Responsible for resource mobilisation in line with its mandate. It is responsible for managing the national budget	• Will be responsible for resource mobilisation to support NCCLS implementation

Stakeholder	Roles and Responsibilities under NPCC	Proposed Roles and Responsibilities for NCCLS
	process, and is the conduit for all international climate-related financial inflows.	• Manage and apportion international financial inflows towards the NCCLS implementation
Office of the Vice President - Disaster Management and Mitigation Unit -	Responsible for mobilising and managing resources for disaster response and rehabilitation, including those arising from climate variability make up the bulk of its work.	• Support in the mobilisation and managing resources for NCCLS implementation
Department of Climate Change and Natural Resources Management	• Facilitates effective implementation of NPCC and other programmes associated with climate change. • The Department acts as a Climate Change Secretariat.	• Monitoring the implementation of the NCCLS • Using the NCCLS as a tool for resource mobilisations • Coordination, overall oversight and mainstreaming of climate change learning in national development planning processes, • Collaborate with Ministry of National Development Planning to ensure the NC is integrated in national planning processes
Ministry of Energy	Participates in the NPCC implementation and is part of the coordination and management committee	• Integrating climate change learning in the energy sector policies programmes • Building capacities of energy sector individuals as well as institutions in mainstreaming climate change
Ministry of Agriculture	Part of the NPCC coordinating and management structure	• Raising awareness on climate change learning in the agriculture sector. • Integrating climate change learning in the agriculture sector policies and programmes, including training institutions • Mainstreaming climate change learning in the agriculture sector programmes and activities
Ministry of Health	Was originally not part of the NPCC but relationship between climate change and disease occurrence makes the Ministry an important stakeholder in the implementation of the NPCC	• Has developed NAP for Health and will have a lot of experience to share with the other stakeholders. • Climate change has a lot of effect on the health of individuals

Stakeholder	Roles and Responsibilities under NPCC	Proposed Roles and Responsibilities for NCCLS
Ministry of General Education	Traditionally not part of the NPCC Coordination and Management Structure	• Integrating of climate change into early education, primary, secondary school and colleges of education curriculum through pedagogical processes of teaching and learning • Capacity development for teachers, teacher educators and education leader in climate change learning mainstreaming across the general education system • Development of climate change learning related curricula • Monitoring the implementation of the National Climate Change Learning Strategy through the school system
Ministry of Higher Education	Traditionally not part of the NPCC Coordination and Management Structure	• Integrating climate change learning into higher education and TEVET training and curriculum Monitoring of the implementation of NCCLS in the higher education and TEVET institutions • Promoting and supporting research and innovation around climate change learning in higher education institutions and TEVET • Incorporating climate change learning in Higher Education Authority continuing professional development programmes
Zambia Environmental Management Agency (ZEMA)	Statutory body responsible for ensuring the sustainable management of natural resources and protection of the environment, the prevention of pollution and environmental degradation, the preparation of Environmental Plans for the management and protection of the environment.	• Carrying out Information dissemination, education and public awareness on climate change • Developing environmental education/climate change and awareness programmes for informal and non-formal education, working in collaboration with the MOGE • Collection, production and dissemination of climate change learning information.
Zambia Climate Change Network		• Mobilise network members for information dissemination, public awareness and education • Collaborate with government departments to ensure integration of climate change in network member projects • Coordinate stakeholder engagement on climate change related issues such as advocating, lobbying, campaigning to reduce effects of climate change in Zambia • Provide platform for climate change collaboration for civil society whose interest is in climate change and sustainable development.

Stakeholder	Roles and Responsibilities under NPCC	Proposed Roles and Responsibilities for NCCLS
Media		Working with the five key sectors to disseminate climate change learning information and programmes/activities

6.2 Resource Mobilisation and Funding

The NCCLS implementation will, in the main, be funded through the Republic of Zambia treasury mechanism to the line ministries Energy, MLNR, Health, Agriculture, Higher Education and General Education. However, Swiss Government through UN CC: Learn will provide seed funding for kick-starting the short-term actions. It is also envisioned that the coordination and management team will engage Zambian based corporate companies through their Corporate Social Responsibility (CRS) for funding.

The coordination and management team will need to supplement the government and corporate funding with a range of other alternative sources of funding. These sources of funding may include, but not limited to, multilateral institutions, bilateral climate financing-governmental grants, regional and national funding from developing countries. Climate finance has been a key topic in international climate negotiations especially under the UNFCCC, resulting in a significant commitment by developed countries to increase the flow of climate finance to developing countries to US$100 billion per year by 2020.

Major sources of bilateral and multilateral sources of funding include the multi-donor Climate Investment Fund, held in trust by the World Bank, the Global Environment Facility (GEF), the African Development Bank (AfDB), European Union, USAID, GIZ, Adaption Fund, Green Climate Fund, African Sustainable Forestry Fund, the UNFCCC's Adaptation Fund, and the Kyoto Protocol's Clean Development Mechanism are some of the most important multilateral sources of climate financing at the international level. Others include: UNDP, UNICEF, UNEP; GEF Small Grants Programme and FAO and some regional organisations such as COMESA and SADC.

The Green Climate Fund, which is a financial mechanism of the UNFCCC, is expected to be a major source of climate finance as it will support projects, programmes, policies and other activities in developing country Parties.

Table 7 provides a summary of the total estimate of the amount of money needed to implement this strategy by sector and by national priority.

TABLE 7: SUMMARY OF ESTIMATED COST OF IMPLEMENTING THIS STRATEGY

Sector	Action	Amount (US)
Coordination and Management by CCNRMD	Baseline Survey	700, 000
	Mid Line Evaluation	800,000
	End line Survey	1,000,000
	Coordination Meetings with Implementers	100,000
	Monitoring	1,000,000
	Subtotal	**3,600,000**
Agriculture	Sensitisation and awareness raising on climate change in agriculture	580 000
	Strengthen the capacity of the Agriculture Training Institutes to be able to integrate climate change in their training programmes	300,000
	Develop strategies and policies for mainstreaming climate change in the agriculture sectors	300,000
	Subtotal	**1,180,000**
Energy	Sensitisation and awareness raising on climate change in the energy sector	1,500,000
	Strengthen individual and institutional capacities in climate change mitigation and adaption in energy sector	200 000
	Develop strategies and policies for mainstreaming climate change in the energy sector	120,000
	Subtotal	**1,820,000**
Forestry	Sensitisation and awareness raising on climate change in forestry	250,000
	Strengthen the teaching and learning of climate change at all levels of the forestry sector	320,000
	Develop strategies and policies for mainstreaming climate change in the forestry sector	220,000
	Subtotal	790,000
Health	Sensitisation and awareness raising on climate change in health	200,000
	Enhance the teaching and learning of climate change at all levels of health education (formal and informal)	120,000
	Develop strategies and policies for mainstreaming climate change in the health sector	200,000
	Subtotal	**520,000**
General Education	Sensitisation and awareness raising on climate change education	200,000
	Strengthen teachers and teacher educators' capacities to deliver accurate information, integrate local content, promote critical thinking and take action on climate change mitigation and adaptation in schools	200,000
	Develop strategies and policies for mainstreaming climate change in the general education sub-sector	300,000

Sector	Action	Amount (US)
	Subtotal	**700,000**
Higher Education	Sensitisation and awareness raising on climate change education.	200 000
	Strengthen instructors' and educators' capacities to deliver accurate information, integrate local content, promote, critical thinking and take action on climate change mitigation and adaptation	160,000
	Develop strategies and policies for mainstreaming climate change in the higher education sector	150,000
	Subtotal	**510,000**
	GRAND TOTAL	**9,120,000**

6.3 Evaluation Framework

Performance of the implementation of this Strategy will be ascertained by ensuring continuous monitoring and regular evaluations of the set-out action plans and their respective indicators, which include anticipated outcomes from the interventions. Accountability will ensure compliance with set standards and results against planned activities/targets which will be responsive to the demands and expectations of the national leadership, citizenry as well as donors. Above all, M&E will ensure continuous and conscious involvement of key stakeholders by transparently sharing results, ideas, views and perspectives thereby enhancing collaborative learning. Such learning from both successes and failures will entail replicating best practices and willingness to change course of action where necessary.

Monitoring mechanisms will be put up by respective sectors and agencies responsible for data collection as shown on the M&E Framework. The M&E Framework outlines key indicators of progress by objective as a guide for specified data collecting agencies. The indicators, together with operational issues, shall be tagged to the National Management Monitoring System (NMMS) to ensure easy accountability and reporting. Capacity building activities will be organized in Measurement, Reporting and Verification (MRV) of climate change interventions for the core M&E points of contacts. Quarterly financial and progress reports will be expected from each implementing sector/agency. Furthermore, annual progress reports will be consolidated to feed into review mechanisms of the Climate Change Learning Strategy. In order to have a standard against which all subsequent changes from implementation of the strategy will be measured, a baseline survey will be conducted at the beginning of the strategy. This will include a desk review as some baseline measures are found in historical data.

In mid-2025 a Mid-Term Evaluation will be conducted to assess the extent to which the set objectives would have been achieved. A Final Evaluation for the Strategy will be conducted towards the end of 2030 in order to assess the overall achievements or failures against set goals,

and lessons thereof, thereby feeding into redesigning of future interventions for the country. These evaluations will be conducted by independent evaluators, who will be engaged by the lead agency.

The MLNR as lead agency, will be responsible for coordinating all M&E activities across the various sectors and partners. Mechanisms will be put in place for regular flow of information, and its management, from implementing sectors and agencies to the Department of Climate Change and Natural Resources Management under MLNR. Sectoral and agency focal point persons for M&E will be expected to submit timely and quality data and reports for consolidation. Monitoring and Evaluation results will be presented to the Technical Committee on Climate Change for decision-making. Further, the Technical Committee on Climate Change will present strategic results and recommendations to the Council of Permanent Secretaries.

Finally, high level results and recommendations will be presented to the Council of Ministers on Climate Change for policy level decisions. Hence, the M&E function will enhance feedback mechanisms both upwards to top political leadership and downwards to the citizenry. Each level should learn from M&E and make necessary adjustments as they share their results with other levels. The use and dissemination of M&E results will be essential to ensure learning on climate change. It is envisaged that such M&E mechanisms from the lowest levels of implementation to the highest levels of decision-making will result in actualizing climate change learning for the country and beyond.

Monitoring and Evaluation Framework

Sector	Indicator		Means of Verification		Indicative Time Frame	Lead Agency
	Output	Outcome	Output	Outcome		
Strategic Objective 1: Raise awareness and strengthen climate change knowledge at all the selected sectors i.e. energy, forestry, agriculture and education						
Energy	1.1 Number of general public campaigns/exhibitions conducted on the use of energy efficient technologies	1.1a Percentage of households (segregated by sex) using energy efficient technologies 1.1b Capacity of installed renewable energy plants	Reports, Attendance registers, photos	Living Conditions Monitoring Survey	Short Term	Ministry of Energy
	1.2 Number of conducted demonstrations	1.2a Number of users (segregated by sex) per energy efficient technology 1.2b Proportion of households (segregated by sex) using alternative clean fuels (solar, wind, biogas, etc.)	Attendance registers, reports, photos	Energy audit reports Living Conditions Monitoring Survey	Short Term	
Forestry	1.1 Number of outreaches, talk shows, adverts and awareness campaigns conducted on the effects of climate change on deforestation	1.1 Area of forests affected by different climate change related processes or agents (pests, diseases, fire, and flooding, among others)	Attendance registers, reports, photos	Forestry Reports	Short Term	Ministry of Lands and Natural Resources, Forestry Department
	1.2 Number of training workshops conducted on sustainable forest management practices	1.2 Carbon stock and carbon stock changes in forest biomass, forest soils and in harvested wood products	Attendance registers, training programme, reports, photos	Forestry Reports	Short Term	
	1.3 Number of schools conducting tree planting activities	1.3 Percentage of schools with tree nurseries	Attendance registers, seminar programme, reports, photos	Forestry Reports	Short Term	

Sector	Indicator		Means of Verification		Indicative Time Frame	Lead Agency
	Output	Outcome	Output	Outcome		
				School Preventive Maintenance Reports School Preventive Maintenance Record Book		
	1.4 Number of schools & communities with tree nurseries	1.4 Hectares of land planted with trees	Annual Reports	Annual Reports	Short Term	
	1.5 Number of training, workshops, seminars on Result Based Payments under the REDD+ Programme	1.5 Number of Private and Community players in REDD+ programmes	Reports, Photos	Annual Reports	Short Term	
Agriculture	1.1 Number of promotional messages on successful climate smart agriculture projects/initiatives produced on media	1.1 Percentage of beneficiaries (segregated by sex) adopting climate smart agriculture message s	Scripts, reports	Agriculture reports	Short Term	Ministry of Agriculture
	1.2 Number of field days conducted at farms carrying out climate smart agricultural activities	1.2 Percentage of farmers (segregated by sex) implementing climate smart agricultural activities	Reports, photos	Agriculture reports	Short Term	
	13 Number of established community radio listening groups that are listening to sustainable agricultural practices	1.3 Percentage of farmers (segregated by sex) implementing sustainable agricultural practices	Reports, photos	Agriculture reports	Short Term	
	1.4 Number of farmers (segregated by sex) holding insurance policies for climate risk insurance	1.4 Percentage of households (segregated by sex) holding insurance policies for climate risk insurance	Reports	Agriculture reports	Short Term	
Health	1.1Number of national health practitioners' workshops held	1.1 Percentage of health institutions and practitioners carrying out public awareness campaigns on the effect of climate change on health	Reports, photos	Ministry of Health Reports	Short Term	Ministry of Health

Sector	Indicator		Means of Verification		Indicative Time Frame	Lead Agency
	Output	Outcome	Output	Outcome		
	1.2 Number of health institutions represented in the national workshop	1.2 Number of institutions displaying climate change posters and campaign materials	Reports, photos	Ministry of Health Reports	Short Term	
General Education	1.1a Number of youth climate change dialogue platforms created		Reports		Short Term	Ministry of General Education,
	1.1b Number of youths (segregated by sex) participating in climate change dialogues		Attendance registers, reports, photos		Short Term	
	1.1c Number of face to face competitions held for youth on climate change	1.1c Number of best practices in climate change mitigation and adaptation implemented by youth	Attendance registers, reports, photos	Quarterly reports	Short Term	
	1.1d Number of social media engagements held for youth on climate change mitigation and adaptation	1.1d Increase in percentage of participants (segregated by sex) taking part in the competitions	Reports		Short Term	
	1.2 Number (by type) of Information, Education and Communication materials developed and disseminated	1.2 Number of IEC materials used in schools	IEC materials, reports	Quarterly reports	Short Term	
	1.3 Number of schools with climate change clubs	1.3 Percentage of schools with climate change clubs	Reports	Quarterly reports	Short Term	
Higher Education	1.1 Number of climate change seminars and public lecture or fora held	1.1 a. Number of climate change papers presented 1.1b Number of university/college courses infusing climate change	Course Outlines Conference reports	Quarterly Reports	Short Term	Ministry of Higher Education
	1.2 Number of academic/ conference papers on climate change published per higher education institutions	1.2 Number of published academic or conference papers on climate change	Course Outlines Reports Journal articles	Quarterly Reports	Short Term	
	1.1 Number of Global Climate Change Weeks commemorated	1.3a Number of students, policy makers and wider community (segregated by sex) demonstrating	Event Reports Media articles	Quarterly Reports	Short to Medium Term	

Sector	Indicator		Means of Verification		Indicative Time Frame	Lead Agency
	Output	Outcome	Output	Outcome		
	1.2 Number of youth climate change dialogue platforms created	the need to take action against climate change 1.3b Increased media information dissemination of climate change information				
Strategic Objective 2: Individual and Institutional Capacity Building						
Energy	2.1 Number of capacity building trainings on the fabrication, installation and maintenance of cleaner and energy efficient technologies held	2. Number of energy sector employees (segregated by sex) effectively managing and monitoring their respective organisation's energy	Attendance registers, reports, photos	Energy audit reports	Medium-Long Term	Ministry of Energy
	2.2 Number of organisations operating appropriate and new energy efficient technologies	2.2 Percentage of organisations operating appropriate and new energy efficient technologies	Reports Photos	Energy audit reports	Medium – Long Term	
	2.3 Number of individuals (segregated by sex) trained on the use of cleaner and more efficient energy technologies and reduce the fossil fuel consumption	2.3 Number of users (segregated by sex) per energy efficient technology2	Attendance registers, reports, photos	Energy audit reports	Medium-Long Term	
	2.4 Number of energy sector institutions trained on integration of climate change learning in their policies and programmes2	2.4 Number of new policies and programmes on integration of climate change learning implemented	Attendance registers, reports, photos	Energy audit reports	Medium-Long Term	
	2.5 Number of individuals (segregated by sex) trained in climate change mitigation analysis, vulnerability and assessment and MRV	2.5 Number of individuals (segregated by sex) with built capacity in climate change mitigation analysis, vulnerability and assessment and MRV	Attendance registers, reports, photos	Mid-term evaluation report	Medium-Long Term	
Forestry	2.1 Number of Forestry sector individuals (segregated by sex) trained in integration of climate change learning in policies and programmes	2.1 Number of new policies and programmes integrated with climate change learning developed	Attendance registers, reports, photos	Forestry reports	Medium-Long Term	Ministry of Lands and Natural Resources

Sector	Indicator		Means of Verification		Indicative Time Frame	Lead Agency
	Output	Outcome	Output	Outcome		
	2.2 Number of individuals (segregated by sex) with enhanced capacity to integrate climate change learning in forestry training and research	2.2 Number of forestry courses integrating climate change	Attendance registers, reports, photos	Forestry College reports	Medium-Long Term	
	2.3 Number of institutions with enhanced capacity to integrate climate change learning in forestry training and research	2.3 Number of researches successfully completed on integrating climate change learning in forestry	Attendance registers, reports, photos	Research publications, Forestry College reports	Medium-Long Term	
	2.4 Number of individuals (segregated by sex) trained in the environmental service, biodiversity and ecosystem	2.4 Number of beneficiaries (segregated by sex) on carbon markets	Attendance registers, reports, photos	Forestry reports	Medium-Long Term	
	2.5 Number of scholarships for training in climate change and forestry provided	2.5 Number of graduates (segregated by sex) in climate change and forestry	Training reports	Training reports	Medium-Long Term	
Agriculture	2.1 Number of individuals from agriculture training institutes trained in integration of climate change learning in policies and programmes	2.1 Number of new policies and programmes on integration of climate change learning developed	Attendance registers, reports, photos	Agriculture reports	Medium-Long Term	Ministry of Agriculture
	2.2 Number of Short- term courses/seminars conducted for agriculture trainers/extension officers on climate change learning	2.2 Percentage of agriculture trainers/extension officers (segregated by sex) trained on climate change learning	Attendance registers, reports, photos	Agriculture reports	Medium-Long Term	
	2.3 Number of long-term courses/seminars for agriculture trainers/extension officers on climate change learning		Attendance registers, reports, photos		Medium-Long Term	
	2.4 Number of agriculture institutions with enhanced capacity for community-based adaptation strategies	2.4 Number of community-based adaptation strategies implemented	Reports	Mid-term and Final evaluation reports	Medium-Long Term	

Sector	Indicator		Means of Verification		Indicative Time Frame	Lead Agency
	Output	Outcome	Output	Outcome		
Health	2.1 Number of sector training curriculum reviewed and revised	2.1 Number of health training programmes offering climate change content	Course/programme outlines	Mid – term and final reports	Mid – Long Term	Ministry of Health
	2.2 Number of trainers (segregated by sex) trained to deliver climate change integrated health programmes	2.2 Number of new health programmes integrated with climate change	Course/ programme outlines	Mid – Term and final reports	Mid to Long Term	
	2.3 Number and types of climate change teaching materials developed	2.3 Number of climate change teaching materials rolled out and being used in health education and training institutions	Materials developed	Mid-term review and final evaluation	Mid to Long Term	
General Education	2.1 Climate change learning integrated in the education curricula at all levels	Number of ECE, primary and secondary school syllabi and subjects integrated with climate change issues	Curriculum, reports	Curriculum, reports	Medium-Long Term	Ministry of General Education,
	2.2 Number of curriculum developers and teachers (segregated by sex) trained in climate change mainstreaming in the ECE, primary and secondary school curriculum	2.11c Number of climate change embedded subjects rolled-out in to support adaptation and mitigation	Materials developed, reports	Quarterly reports	Medium-Long Term	Ministry of General Education
	2.3 Climate change integrated Continuing Professional Development Framework	2.3 Continuing Professional Development Framework content includes climate change	Materials developed, reports	Quarterly reports	Medium-Long term	Ministry of General Education Ministry of Higher Education
	2.4Number of teaching and learning resource materials developed on climate change for early childhood education centres, primary, and secondary schools	2.12b Number and types of teaching and learning resource materials taught on climate change for early childhood education centres, primary and secondary schools	Materials developed and disseminated, reports	Quarterly reports	Medium-Long term	

Sector	Indicator		Means of Verification		Indicative Time Frame	Lead Agency
	Output	Outcome	Output	Outcome		
Higher Education	2.1 Number of higher education institutions (HEI) integrating climate change in their institutional curriculum and academic programmes	2.1 Number of HEI with mainstreaming climate change using their local resources	Reports	Quarterly Reports	Medium to Long term	
	2.2 Number of HEI mainstreaming climate change budgets and plans	2.2 Number of HEI implementing the mainstreaming of climate change in their institutions	Reports	Quarterly Reports	Medium to Long term	
	2.3 Number of universities and research institutes with enhanced capacity as centres of excellence in climate change	2.3 Number of publications by universities and research institutions on climate change learning	Reports	Research publications Quarterly Reports	Medium _to Long Term	Ministry of Higher Education
Strategic Objective 3: Mainstreaming of climate change learning into national education systems						
Energy	3.1a Number of individuals (segregated by sex) with improved capacity to mainstream climate change learning in the energy sector	3.1a Number of energy institutions with mainstreamed climate change learning	Attendance registers, reports, photos	Energy audit reports	Medium-Long Term	Ministry of Energy
	3.1b Number of institutions with improved capacity to mainstream climate change learning in the energy sector	3.1b Proportions of annual greenhouse gas concentrations	Reports	Energy audit reports	Medium-Long Term	
		3.1c Number of industries adopting green and efficient production technologies		Energy audit reports	Medium-Long Term	
	3.2a Number of training workshops conducted on mainstreaming of climate change learning into energy sector continuing professional development programmes	3.2c Number of climate change learning mainstreaming into the energy sector continuing professional development programmes	Attendance registers, reports, photos	Energy audit reports	Medium-Long Term	

Sector	Indicator		Means of Verification		Indicative Time Frame	Lead Agency
	Output	Outcome	Output	Outcome		
	3.2b Number of seminars held on mainstreaming of climate change learning into energy sector continuing professional development programmes		Attendance registers, reports, photos		Medium-Long Term	
	3.3a Number of scholarships offered for training in climate change	3.3 a Number of scholarships for pursuing climate change learning	Reports Registers	Energy sector Reports	Long Term	
Forestry	3.1 Number of training workshops conducted for lecturers on mainstreaming climate change learning into forestry training programmes	3.1 Number of forestry institutions of learning with mainstreamed climate change learning	Attendance registers, reports, photos	Forestry reports	Medium-Long Term	
	3.2 Number of seminars conducted for lecturers on mainstreaming climate change learning into forestry training programmes		Attendance registers, reports, photos		Medium-Long Term	
	3.3 Number of training workshops conducted on mainstreaming climate change learning into the forestry sector continuing professional development programmes	3.3 Number of climate change learning mainstreaming into the forestry sector continuing professional development programmes	Attendance registers, reports, photos	Forestry reports	Medium-Long Term	
	3.4 Number of kits and tools developed for mainstreaming climate change learning into the forestry sector continuing professional development programmes		Attendance registers, reports, photos		Medium-Long Term	

Sector	Indicator		Means of Verification		Indicative Time Frame	Lead Agency
	Output	Outcome	Output	Outcome		
Agriculture	3.1 Number of training programmes developed on mainstreaming climate change learning into agriculture training programmes	3.1 Number of training programmes implemented on mainstreaming climate change learning into agriculture training programmes	Attendance registers, reports, photos	Mid-Term and Final evaluation reports	Medium-Long Term	Ministry of Agriculture
	3.2 Number of training workshops conducted on materials development for agriculture training colleges/institutes on climate change mitigation and adaptation	3.2 Number of materials developed by agriculture training colleges/institutes on climate change mitigation and adaptation	Attendance registers, reports, photos	Agriculture reports	Medium-Long Term	
	3.3 Number of individuals from agriculture training colleges/institutes (segregated by sex) trained on materials development in climate change mitigation and adaptation		Attendance registers, reports, photos		Medium-Long Term	
	3.4 Number of research activities related to climate change learning conducted in agriculture training colleges and research institutions	3.4 Number of research publications on climate change learning published by agriculture training colleges and research institutions	Reports	Research publications, Agriculture reports	Medium-Long Term	
	3.5 Number of kits and tools developed for mainstreaming climate change agricultural sector continuing professional development programmes	3.5 Number of agricultural programmes mainstreamed with climate change	Attendance registers, reports, photos	Agriculture reports	Medium-Long Term	
Health	3.1 Number of training programmes developed on mainstreaming climate change learning into health training programmes	3.1 Number of training programmes implemented on mainstreaming climate change learning into health sciences training programmes	Attendance registers, reports, photos	Mid-Term and Final evaluation reports	Medium-Long Term	Ministry of Health

Sector	Indicator		Means of Verification		Indicative Time Frame	Lead Agency
	Output	Outcome	Output	Outcome		
	3.2 Number of training workshops conducted on materials development for health training colleges/institutes on climate change mitigation and adaptation	3.2 Number of materials developed by health sciences training colleges/institutes on climate change mitigation and adaptation	Attendance registers, reports, photos	Ministry of Health reports	Medium-Long Term	
	3.3 Number of individuals from health training colleges/institutes (segregated by sex) trained on materials development in climate change mitigation and adaptation	Percentage of individuals from training colleges/institutes (segregated by sex) trained on materials development on climate change, mitigation and adaptation	Attendance registers, reports, photos	Ministry of Health reports	Medium-Long Term	
	3.4 Number of research activities related to climate change learning conducted in health training colleges and research institutions	3.4 Number of research publications on climate change learning published by health sciences training colleges and research institutions	Reports	Research publications, Health reports	Medium-Long Term	
	3.5 Number of kits and tools developed for mainstreaming climate change in the health sector continuing professional development programmes	3.5 Number of health programmes mainstreamed with climate change	Attendance registers, reports, photos	Health reports	Medium-Long Term	
General Education	3.1 Number of national multi-stakeholder consultative curriculum reviews for the ECE, primary, secondary and colleges of education held	3.1 Number of syllabi and subjects mainstreamed with climate change	Reports	Research publications, Quarterly reports	Medium-Long Term	Ministry of General Education
	3.2 Number of teaching and learning materials infused with climate change messages developed	3.2 Percentage of teaching and learning materials being used in ECE, primary and secondary schools	Reports	Mid-term and Final evaluation reports, Quarterly reports	Medium-Long Term	
	3.3a Number of districts and zonal continuing professional development workshops on	3.3a Climate change learning taught in ECE centres, primary and secondary schools	Curriculum, reports	Quarterly reports	Medium-Long Term	

Sector	Indicator		Means of Verification		Indicative Time Frame	Lead Agency
	Output	Outcome	Output	Outcome		
	climate change mainstreaming conducted. 3.3b Number of teachers for ECE, primary and secondary schools (segregated by sex) trained in climate change mainstreaming in their school levels	3.3b percentage of teachers (segregated by sex) with skills and knowledge on how to mainstream climate change in teaching				
	3.4 a Number of climate change materials development workshops held 3.4b Number of teaching and learning materials developed to aid the mainstreaming of climate change Learning into education curriculum at various levels	3.4 Number of teaching and learning materials rolled-out to aid the mainstreaming of climate change Learning into education curriculum at various levels	Materials developed, reports	Quarterly reports	Medium-Long Term	
	3.5a Number of training sessions to develop scripted lesson plans for teaching climate change in ECE, primary and secondary schools held 3.5b Number of scripted climate change lesson plans developed	3.5 Proportion of sponsored teachers (segregated by sex) contributing to climate change scripted lessons plan development at school, zonal and district levels	Reports	Mid-term and Final evaluation reports, Quarterly reports	Medium-Long Term	
Higher Education	3.1 Number of national multi-stakeholder consultative curriculum reviews for the universities and TEVET colleges held	3.1 Number of university and college programmes mainstreamed with climate change offered	Reports	Mid-term and Final evaluation reports, Quarterly report	Medium to Long Term	Ministry of Higher Education
	3.2 Number of climate change courses (including adaptation/use of UN CC Learn existing online courses) developed to strengthen the role of universities to	3.2a Higher education institutions offering climate change courses and programmes	Reports Course outlines	Reports Course outlines	Long Term	

Sector	Indicator		Means of Verification		Indicative Time Frame	Lead Agency
	Output	Outcome	Output	Outcome		
	implement the adaptation and mitigation of climate change	3.2b Percentage of online programmes for climate change offered in HEI increase				
	3.3a Number of teaching and learning materials to aid the mainstreaming of climate change into universities, TEVET programmes developed 3.3b Number of lecturers and tutors (by gender) trained in materials development	3.3a Number of teaching and learning materials rolled-out to aid the mainstreaming of climate change Learning into education curriculum at various levels 3.3b Number of lecturers with capacity to deliver climate change courses increases	Reports Photos Attendance Registers	Mid-term and Final evaluation reports, Quarterly reports	Medium to Long term	
	3.4 Number of fellowships, scholarships provided to support undergraduate, post graduate students (segregated by sex) to improve climate change mitigation and adaptation	3.4 Proportion of sponsored graduates (segregated by sex) contributing to climate change mitigation and adaptation	Reports	Mid-term and Final Evaluation reports, Quarterly reports	Medium to Long term	
	3.5 Number of HEI and research institutions that become climate change learning centres of excellence	3.5 Proportion of climate change programmes and research output	Reports	Reports	Medium to Long term	

References

African Union. 2007. Declaration on Climate Change and Development in Africa. Eighth Ordinary Session, 29- 30 January 2007 (http://www.sirtewaterandenergy.org/docs/DeclarationClimateChange-AddisAbaba.pdf)
UNICEF Publication (Undated) (https://www.unicef.org/publications/files/CFS_Climate_E_web.pdf),
Ministry of Lands and Natural Resources (2016) National Policy on Climate Change. MLNR.

CIF. 2019. Zambia Building A Resilient Future: Transformational Change Case Study. Climate Investment Funds

IPCC, 2014: *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland.

Jain, S. 2007. An empirical economic assessment of impacts of climate change on agriculture in Zambia", Policy Research Working Paper No. 4291, The World Bank Development Research Group, Washington D.C.

Ministry of General Education. 2013. *National Curriculum Framework*. Ministry of General Education, Zambia.

Ministry of Tourism, Environment and Natural Resources (MTENR). 2011. *The Economics of Climate Change in Zambia*. MTENR, February 2011.

Ministry of Tourism, Environment and Natural Resources (MTENR). 2007. Formulation of the National Adaptation Plan of Action (NAPA) on Climate Change. Final Report. MTENR.

UNITAR 2018. Guidance Note for Developing a National Climate Change Learning Strategy: Strengthening Human Resources and Skills Advance Green, Low Emission and Climate Resilient Development – United Nations Institute for Training and Research (UNITAR) Please update with the latest (2018) version:
https://www.uncclearn.org/sites/default/files/inventory/guidance_note_en_digital_compressed.pdf