REPUBLIC OF ZAMBIA

NATIONAL GREEN GROWTH STRATEGY
2024 - 2030

Prepared by;

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NATIONAL GREEN GROWTH STRATEGY

2024 -2030

FOREWORD

The Government of the Republic of Zambia (GRZ) has resolved to transition the country to a green economy. This is because the economic growth attained so far towards the vision of becoming a prosperous middle-income nation by the year 2030, has come at great cost to the environment, ecosystems and natural resources. Economic growth has also not been inclusive as total poverty remains persistently high and income inequality, as measured by the Gini Coefficient, is very high compared to the vision 2030 target. Additionally, greenhouse gas emissions are on an upward trajectory while the economy is highly vulnerable to shocks including climate change, commodity prices and pandemics.

In this regard, the National Green Growth Strategy (GGS) has been formulated to promote development pathways that lead to Zambia's transition to a low-carbon, resource efficient, resilient and socially inclusive economy by 2030. Implementation of the GGS will accelerate the attainment of the aspirations of Zambia's Vison 2030 and the Eighth National Development Plan (8NDP), and the commitments made in Zambia's NDC to the Paris Agreement and National Biodiversity Strategy and Action Plan. Additionally, execution of the interventions in the GGS will present Zambia with additional opportunities for creation of green jobs and will increase resilience to shocks and enable the country to seize the business opportunities from new and emerging markets, both nationally and internationally.

The GGS is anchored on four pillars, namely: resilient and climate compatible growth; enhanced resource efficiency; enhanced natural capital; and improved inclusivity. In addition, the GGS has provided interventions on enabling conditions envisaged to unlock the rigidities to greening growth in Zambia including strengthening the policy and regulatory framework; enhancing the mobilisation of financial resources; strengthening human and technical capacity; and enhancing research, technology and innovation capacity.

Implementation of the GGS will require the support and concerted efforts of all stakeholders. In this vein, emphasis will be placed on collaboration between the public and private sector, cooperating partners, civil society organisations, the academia and indeed all Zambians in the execution of the GGS. We shall also ensure that the GGS is executed in a coherent manner at both national and sub-national levels.

With support from all, we will be able to transition Zambia to a low-carbon, resource efficient, resilient and socially inclusive economy for this generation and those to come.

Hon. Eng. Collins Nzovu, MP
MINISTER OF GREEN ECONOMY AND ENVIRONMENT

April, 2024

ACKNOWLEDGEMENTS

The preparation of the National Green Growth Strategy for Zambia is a culmination of collective work that could not have been completed without the participation and concerted efforts of various stakeholders. Let me mention that the National Green Growth Strategy was formulated through a highly consultative and participatory process, involving stakeholders at national and sub-national levels and across all sectors of the Zambian economy.

I therefore wish to thank all organisations that contributed to this process. Special thanks go to the Minister of Green Economy and Environment, Hon. Eng. Collins Nzovu, MP, who provided valuable strategic guidance and focus in the preparation of the Strategy. I would also like to express my deepest appreciation to all government line ministries, agencies, and provinces; the private sector; civil society organisations; academic and research institutions; and the media for their active participation in the formulation and awareness-raising on the National Green Growth Strategy.

Additionally, I would like to express gratitude to our all-weather cooperating and development partners including the Global Green Growth Institute (GGGI), the United Nations Office for Project Services (UNOPS), the Nationally Determined Contribution Partnership (NDC P), the European Union Delegation to Zambia and COMESA, the United Nations Development Programme (UNDP), the Common Market for Eastern and Southern Africa (COMESA), the World Bank, CGIAR Focus Climate Security and the CGIAR Climate Resilience Initiative, and the International Labour Organisation for the technical, material and financial support rendered during the development of the Strategy.

Last but not the least, sincere appreciation goes to the Techincal Working Group and the members of staff in the Ministry of Green Economy and Environment for their hard work and for providing technical and logistical support in the process of developing the National Green Growth Strategy.

Douty Chibamba, PhD
PERMANENT SECRETARY
MINISTRY OF GREEN ECONOMY AND ENVIRONMENT

April, 2024

CONTENTS

LIST OF ACRONYMS

8NDP	Eighth National Development Plan
AfDB	African Development Bank
AFOLU	Agriculture, Forestry and other Land Use
AU	African Union
BoZ	Bank of Zambia
CAGs	Cluster Advisory Groups
CBU	Copperbelt University
CDF	Constituency Development Fund
CGIAR	Consultative Group on International Agricultural Research
COMESA	Common Market for Eastern and Southern Africa
CPG	Cooperating Partners Group
DDCC	District Development Coordinating Committee
FISP	Farmer Input Support Programme
GDP	Gross Domestic Product
GEM	Green Economy Model
GFMWG	Green Finance Mainstreaming Working Group
GGGI	Global Green Growth Institute
GGI	Green Growth Index
GGS	Green Growth Strategy
GHG	Greenhouse Gas
GMA	Game Management Area
ILO	International Labour organisation
IMF	International Monetary Fund
IPPU	Industrial Processes and Product Use
IVM	Integrated Vector Management
IWRM	Integrated Water Resources Management
MEAs	Multilateral Environmental Agreements
MGEE	Ministry of Green Economy and Environment
MIHUD	Ministry of Infrastructure, Housing and Urban Development
MLGRD	Ministry of Local Government and Rural Development
MLNR	Ministry of Lands and Natural Resources
MLSS	Ministry of Labour and Social Security
MoA	Ministry of Agriculture
MoE	Ministry of Energy
MoFNP	Ministry of Finance and National Planning
MSMED	Ministry of Small and Medium Enterprise Development

MSMEs	Micro, Small and Medium Enterprises
MTR	Mid Term Review
MTS	Ministry of Technology and Science
MWDS	Ministry of Water Development and Sanitation
NAP	National Adaptation Plan
NDC	Nationally Determined Contribution
NDCC	National Development Coordinating Committee
NDCP	Nationally Determined Contribution Partnership
NPCC	National Policy on Climate Change
OECD	Organisation for Economic Cooperation and Development
PDCC	Provincial Development Coordinating Committee
PPU	Provincial Planning Unit
RESAP	Renewable Energy Strategy and Action Plan
RTSA	Road Transport and Safety Agency
SADC	Southern African Development Community
SDGs	Sustainable Development Goals
SEC	Securities and Exchange Commission
SSA	Sub-Saharan Africa
TWG	Technical Working Group
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNZA	University of Zambia
WB	World Bank
WDC	Ward Development Committee
WEFE	Water Energy Food Ecosystems
ZEMA	Zambia Environmental Management Agency
ZESCO	Zambia Electricity Supply Corporation
ZIPAR	Zambia Institute for Policy Analysis and Research

GLOSSARY OF TERMS AND DEFINITIONS

Artisanal and small-scale miners:	Individuals or groups engaged in mining activities on a small scale, often using basic tools and methods, typically with limited capital and resources.
Biennial Update Report:	A report submitted by countries to the United Nations Framework Convention on Climate Change (UNFCCC) every two years, providing information on their greenhouse gas emissions, climate change impacts, and mitigation and adaptation actions.
Circular economy:	An economic model that aims to minimise waste, maintain the value of products and materials in the economy for as long as possible, and promote recycling, reusing, and remanufacturing.
Climate change:	Long-term shifts in weather patterns and temperatures due to human activities, primarily the emission of greenhouse gases.
Climate Change Adaptation:	The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects.
Climate Change Mitigation:	A human intervention to reduce the sources or enhance the sinks of greenhouse gases.
Climate, Peace and Security:	The security social implication of climate change and impacting opportunities for peace and security dynamics which recognises the effects of climate change on social transformation.
Climate-related Peace and Security Risks:	The risks that emerge from the intersection of socio-ecological-economic and political dimensions driven by climate change.
Climate variability:	The variations in the mean state and other statistics of the climate across all spatial and temporal scales beyond that of individual weather events.
decarbonisation:	The process by which countries or other entities aim to achieve a low-carbon economy, or by which individuals aim to reduce their consumption of carbon.

Early Warning System:	The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organisations threatened by a hazard to prepare to act promptly and appropriately to reduce the possibility of harm or loss.
Economic growth:	The increase in a country's production of goods and services over time, and is measured by the change in the volume of its output or in the real incomes of its residents.
Ecosystem:	A functional unit consisting of living organisms, their non-living environment and the interactions within and between them.
Ecotourism:	A form of tourism that involves responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education.
Gini Coefficient:	Measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution.
Green Economy:	An economy that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities.
Green Growth:	Growth that ensures that natural assets continue to provide the resources and environmental services on which human well-being relies.
Greenhouse gases:	Gases that trap heat in the Earth's atmosphere and contribute to global warming and climate change.
Green Jobs:	Employment created in economic sectors and activities, which reduces environmental impact and ultimately brings it down to levels that are sustainable.
MSMEs:	Small-scale businesses or enterprises that have a limited number of employees, lower revenue or capital, and operate on a smaller scale compared to large corporations.
Monomodal rainfall patterns:	Rainfall patterns characterised by a single predominant rainy season in a year.

MEAs:	International agreements or treaties that aim to address specific environmental issues, such as climate change, biodiversity conservation, and desertification.
Natural capital:	Assets that occur in nature and that provide environmental functions or services.
NDC:	A country's commitment under the Paris Agreement on climate change, outlining its efforts to mitigate greenhouse gas emissions and adapt to climate change.
Resource efficiency:	Economic efficiency and the environmental effectiveness with which an economy or a production process is using natural resources.
Sustainable development:	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
Vulnerable Groups:	Women, children, the youth, people with disabilities, people living with HIV/AIDS and the aged.
WEFE:	The interconnectedness and interdependencies between water, energy, food, and ecosystems.

INTRODUCTION

1. INTRODUCTION

1.1 BACKGROUND AND CONTEXT

Zambia, with a territory covering 752,612km^2 of land, is richly endowed with natural wealth including agricultural land, mineral deposits such as copper, cobalt, manganese, gold and gemstones, wildlife and fisheries, forestry and water resources that can be harnessed to grow and transform its economy. The country's population grew at an average annual rate of 3.4 percent between 2010 and 2022, an increase from 2.8 percent in the 2000-2010 intercensal period. As of 2022, the population size was 19,610,769 people comprising 9,603,056 males and 10,007,713 females with 11,766,141 people representing 60 percent of the population residing in rural areas while 7,844,628 people representing 40 percent of the population reside in urban areas as shown in Figure 1. Additionally, Zambia's population is youthful and fairly literate and the country is centrally located with eight (8) neighbouring countries that serve as an expanded market for its goods. The country also has strong democratic credentials which are essential in speeding up the development process and it enjoys the status of being an oasis of peace and stability on the African continent having seen three (3) peaceful transitions of political power.

FIGURE 1: POPULATION SIZE BY RURAL/URBAN AND SEX, ZAMBIA 2022
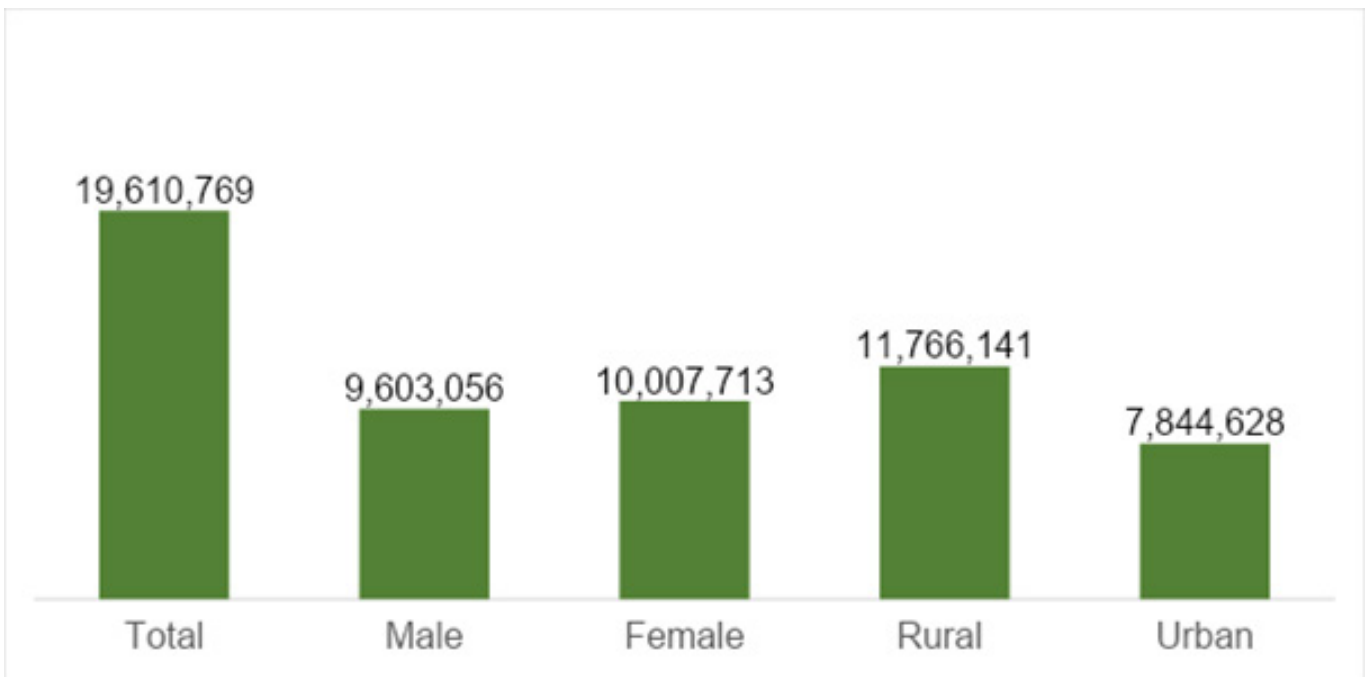
Source: Preliminary Report, 2022 Census of Population and Housing

However, the country's development path has faced several structural and policy challenges as well as external factors which have locked the economy on a slow and often unsustainable development trajectory. Between 2005 and 2022, Zambia's economic growth rate averaged just over 5 percent driven by wholesale and retail trade, mining, construction and transport sectors which are largely non-renewable sectors with weak linkages to the rest of the economy. The Zambian economy is also very vulnerable to external shocks as 75 percent of foreign exchange earnings are generated from the mining sector, entailing that any adverse changes to the mining commodity prices negatively impacts the current account. Additionally, the economy is highly vulnerable to food and energy inflation, climate change, and pandemics as evidenced by

the outbreak of the COVID-19. Also worth noting is that between 2012 and 2021, the country unsustainably borrowed from both the domestic and foreign markets and is currently saddled with a debt burden in excess of its gross domestic product (GDP). This notwithstanding, Government has reached an agreement for debt treatment with the view of rendering Zambia's debt burden sustainable.

While the average economic growth rate generated between 2005 and 2022 is seemingly robust exceeding 5 percent per annum, it has not been inclusive as Zambia's total poverty increased to 60 percent with 48 percent of the population classified as extremely poor in 2022 compared to 54.4 percent and 40.8 percent recorded for total poverty and extreme poverty in 2015, respectively. These poverty levels are by far greater than the Vision 2030 target of less than 20 percent and are mostly attributed to inadequate access to decent jobs and income generating activities. With respect to income inequality, as measured by the Gini Coefficient, it reduced to 0.507 in 2022 from 0.546 in 2015. Despite this reduction, Zambia's income distribution is still very unequal and is greater than the Vision 2030 target of a Gini Coefficient of less than 0.40.

Further, the growth has come at great cost to the environment, ecosystems and natural resources as the country experienced alarming deforestation rates which rose to 172,000 ha per annum in 2021 from 120,000 ha in 1994. In addition, emissions of greenhouse gases (GHGs) rose by 47 percent to 126,758 $GgCO_2eq$ in 2016 from 86,063$GgCO_2eq$ in 1994 while climate change induced floods and droughts have become more intense, prolonged and expansive in coverage. The 2020 University of Notre Dame Global Adaptation Initiative index ranked Zambia as the 41st most vulnerable country to the impacts of climate change out of 182 countries.

Against this background, the National Green Growth Strategy has been developed to place Zambia on a low-carbon, resilient, resource efficient and socially inclusive pathway. The National Green Growth Strategy will build upon interventions on green growth already being implemented in various sectors and will be utilised as a tool for attaining a green economy and ultimately, sustainable development. Implementing green growth interventions contained in the National Green Growth Strategy will also provide an avenue for catalysing Zambia's quest to attain the aspirations of the country's Vision 2030, the Eighth National Development Plan (8NDP), the Sustainable Development Goals (SDGs), the Nationally Determined Contribution (NDC) to the Paris Agreement, the Kunming-Montreal Global Biodiversity Framework, the Global Framework on Chemicals, the African Union's Climate Change Strategy and Green Recovery Plan, and the Southern African Development Community's (SADC) Green Economy Strategy and Action Plan.

1.2 ZAMBIA CONTEXT DEFINITION OF GREEN GROWTH

Green growth is a multidimensional concept that espouses a low-carbon, resource efficient, resilient and socially inclusive development trajectory. It is a new growth model introduced primarily by international organisations during the Rio+20 Summit in 2012. Green growth provides a practical and flexible approach for achieving concrete, measurable progress across the economic and environmental aspects of development, while taking full account of the social consequences of economic growth. It is agreed that implementation of green growth actions contributes to the attainment of a green economy and ultimately, sustainable development. Therefore, green growth is not a substitute for sustainable development but rather an approach for accelerating the achievement of sustainable development.

While no universal definition for green growth exists, various definitions have been proposed by different organisations as outlined in table 1 below:

TABLE 1: SELECTED DEFINITIONS OF GREEN GROWTH

Source	Definition
Global Green Growth Institute (GGGI)	"Green growth is a development approach that seeks to deliver economic growth that is both environmentally sustainable and socially inclusive".
World Bank (WB)	".......growth that is efficient in its use of natural resources, clean in that it minimises pollution and environmental impacts, and resilient in that it accounts for natural hazards and the role of environmental management and natural capital in preventing physical disasters".
Organisation for Economic Cooperation and Development (OECD)	"Green growth means fostering economic growth and development, whilst ensuring that natural assets continue to provide the resources and environmental services on which our wellbeing relies".
African Development Bank (AfDB)	"Green growth is the promotion and maximisation of opportunities from economic growth through building resilience, managing natural assets efficiently and sustainably, including enhancing agricultural productivity and promoting sustainable infrastructure".

The Zambian context definition of green growth is, "a model of development that promotes low carbon and resilient economic growth, social inclusion and human well-being, and efficient use of resources." This definition was synthesised from the four (4) definitions of green growth from the GGGI, the WB, the OECD and the AfDB, but contextualised to Zambia.

This definition of green growth guided the development of the National Green Growth Strategy.

1.3 RATIONALE FOR GREENING GROWTH IN ZAMBIA

Zambia seeks to sustainably develop and wishes to identify the critical economic growth model that can fast-track the attainment of the development aspirations espoused in various national policies. Additionally, the country wishes to contribute to the global agenda on sustainable development and is a Party to various Multilateral Environmental Agreements (MEAs) such as the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD) and the United Nations Convention to Combat Desertification (UNCCD). Therefore, embarking on a green growth development pathway has been informed by both national aspirations and the need to contribute to the global agenda on sustainable development.

The National Constitution (Amendment Act No. 2 of 2016) provides for and promotes ecologically sustainable development through the protection, conservation and sustainable utilisation of natural resources and forbids wastefulness, among others. Zambia's overarching development framework, the Vision 2030, also emphasises development that is anchored on sustainable environment, ecosystems and natural resource management principles. Additionally, the 8NDP has a pillar dedicated primarily to efforts aimed at promoting environmental sustainability. This pillar highlights several constraints and identifies economy-wide policy reform areas that need to be undertaken to achieve environmental sustainability objectives in the medium term with the ultimate goal to strengthen the policy and regulatory framework including on green growth to foster a transition toward a modern green economy development path.

In 2015, Zambia adopted the 2030 Agenda for Sustainable Development with the accompanying Sustainable Development Goals (SDGs) including goals 12, 13 and 15 on sustainable consumption and production, climate action and life on land, respectively. Further, in 2016, Zambia ratified the Paris Agreement on Climate Change and submitted the Nationally Determined Contribution (NDC) with commitment to achieve an estimated total GHG emission reduction of 38,000GgCO2eq which translates to 47 percent,

with substantial international support, compared to 20,000GgCO2eq which translates to 25 percent, under domestic efforts with limited international support, against 2010 as a base year.

Also, Zambia's renewable natural resources are critical to national wealth, but they have been declining over time. In 2014, natural capital contributed to about 40 percent of Zambia's total wealth with 73 percent of this coming from renewable natural capital including protected areas, pastureland, cropland, and forests. The country's impressive economic growth rate in the period 2005 to 2022 was scored largely by the utilisation of natural capital. However, economic growth has been achieved against the backdrop of alarming rates of environmental degradation, erosion of the wildlife resource, deforestation, forest degradation, land degradation, pollution and unsustainable fishing, that are likely to reverse the attained gains. Notable is the worsened air pollution with fine particulate matter at PM2.5.

Compared to other lower middle income countries, Zambia has extremely low agricultural land productivity and water use efficiency that further hinder the capacity of small-scale farmers to mitigate and adapt to climate change impacts, while there is increasing competition over scarce land and water resources. Against this backdrop, climate-induced loss of income and livelihoods exacerbate poverty and vulnerabilities, and increasingly incentivise maladaptive behavior and negative coping mechanisms.

Therefore, Zambia's adoption of a green growth model is seen as an avenue for accelerating the attainment of the provisions of the National Constitution, the aspirations of the Vision 2030 and the 8NDP, Zambia's contribution to the attainment of the 2030 Agenda for Sustainable Development, the African Union (AU) Agenda 2063 and the commitments made in Zambia's NDC to the Paris Agreement. Adopting a green growth model also presents the country with additional opportunities for the creation of green jobs and will increase resilience to the multiple and cascading risks that the country is experiencing, such as the unfavourable impacts of climate change. Green growth will also enable the country to seize the business opportunities from new and emerging markets, both nationally and internationally. Furthermore, businesses across the economy can make savings through increased energy- and resource-efficiency.

1.4 GREEN GROWTH STRATEGY FORMULATION PROCESS

The National Green Growth Strategy was developed over a period of 23 months, from May 2022 to March 2024, and the Minister of Green Economy and Environment provided overall oversight on the Strategy formulation process. The preparation of the Strategy also made use of the institutional structures for the coordination of climate change, namely the Steering Committee of Permanent Secretaries and the Technical Committee. As necessary, the development of the National Green Growth Strategy utilised the institutional coordination structures for development planning such as the National Development Coordinating Committee (NDCC) and the Cluster Advisory Groups (CAGs). At subnational level, the institutional coordination structures for development planning namely, the Provincial Development Coordinating Committees (PDCCs), were employed to obtain inputs and feedback on the development of the Strategy. Other fora such as the Cooperating Partners Group (CPG) were used for detailed engagement with cooperating and development partners on the preparation of the Strategy.

The formulation of the National Green Growth Strategy was coordinated by the Ministry of Green Economy and Environment (MGEE) and it was spearheaded by a Technical Working Group (TWG) comprising officers from the MGEE, the Ministry of Finance and National Planning (MoFNP), the Ministry of Agriculture (MoA), the Ministry of Energy (MoE), the Ministry of Water Development and Sanitation (MWDS), the Bank of

Zambia (BoZ), the Securities and Exchange Commission (SEC), the Zambia Institute for Policy Analysis and Research (ZIPAR), the University of Zambia (UNZA) and the Copperbelt University (CBU). The preparation of the Strategy involved engagement of various stakeholders including the Government line ministries, the private sector, civil society organisations (CSOs) and the academia mostly through the already outlined platforms such as the Steering Committee of Permanent Secretaries, and the Technical Committee on Climate Change; the NDCC and associated CAGs; the PDCCs; and the CPG.

The Strategy development process had five phases outlined below and as shown in Figure 3:

(a) Inception phase;
(b) Green growth diagnosis and assessment phase;
(c) Drafting phase;
(d) Validation phase; and
(e) Launch phase.

INCEPTION PHASE

The inception phase involved the conceptualization of the formulation of the Green Growth Strategy. During this phase the roadmap indicating milestones and timelines as well as mapping of stakeholders to be utilised for consultations on the Strategy, was undertaken. Additionally, the interdisciplinary and multistakeholder Technical Working Group (TWG) to spearhead the formulation of the Strategy was appointed. The TWG had representation from key Government line ministries, research and academic institutions, financial sector regulators, and CSOs to ensure the development of a credible National Green Growth Strategy. The concept note on the preparation of the National Green Growth Strategy was the main deliverable of this phase.

GREEN GROWTH DIAGNOSIS AND ASSESSMENT PHASE

Under this phase, a diagnosis of Zambia's needs and gaps in the context of green growth, including selecting sectors, identifying strengths, weaknesses, opportunities and risks, and understanding available baseline data on green growth was undertaken. A green growth situation assessment was conducted on key sectors to establish needs, and relevant best practices to drive green growth forward. Additionally, a Green Economy Model (GEM) that helped to identify the priority sectors and focus areas within the prioritised sectors with potential to drive green growth, was developed. Furthermore, a National Green Growth Index (GGI) was developed for tracking progress in the implementation of green growth investments and for benchmarking the country's performance against other countries across the world. The GEM and the GGI reports were the main deliverables of this phase.

DRAFTING PHASE

This phase involved the compilation of the Strategy document based on the prioritised sectors and focus areas within the prioritised sectors. The TWG convened several times to draft and refine the National Green Growth Strategy. The deliverable for this phase was the draft National Green Growth Strategy for Zambia.

VALIDATION PHASE

Countrywide validation of the draft Green Growth Strategy was undertaken. At national level, the National Green Growth Strategy was subjected to a national stakeholders' validation workshop. In the same vein, at the subnational level, meetings involving provincial representatives from key sectors were held to validate the Strategy. The main deliverable of this phase was the validated draft Green Growth Strategy for Zambia.

LAUNCH PHASE

After the validation, the National Green Growth Strategy was finalised and thereafter, launched.

The main deliverable of this phase was the approved National Green Growth Strategy.

FIGURE 2: STRATEGY DEVELOPMENT PHASES

KEY ACTIVITIES DURING THE FORMULATION OF THE GGS

Inception Phase
- Conceptualization of the GGS
- Roadmap with milestones and timelines
- Appointment of Consultant
- Stakeholders mapping
- Appointment of TWG
- Concept note

Green Growth Diagnosis and Assessment Phase
- Green growth situation analysis/stock take
- Green growth performance measurement (Zambia Green Growth Index)
- Green economy modelling

Drafting Phase
- Drafting sessions (5 held)
- Compilation of the GGS document
- Zero and First Draft Green Growth Strategy for Zambia

Launch Phase
- Approved GGS for Zambia
- Printing of the approved GGS
- Launch

Consultation and Validation Phase
- Circulation of GGS to stakeholders for comments
- Provincial consultations
- National validation

1.5 STRUCTURE OF THE GREEN GROWTH STRATEGY

The National Green Growth Strategy is structured in five chapters as follows: Chapter One is the introduction which provides the background and context for greening growth in Zambia as well as the National Green Growth Strategy formulation process; Chapter Two provides the sectoral situation analysis and identifies the challenges and opportunities for greening growth in Zambia; Chapter Three gives a scenario analysis and the economic benefits of Green Growth while Chapter Four highlights what it will take to transition Zambia to a green economy and articulates the Vision and the strategic objectives as well as the theory of change for greening growth. Chapter Five to Chapter Eight breaks down the strategic objectives into development outcomes and interventions while Chapter Nine presents the enabling environment for greening growth in Zambia. The implementation and coordination arrangements, including the monitoring and evaluation framework of the Strategy, are discussed in Chapter Ten. The National Green Growth Strategy comes complete with an Implementation Plan which is in Annex One of the document.

GREEN GROWTH SITUATION ANALYSIS

Chapter Two
GREEN GROWTH SITUATION ANALYSIS

2.1. OVERVIEW

The green growth situation analysis involved the review of policy documents and empirical data from 2005 to 2022. Information and data outside this period was, as necessary, cited for explanation and comparison of sectoral green growth performance trends where information or data for a specific variable was unavailable within the stipulated period.

The green growth situation analysis examined the trend and character of Zambia's economic growth since the preparation of the Vision 2030. It assessed the interaction between economic growth and the environment and was focused on the sectors envisaged to drive economic growth as well as those expected to adversely affect the environment during the 8NDP period and beyond. Additionally, the green growth situation analysis highlights the sectoral achievements scored as well as the challenges and opportunities for greening growth in Zambia. Furthermore, it provides the baseline upon which the vision, the strategic objectives, the outcomes and strategies/interventions of the National Green Growth Strategy are anchored.

2.2. ECONOMIC GROWTH

Zambia's gross domestic product (GDP) grew by an average of 5.3 percent per annum between 2005 and 2022 which was below the Vision 2030 target to attain and sustain an annual real GDP growth rate of between 6 and 10 percent. Out of the 18 years towards the realisation of the Vision 2030, the economic growth rate was below the Vision target for 11 years while it was within or above the Vision target for only seven (7) years as depicted in **Figure 3**.

FIGURE 3: ZAMBIA'S GDP GROWTH RATE BETWEEN 2005 AND 2022

Source: Zambia Statistics Agency
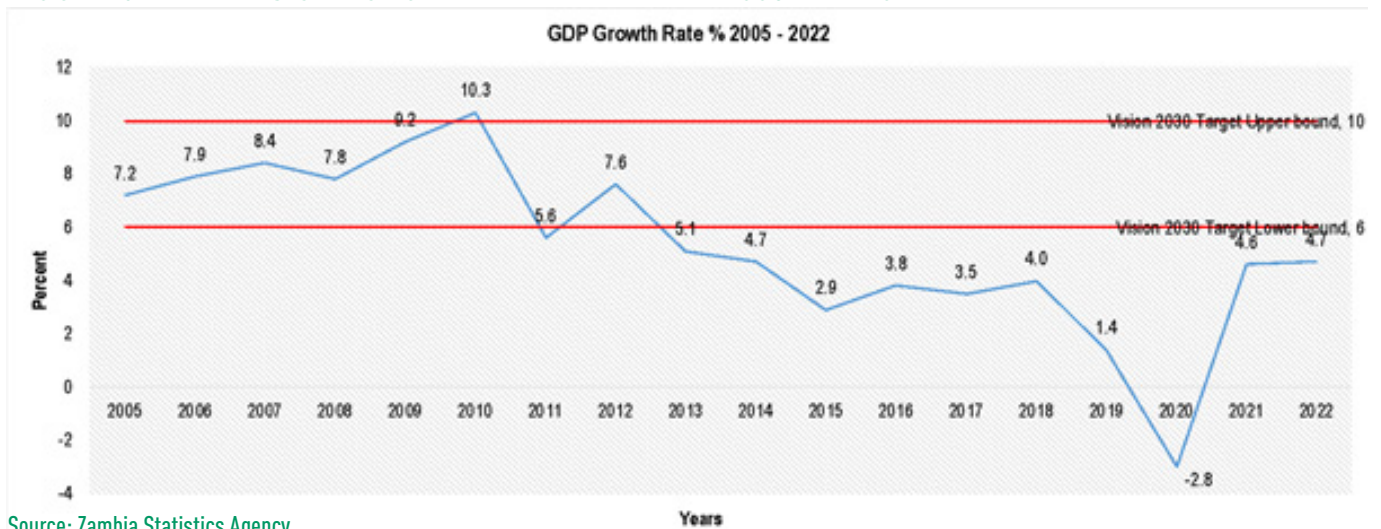
Between 2005 and 2010, annual real GDP growth rate was strong, averaging 8.5 percent, with the highest annual growth rate registered at 10.3 percent in 2010. However, during the 2011 to 2016 period, the economic growth rate slowed down, and averaged 4.9 percent. Economic growth slowed down further during the period 2017-2022 with the real growth rate averaging 2.6 percent. Worth noting is the 2.8 percent contraction of the economy in 2020, the first recession since 1998.

Analysis of economic growth during the period 2005 to 2022 reveals that it has not been consistently strong and has been driven by sectors which are largely non-renewable with weak linkages to the rest of the economy such as wholesale and retail trade, mining, construction and transport sectors. Economic growth has also not been resilient as it has been adversely affected by falling copper prices and insufficient rains caused by climate change leading to declines in agricultural output and hydro-electric power generation, and the COVID-19 pandemic which led to disruptions in supply chains in sectors such as tourism, construction, wholesale and retail trade as well as manufacturing.

Economic growth has also been attained using the resources sub-optimally as evidenced by the extremely low agricultural land productivity and water use efficiency. Additionally, Zambia's renewable natural resources including agricultural land, protected areas and forests, wildlife and fisheries which are critical for the generation of national wealth, have been declining in quantity over time.

Further, economic growth has not been socially inclusive as 60 percent of the population nationally live in poverty with 48 percent of the population living in extreme poverty. The situation is even worse in rural areas where an estimated 78.8 percent are classified as poor. On the other hand, despite income inequality as measured by the Gini Coefficient reducing to 0.507 in 2022 from 0.546 in 2015, it remains far greater than the Vision 2030 target of a Gini Coefficient of less than 0.40.

Transitioning Zambia to a green economy entails changing the character of economic growth to one that is resource efficient, resilient, low carbon and socially inclusive. It means fostering robust growth while enhancing the interaction between the environment and the economy and creating green jobs. This is the economic growth Zambia will pursue in the 2024 to 2030 period during the implementation of the National Green Growth Strategy.

2.3. CLIMATE CHANGE

Climate change has become a major threat to sustainable development in Zambia as evidenced in mean annual temperatures that have increased by $1.3C^0$ while the mean annual precipitation has been decreasing at an average rate of 1.9mm per month since 1960. Agriculture, water, energy, health, and infrastructure have been negatively impacted, thus affecting the food and water security, water quality, energy and livelihoods of the people, especially in rural communities.

Extreme weather events have exacerbated poverty levels of the over 60 percent of the population, particularly in rural areas, that depend mainly on rain-fed agriculture for their livelihoods. The rural poor have experienced crop failures and death of livestock thus resorting to maladaptive strategies including deforestation for charcoal production, early child marriages and sexual exploitation for women and girls to access basic commodities as well as various crimes to sustain their livelihoods. These dynamics, coupled with increasing competition over the availability of and access to natural resources, such as water and/or land, compounds the potential climate-driven risks to peace and stability.

Climate change also threatens Zambia's sustainable development with direct and indirect implications for human security especially for vulnerable groups. It can also worsen existing human security challenges and/or instigate new ones by limiting access to crucial resources like water, food, and arable land. Consequently, this may lead to economic deprivation, institutional inefficiencies, inequality, and gender disparities. With projections indicating increasing global warming, the drivers of human insecurity and instability are likely to increase and impact social cohesion across the country.

The health sector is also not spared as there is expansion of disease vector habitats for malaria, bilharzia and increased incidences of cholera, typhoid and dysentery, putting pressure on the health care system. Additionally, existing and planned infrastructure projects are also at risk, due to more frequent and severe floods.

The impacts of climate change, such as floods and droughts, over the last 30 years, are estimated to have cost the Zambian economy US$13.8 billion in GDP losses. With extreme weather events projected to increase in intensity and frequency, the impact could rise to 0.9 percent of GDP over the next decade. The 2022 World Bank Green Resilient and Inclusive Development Diagnostic for Zambia has shown that in the absence of mitigation and adaptation policies, climate change is expected to reduce Zambia's GDP by about 6 percent by 2050.

Zambia is the 41st most vulnerable country and has, therefore, prioritised adaptation to ensure the building of resilience of the economy and communities to the impacts of climate change. However, GHG emissions rose by 47 percent to 126,758 GgCO$_2$eq in 2016 from 86,063GgCO$_2$eq in 1994 bringing prominence to mitigation and the need to embark on a low-carbon development trajectory. On the other hand, total emissions removals reduced from -142,929.2 GgCO$_2$eq. in 1994 to -136,266 Gg CO$_2$eq.in 2016 representing a decline of 4.7 percent. In terms of sector GHG emissions, the agriculture, forests and other land use (AFOLU) was the highest at 93 percent followed by energy at 5.08 percent while the emissions from industrial processes and product use (IPPU) and waste were 1.65 percent and 0.26 percent, respectively as depicted in **Table 2**.

TABLE 2: GHG EMISSIONS BY SECTOR (GGCO2EQ)

Year	Total	AFOLU	Energy	IPPU	Waste
1994	86,063	82,990	2,174	431	205
2000	102,004	98,947	1,744	1,091	223
2005	106,967	103,175	2,159	1,376	257
2010	120,604	115,425	3,159	1,621	310
2016	126,758	117,887	6,444	2,091	336

Source: Zambia's First Biennial Update Report to the UNFCCC

To address climate change impacts, among others, Zambia has put in place policies including the National Policy on Climate Change (NPCC), the NDC and the National Adaptation Plan (NAP) and is preparing legislation on climate change. In the NDC, Zambia made a commitment to achieve an estimated total GHG emission reduction of 38,000GgCO$_2$eq which translates to 47 percent, with substantial international support, compared to 20,000GgCO$_2$eq which translates to 25 percent, under domestic efforts with limited international support, against 2010 as a base year.

To build a low-carbon and climate resilient economy, Zambia needs to enhance the implementation of both adaptation and mitigation actions including strengthening the institutional and technical capacity as well as improving green and climate change resource mobilisation.

2.4. AGRICULTURE

The agricultural sector holds enormous potential for contribution to Zambia's economic diversification and green growth agenda. The country is endowed with a large natural resource base for agricultural production including plenty of freshwater and 32 percent of land that is classified as agricultural. It accounts for 23.6 percent of Zambia's employed population and provides livelihood to more than 70 percent of Zambia's population particularly those in rural areas. Over the period 2005 to 2022, the agricultural sector's share of GDP averaged 7.6 percent as depicted in Figure 4.

FIGURE 4: AGRICULTURE SHARE OF GDP, 2005 TO 2022

Agric Sector Share of GDP, 2005 to 2022
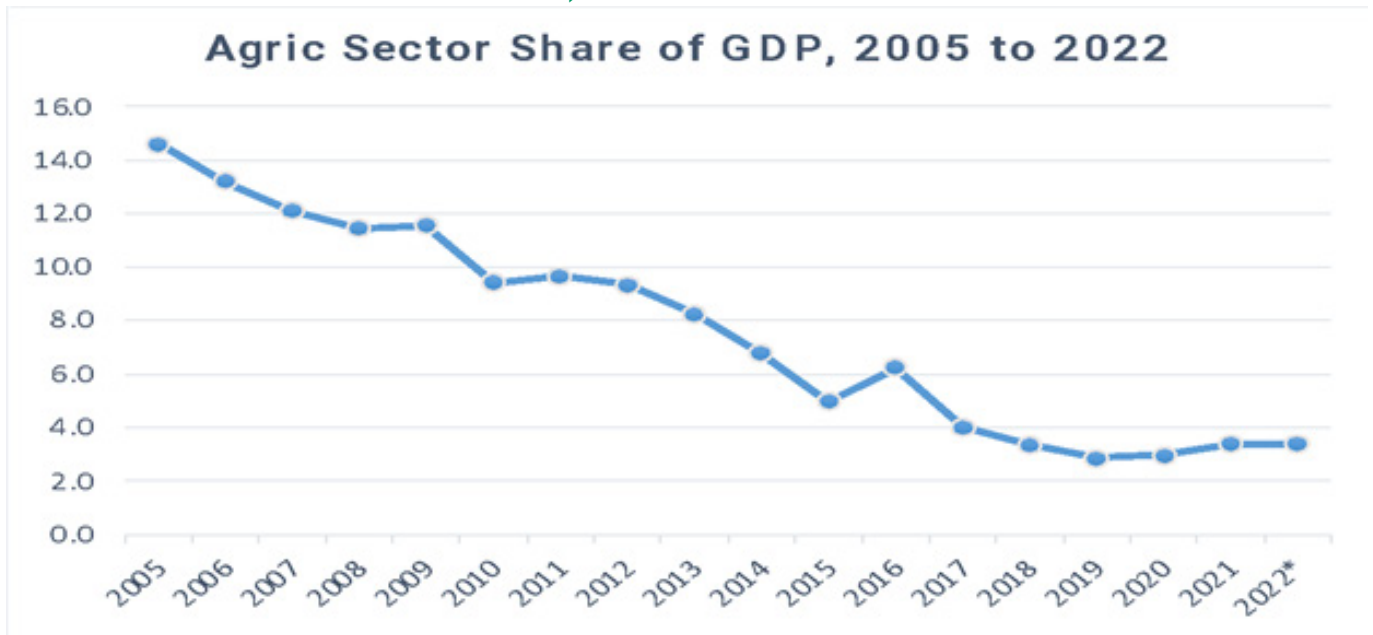
Source: Zambia Statistics Agency

Despite its potential, the contribution of the agriculture sector to economic growth has remained limited. Between 2000-2019 annual average real agricultural growth in Zambia contracted by 1.2 percent compared to 4.3 percent growth in the same period in Sub-Saharan Africa (SSA). Agriculture is mainly rain-fed with only 155,912 hectares out of the 2,750,000 hectares of irrigable land under irrigation mainly by large scale commercial farmers. It is also dominated by small-scale farmers that produce 85 percent of food crops, employ unsustainable farming methods which deplete natural resources and degrade soils, and that are largely non-mechanised. The sector is also undiversified, with maize grown on 57 percent of arable land, making farmers vulnerable to both environmental and market shocks. Additionally, agricultural land productivity and the productivity of agricultural labour are extremely low with the value added per worker declining to US$544 in 2018 from US$860 in 2000.

The use of inorganic fertilisers in the agricultural sector increased by 314 percent since the early 2000s driven by the Farmer Input Support Programme (FISP), the main farmer subsidy programme. In 2018 Zambia consumed 52.5 kilogrammes of inorganic fertilizer per hectare of arable land compared to 20 kilogrammes per hectare in SSA. Despite the increased inorganic fertilizer use, the cereal yields declined from 2.5 metric tonnes per hectare in 2010 to 2.2 metric tonnes per hectare in 2018.

Climate change continues to adversely affect the agriculture sector due to heavy dependence on rainfall and consequently, has significant food security implications as it increases crop failure, livestock morbidity

and mortality because of reduced availability of forage, increased disease incidences and a breakdown of livestock infrastructure. In the fisheries sub-sector, extreme temperature changes in the aquatic environment affect the breeding and feeding behavior of fish, thereby resulting in significant negative effect on the species composition and recruitment. In addition, emerging issues such as aquatic annual diseases, environmental degradation, as well as introduction and translocation of invasive species affect growth of the fisheries sub-sector (Jacob Mwitwa, 2018).

In seasons when the country has experienced droughts, the agricultural growth rates and, in turn, the sector's contribution to GDP have consistently declined. Evidence from economy-wide modeling assessments suggest that climate variability is estimated to reduce agricultural growth by 1 percent per year and under worst-case rainfall scenarios, the annual GDP growth rate of agriculture is expected to be reduced by 1-2 percent by 2050.

Climate variability and change further compound the productive capacity of small-scale farmers and producers as increasing dry spells and erratic rainfall patterns diminish crop yields and pasture lands. This, combined with low access to climate resilient practices and lack of means to diversify income streams, has contributed to increasing outward migration to regions with more fertile land, which in turn increases tensions around land in the receiving communities.

Although Zambia is not a significant emitter of GHGs globally, agriculture is a major contributor primarily due to land conversion through expansion of cropland and grassland. Unsustainable agricultural practices and activities such as deforestation, poor pasture and livestock manure management, burning of vegetation for fertilisation, and the use of inorganic fertilisers, all exacerbate the contribution of the sector to climate change. Agriculture, forestry and other land use (AFOLU) account for 93 percent of the total GHG emissions.

For the agriculture sector to effectively contribute to the country's green growth agenda, Zambia needs to continue integrating sustainable agriculture beyond the 8NDP and the NDC, and into the country's agriculture policy agenda including at sub-national level. There is need for sensitisation among farmers on soil health, as well as need for the sector to intensify land and labor productivity. Additionally, there is need to diversify away from maize, whilst integrating climate smart technologies given the monomodal rainfall patterns of the country. Further, land tenure and land rights need to be enhanced.

2.5. MINING

The mining sector, characterised by both large-scale and artisanal and small-scale miners, plays a significant role in Zambia's development and has been identified as a driver of economic growth in the 8NDP. It covers the production of multiple minerals including copper, cobalt, gold, nickel, manganese, gemstones and coal, and accounts for 17.5 percent of GDP, over 70 percent of foreign exchange earnings and about 30 percent of government revenue. The sector's contribution to economic growth is poised to increase with the proposed expansion of copper production to three (3) million metric tonnes per annum by 2031 from the current average of 800,000 metric tonnes production per annum. Despite the sector's significant contribution to economic growth, it only accounts for a paltry 8 percent to national employment and is therefore not as socially inclusive mainly because of weak linkages to the rest of the economy.

The sector contributes significantly to adverse environmental impacts such as land degradation, deforestation and forest degradation, and loss of biodiversity. Mining generated wastelands occupy large tracts of land across the country with millions of tonnes of waste rock, overburden and tailings material with limited to no vegetation cover. Metallurgical processing facilities are the main sources of heavy metal pollution which make soils acidic with mean pH around 4.6 and elevated Copper, Zinc, Cobalt and Lead concentrations. Lead pollution from legacy mining is rife and Kabwe is one of the most lead polluted towns in the world. Additionally, mining activities account for over 98 percent of Zambia's sulphur dioxide emissions directly leading to poor air quality and negatively affecting the health of humans, animals and plants. Mining and mining-related activities also contribute just over 1 percent to the total GHG emissions in the country.

Artisanal and small-scale mining is beset with unsustainable operations particularly application of inappropriate mining technologies, and informality with the attendant unsafe working and living conditions, deforestation, illicit social vices and pollution. Formalisation including formation of cooperatives needs to be enhanced to make the operations of the sub-sector sustainable.

Zambia has provided policies and regulations regarding environmental performance in the mining sector. The Mines and Minerals Development Act No. 11 of 2015 provides for safety, health and environmental protection in mining operations and prohibits exploration, mining or mineral processing without licence or environmental impact assessment. Additionally, the National Mineral Resources Development Policy of 2022 recognises the need for sound environmental practices and promotes climate resilient and adaptation mechanisms in the mining sector. Therefore, the policy and regulatory framework for greening the mining sector is to a great extent adequate. However, the main challenge has been the unsatisfactory implementation of the policy and legal framework explained by inadequate supervision by the Ministry responsible for mines and minerals development and the institutions responsible for environmental management including the Zambia Environmental Management Agency (ZEMA).

To improve efficiency and reduce negative environmental impacts in the mining sector, there is need for sustainable mining practices and resource-efficient extraction and processing technologies. In addition, cleaner production technologies and practices in mining operations can contribute significantly to decarbonisation of the sector.

2.6. TOURISM

Tourism in Zambia is predominantly nature-based, with the key attractions being the country's vast wildlife estate comprising 20 National Parks and 36 Game Management Areas (GMAs) which cover 31.4 percent of the country's land area, the Victoria Falls and over 16 other waterfalls, five (5) major rivers and eight (8) freshwater lakes. Zambia's tourism sector is dependent on a priceless heritage of wildlife for present and future generations. The wildlife heritage comprises fauna diversity which exceeds 3,600 species, of which 2,032 are invertebrates, 409 fish, 67 amphibians, 150 reptiles, 733 birds, 224 mammals and 16 domesticated animals and 598 species of microorganisms. The floral diversity of the country contains over 3,000 species, of which 211 species are endemic.

The tourism sector is one of the four (4) drivers of economic growth with its share of GDP at 1.5 percent over the 2011-2020 period and accounted for 15.7 percent of employment in 2019. However, the sector was one of the hardest hit by COVID-19 due to travel restrictions, resulting in a 26 percent contraction in the

growth rate in 2020. The sector is very vulnerable to climate change because of its dependence on wildlife and water resources. Drought conditions reduce soil moisture and give rise to poor-quality fodder, stress, uncontrolled migration of wildlife, and wildlife-human conflicts. Additionally, droughts reduce water levels of the different waterfalls including the Victoria Falls, thus affecting the flow of tourists visiting the country. On the other hand, under excessive rainfall, wetland animals like the Lechwe and Puku are adversely affected.

The tourism sector is also threatened by encroachment of the protected areas for human settlements, sharp reduction of certain wildlife species due to widespread poaching, deforestation fueled by subsistence and commercial agriculture, charcoal production, rampant wildfires and mining. Other challenges include poor infrastructure particularly roads leading to the tourism sites and the vulnerability of the sector to pandemics and other shocks due to over-dependence on international tourist arrivals as evidenced by the impact of the COVID-19 pandemic which led to approximately 60 percent reduction in international tourist arrivals in 2020 compared to 2019 as depicted in Figure 5 below. The sector also suffers from insufficient tourism natural capital data for evidence-based policy decision making.

In order to green the tourism sector, there is a need to reverse the trajectory of rapid degradation of the natural resource base (wildlife, forests, rivers, fisheries) and build the resilience of the sector to the impacts of climate change by putting up requisite infrastructure in the tourism sites, enhance the protection of national parks and GMAs, restock some wildlife species and promote domestic tourism.

FIGURE 5: TOTAL INTERNATIONAL TOURIST ARRIVALS, 2005 TO 2022
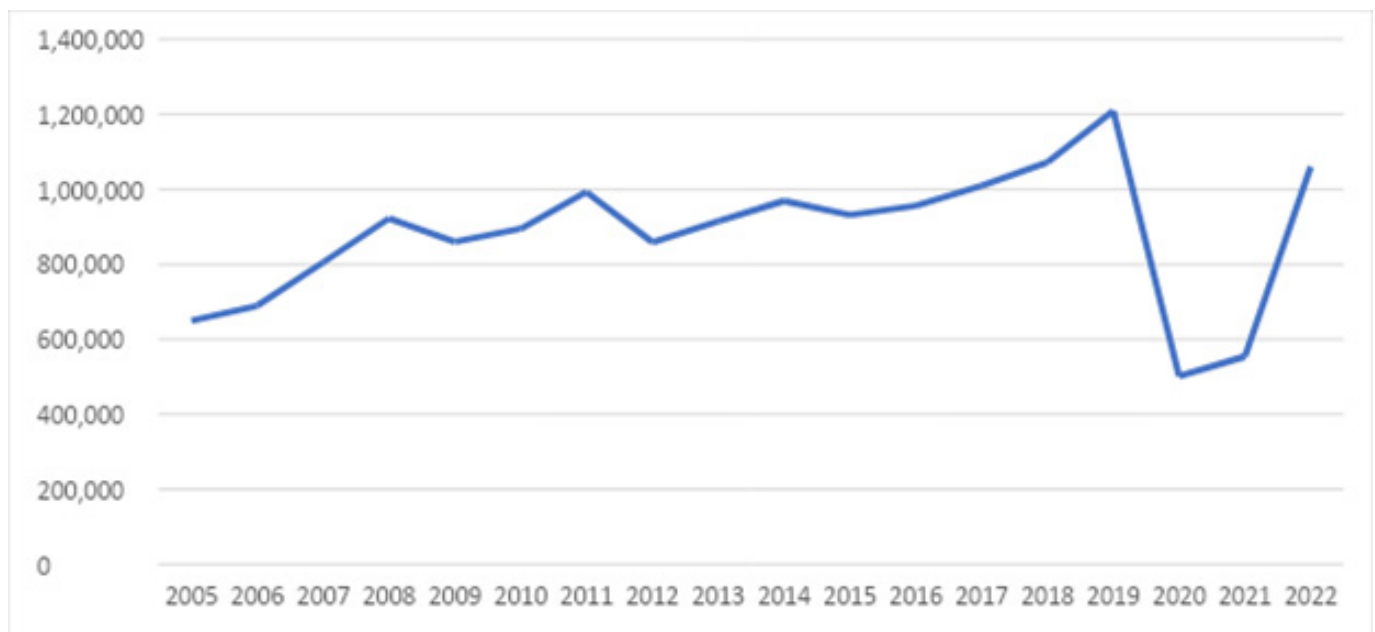
Source: Compilation from Annual Economic Reports

2.7. MANUFACTURING SECTOR

The manufacturing sector is one of the drivers of economic growth identified in the 8NDP and in the period 2005 to 2022, it accounted for 7.9 percent share of GDP as shown in figure 5. In 2021, a total of 330,933 people representing 10.5 percent of the total employed population were working in the sector. The manufacturing sector is set to take more prominence in the 8NDP period with the target to attain an

average annual growth rate of at least 5 percent for the manufacturing sector and increase the share of manufactured goods in total non-traditional exports to 55 percent in 2026 from 44 percent in 2020.

With the manufacturing sector's contribution to GDP poised to increase, it is expected that it is likely to have significant adverse impacts on the environment and businesses if no mitigation measures are taken into consideration. This is because most enterprises in Zambia employ inefficient manufacturing processes and practices that use excess materials and over-exploit resources due to low productivity. Additionally, pollution of air, land and water is one of the major environmental problems associated with the manufacturing sector. Further, as shown in table 2, GHG emissions from the IPPU sector, under which the manufacturing sector falls, although a small fraction, have been on the increase and can contribute to climate change as well as negative health to humans and wildlife. Other negative impacts on the environment are use of toxic materials and energy inefficient technologies.

The other characteristics of Zambia's manufacturing sector that make it not amenable to greening include the high informality and unskilled labour force, low awareness of the benefits of green practices and inadequate preventive maintenance. Most of the Micro, Small and Medium Enterprises (MSMEs) lack the internal capacity to assess, identify and implement measures to improve resource efficiency and reduce environmental pollution.

There is, therefore, a need, as part of the greening process, to maintain a sustainable environment and natural resource base that is resilient to natural and man-made threats as the demand for natural resources, food items and manufactured goods surges.

FIGURE 6: MANUFACTURING SECTOR SHARE OF GDP, 2005 TO 2022
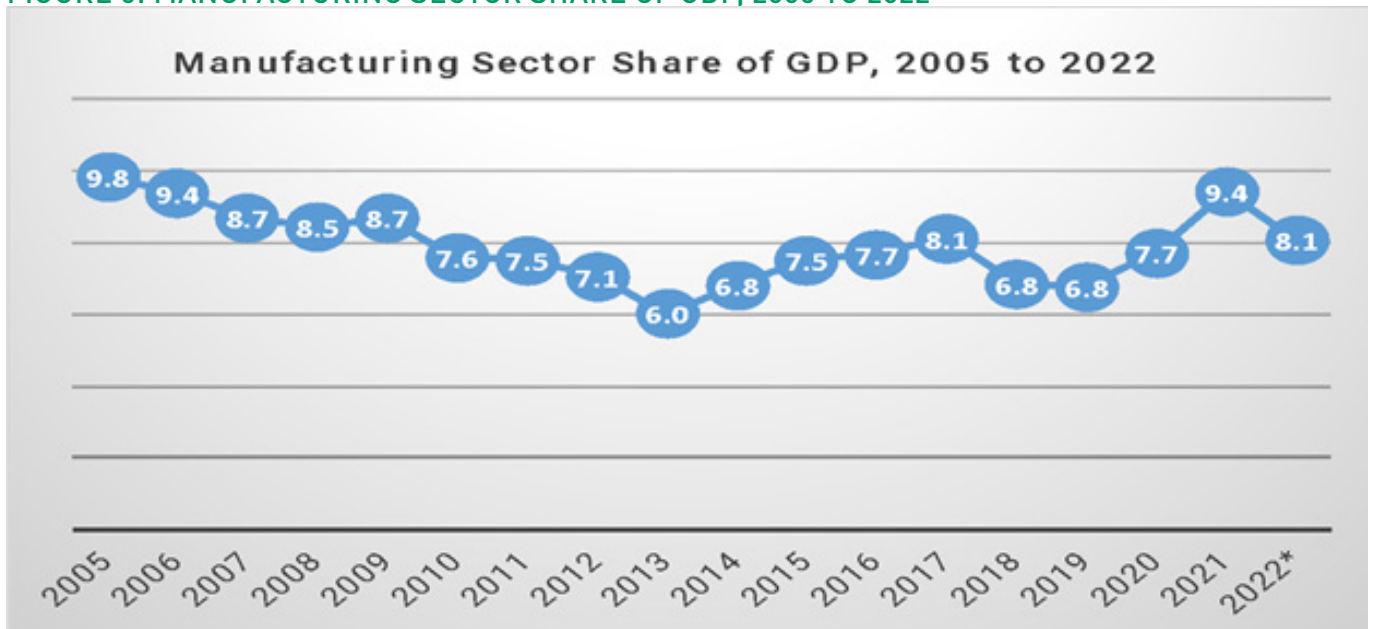
Source: Zambia Statistics Agency

2.8. FORESTRY

Zambia has an estimated 45.9 million hectares of forest, representing approximately 61 percent of the country's total land mass. Forests are very important for socio-economic development and account for 4.7 percent of GDP and support about 60 percent of rural households to sustain livelihoods while offering a home to diverse plants and animals. They also provide critical life-supporting ecosystem services, including acting as a buffer against climate change, the provision of food and clean water, and invisible services such as flood protection, nutrient cycling, water filtration and pollination. The forestry sector has huge potential for investment and contribution to the socio-economic development and well-being of the Zambian people.

However, forest resources are under threat from deforestation with the 8NDP estimating the deforestation rate at 172,000 hectares per annum, one of the highest in Africa. According to Global Forest Watch, from 2001 to 2020, Zambia lost 1.87 million hectares of tree cover, equivalent to an 8 percent decrease in tree cover since 2000. It is estimated that 65 percent of forest cover lost was from agriculture expansion, uncontrolled burning, unsustainable harvesting of fuelwood and timber; 33 percent from extension of urban areas including unplanned settlements; and the rest to mining and other activities. Deforestation is highly correlated with poverty and as forest land is converted to low input agriculture systems, it triggers land degradation and low crop productivity, posing major threats to food security and farm household income.

Deforestation and forest degradation is the highest contributor to GHG emissions in Zambia and is the main driver of the increasing GHG emissions under the AFOLU sector as depicted in Table 2. According to Global Forest Watch, between 2005 and 2021, an average of 41.8MtCO$_2$eq per year and a total of 711.3MtCO$_2$eq was released into the atmosphere because of tree cover loss in Zambia as shown in Figure 7.

FIGURE 7: GHG EMISSIONS FROM TREE COVER LOSS (MTCO2EQ), 2005 TO 2021
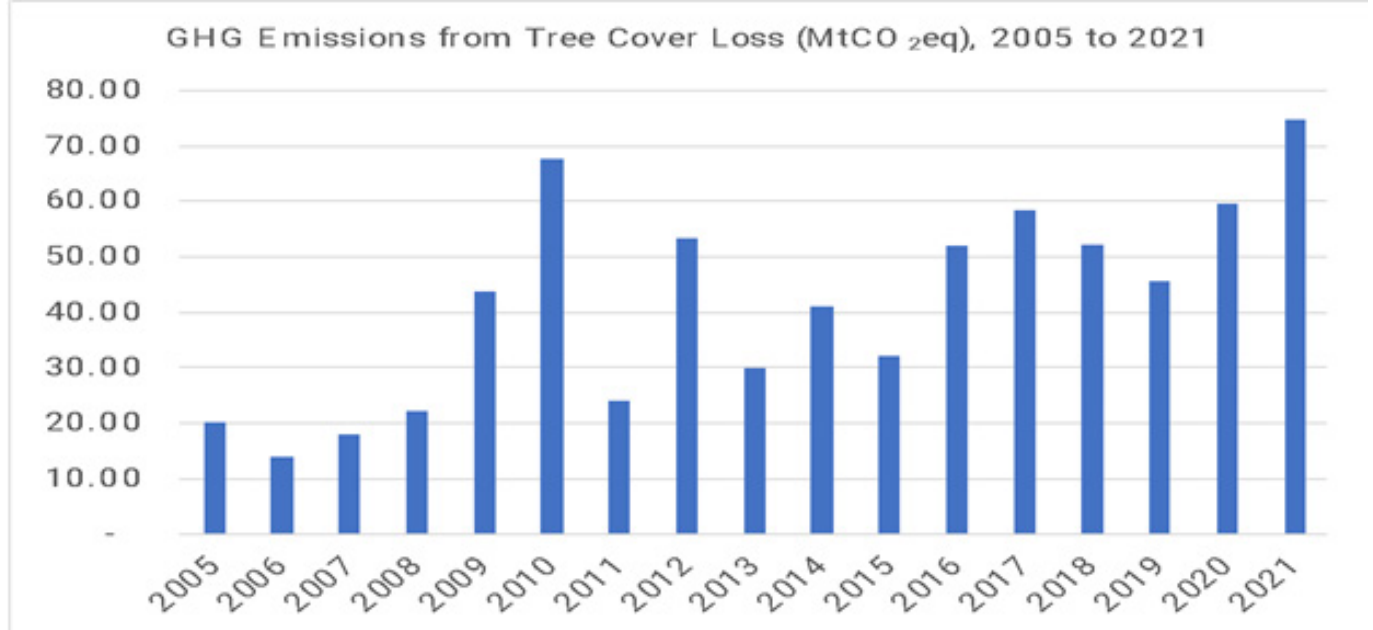
Source: Global Forest Watch

Zambia's low electricity access rate of just over 30 percent exacerbates deforestation and forest degradation by making fuelwood extraction for charcoal and firewood an important source of energy, in turn, increasing GHG emissions and reducing the carbon sink status of forests. In addition, the charcoal production methods are very inefficient with approximately only 20 percent of the total biomass recovered as charcoal.

The forest sector is also vulnerable to climate change. For example, droughts and associated extreme temperatures come with increased incidences of forest fires and pest infestations which, in turn, create dead biomass that feeds wildfires. In turn, wildfires influence the distribution of wildlife and other species. Forests are also suffering from an increase in encroachment in forest reserves by rural communities for settlements and from unsustainable logging practices, including illegal logging. In addition, people in rural communities have undiversified sources of income for sustainable livelihoods and there is inadequate education and community awareness on the value of forests. Where forest carbon investments have been made, there is inadequate involvement and empowerment of local communities and benefit-sharing mechanisms are often limited.

Other challenges facing the forest sector include low private investment to stimulate accelerated growth and development of the sector; and increased environmental pollution from both underground and open pit mining areas which threatens both aquatic and terrestrial ecosystems, which are home to biodiversity of plants and animals. The forestry sector also faces the challenge of limited value addition and access to markets for timber and non-timber forest products, and weak enforcement of forestry laws, weak institutional capacity, and limited resources for monitoring and surveillance which contribute to encroachment. There is also need for generation and updating of data on the stocks and flows of forest resources to inform policy decision making.

Therefore, there is a need to green the forestry sector by enabling low-carbon private investments, providing alternative livelihoods and increasing the participation of rural communities to enhance social inclusion and ensuring the development and transfer of efficient technologies for charcoal production.

2.9. ENERGY SECTOR

Zambia's main sources of energy include electricity, wood fuel and wholly imported petroleum products. Wood fuel accounts for 82 percent of the country's energy mix, whereas electricity and petroleum products account for only 14 percent and 4 percent, respectively. The Country is also endowed with a range of renewable energy resources, particularly hydro, geothermal, wind and solar energy. These have enormous potential for electricity and fuel production, including for hydrogen use in various applications and end uses.

As of December 2022, Zambia's electricity installed capacity stood at 3,492 megawatts with hydro predominating the generation mix at 80.1 percent of installed capacity while Coal, Heavy Fuel Oil (HFO), Diesel and Solar accounted for 10.3 percent, 3.8 percent, 2.8 percent and 3 percent, respectively. The mining sector remains the largest consumer of power at 51 percent of total generated electricity, followed by the domestic sector at 33 percent (Figure 8).

FIGURE 8: ELECTRICITY GENERATION MIX
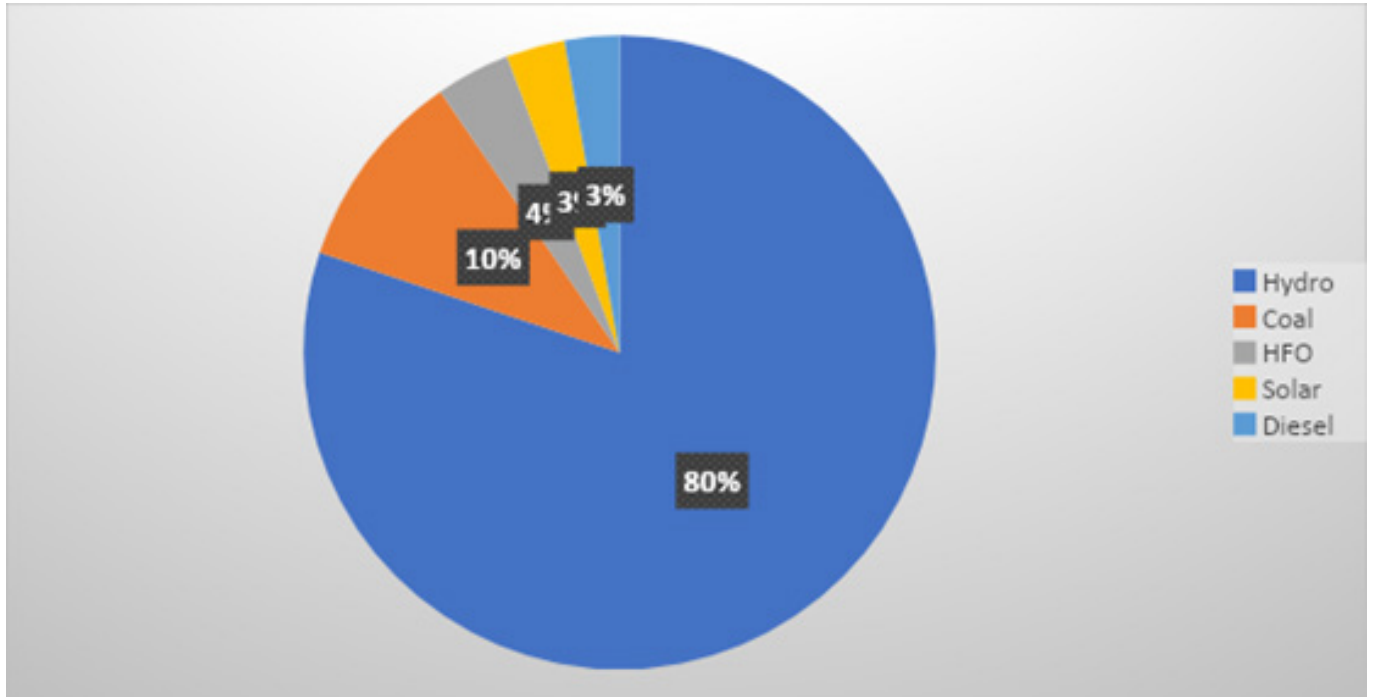
Source: Ministry of Energy

Zambia's electricity sub-sector is highly vulnerable to the adverse impacts of climate change due to over-reliance on climate-sensitive hydroelectric power. Whenever the country experiences droughts, power supply is erratic which negatively impacts economic growth as production at all levels is hampered. For example, in 2016 overall generation declined by about 15 percent compared to 2015 and consequently caused load management to all sectors particularly mining, manufacturing and domestic customers as shown in Figure 9. Similarly, in December 2022 power generation reduced due to decreased water levels at the Kariba dam, the main hydro-electric generation plant, with the consequence of load management and slowdown of economic activities.

FIGURE 9: HYDROELECTRICITY GENERATION CAPACITY, 2009 TO 2019
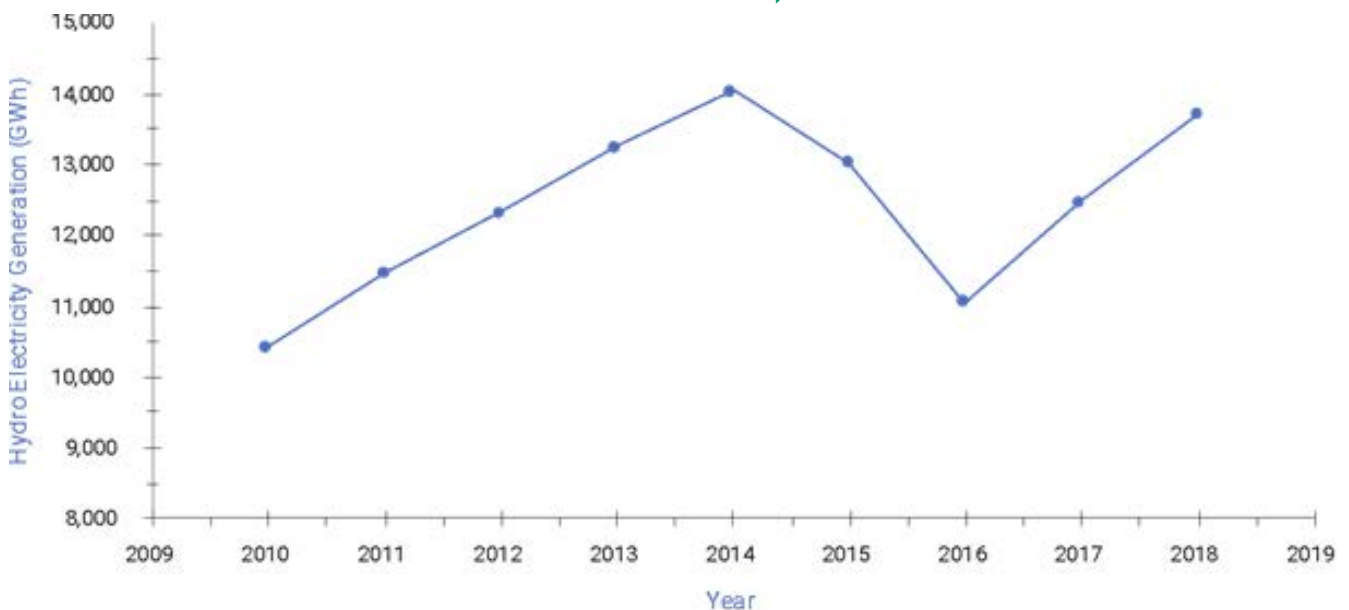
Source: Ministry of Energy

While some efforts have been made to improve access to electricity, it remains significantly low at just over 8 percent in rural areas and around 30 percent for urban areas. These low electricity access rates for both rural and urban areas have made over 80 percent of the population dependent on charcoal and firewood for cooking which, in turn, increases indoor air pollution and GHG emissions. Additionally, as already indicated, over 16 percent of Zambia's electricity is generated from fossil fuels such as coal, HFO and diesel which increase the GHG emission profile of the sector, and the need to seek opportunities to prevent or remediate GHG emission through measures such as carbon capture and storage.

The Government has continued to support the uptake of renewable energy by ensuring an enabling environment, resulting in a swell in investment within the Renewable Energy sub-sector. In this regard, the Government has developed the Renewable Energy Strategy and Action Plan (RESAP). The RESAP provides a roadmap under which the country is expected to implement various identified market interventions that will transform the market and catalyse the accelerated diffusion of renewable energy technologies for a more robust and resilient energy sector. The country needs to invest in other renewable energy sources, such as solar and wind, and enhance energy use efficiency across all sectors. This shift towards renewables will also contribute to resource productivity by reducing the pressure on wood fuel and promoting environmental sustainability.

Further, the Government has noted that the efficient use of energy is of great importance to a nation's development and economic independence. As such, the Energy Efficiency Strategy and Action Plan was developed to drive the country's economic growth by harnessing its energy efficiency potential, reducing energy costs, promoting energy services and reducing greenhouse gas emissions and, in turn, achieve the 2030 energy intensity target.

Therefore, to green the energy sector, there is need to build the resilience of the sector to the impacts of climate change, improve access to electricity through increased facilitation of private sector investments particularly in the unserved and underserved areas, develop renewable energy technologies and improve energy efficiency.

2.10. WASTE

Zambia is facing a significant waste management challenge arising from increased economic activities, population growth and rapid urbanisation with 43 percent of the population living in urban areas. This has been compounded by insufficient infrastructure for both solid waste and waste water management which has not been able to handle the growing population. The country generates an estimated 3.7 million tonnes of waste annually with 45 percent of the waste collected through formal services while the rest is buried, burnt, or dumped in public spaces causing health and environmental problems as the waste generates GHGs such as methane, and leachate, which can contaminate soil, water, and air.

While the regulatory and institutional framework for improvement of the management of solid waste and waste water is adequate and local authorities have designated disposal sites for solid waste and waste water treatment, there is inadequate regulatory enforcement as well as limited waste management infrastructure such as waste collection vehicles, waste transfer stations, and properly engineered landfills. Additionally, there is inadequate public awareness and education on proper waste management practices with many people unaware of the negative impact of poor waste management on their health and the environment.

In terms of waste management practices, Zambia has been practicing the linear economy where even waste materials of value have been disposed of. This is because the waste value chain is not well developed and lacks capacity to close off the loop required for the circular economy. These include lack of waste segregation and inadequate collection services to cater for the volume of waste generated. The waste management practices have not given priority to waste prevention, re-use, recycling and recovery.

While Zambia has recycling facilities for various waste including steel, plastic, paper and glass, the facilities have not realised their full potential because of inadequate raw materials for recycling which are lost through improper disposal, lack of waste segregation and poor linkages to the waste market. Only 6 percent of the waste generated in Zambia is recycled. In the absence of the circular economy opportunities to eliminate waste and pollution, circulation of products and materials have not been realised.

To green waste management, there is need to explore alternative waste management practices, including separation and collection, sale of valuable waste, and waste to energy. There is also need to invest in the requisite infrastructure and skills needed for an effective management system.

2.11. WATER

Zambia is endowed with abundant surface and ground freshwater resources which should enable socio-economic development of the country. However, about 30 percent of the Zambian population does not have access to improved drinking water and about 20 percent of the population does not have access to basic drinking water sources within a 30-minute walk from their homes. This is particularly true for the poor urban population living in slums and those living in rural areas. This situation is the main cause of waterborne diseases such as diarrhea, dysentery, typhoid fever and cholera.

The water sector is also vulnerable to climate change with dry weather and droughts significantly impairing the availability of water for domestic use, and agriculture with climate analyses showing that a substantial part of annual crop production could be lost, and communities made food insecure due to water scarcity and intensified dry periods during the rainy season. The scarcity of water especially in rural areas is already leading to increased competition over access to and use of water points between different livelihood options for domestic and productive use particularly during dry spells. This results in local power dynamics thus restricting access to water along lines of social status, and gender, particularly for vulnerable groups.

Conversely, floods impact crops affecting food availability and contaminate unprotected water sources causing waterborne diseases. As a result, the need for water storage and irrigation even during the rainy season is becoming increasingly important.

Zambia has a very low water use efficiency. The country utilises a lot of water inefficiently in hydroelectric power generation, irrigation, domestic water supply and sanitation and other industries. Zambia's unaccounted for water or non-revenue water is also very high at about 50 percent or more and is largely attributed to old and dilapidated water infrastructure which cause large volumes of treated water to be lost in transmission before reaching the supply points. In addition, non-revenue water has impacted on the credit worthiness of commercial water supply and sanitation companies to the extent that they are unable to access the much-needed financing to invest in improving water networks at competitive rates.

Nevertheless, Zambia has made strides in the implementation of Integrated Water Resources Management (IWRM) which considers water as both a social and an economic good which should be available to all humans as a basic right and to enable the productive sectors such as agriculture, manufacturing, mining, tourism and energy. However, there is need to enhance the implementation of IWRM to ensure that it is more effective. Additionally, Zambia lacks a framework to deal with the water-energy-food-ecosystems (WEFE) nexus that would help to minimise tradeoffs between the WEFE Sectors and ensure the equitable and efficient allocation of water to the different sectors. In this regard, efforts are being made to localise the SADC Water-Energy-Food nexus governance framework at country level.

Greening the water sector, therefore, entails the building of the resilience of water supply for both social and economic purposes considering climate change, improving water use efficiency, enhancing access to safe water for all and strengthening the implementation of the IWRM.

2.12. INFRASTRUCTURE

Infrastructure is a critical enabler for increased productivity and sustainable economic growth, poverty and inequality reduction, job creation, and ensuring environmental sustainability in Zambia. However, the country has an infrastructural deficit in multiple sectors including energy, transport, water and sanitation, buildings and housing, which is a constraint on growth and adversely impacts the quality of life of the population.

The infrastructure sector in Zambia is highly vulnerable to the impacts of climate change as evidenced by increased climate-related incidences such as road and bridge washouts due to heavy flooding as well as damaged or stressed buildings due to high wind speeds and extreme temperatures. These incidences affect accessibility of populations in the affected areas to services such as health, education and markets for goods. The infrastructure is also repaired at great cost to the Government which, for example, spent K2.2 billion in the period 1996-2017 on rainfall related damage to road infrastructure alone.

The sector is also one of the contributors to GHG emissions and loss of biodiversity due to indiscriminate cutting down of trees and undertaking excavations to pave way for infrastructure development. Additionally, most infrastructure in Zambia are not resource efficient particularly in the use of energy and water. Furthermore, due to cost, there is little consideration of inclusion of different users such as pedestrians, cyclists and people living with disabilities in infrastructure such as roads and buildings.

While climate resilient standards and codes have been developed for roads, there is need for an extension of this to encompass the development of green standards and codes to guide the development of all infrastructure to ensure resilience to climate change, inclusion of nature-based solutions in infrastructure development, enhancing social inclusion in the utilisation of infrastructure as well as low-carbon and resource efficient development of infrastructure in Zambia. In addition, the green standards and codes should be embedded in regulations and in infrastructural planning from the national level to the local authorities.

2.13. TRANSPORT

The transport sector consisting of road, rail, air and inland waterways is very important as it facilitates the undertaking of other economic activities including national and international trade and integration of Zambia into the regional and global economies. Road is the most preferred mode of transport and accounts for 97 percent of cargo movement and 98 percent of passenger movement while the other modes of transport including rail, air and inland waterways account for 3 percent of cargo and 2 percent of passengers moved, respectively as captured in Figure 10 below. Rail transport registered a 49 percent decrease in the volume of cargo hauled to 894,000 metric tonnes in 2022 from 1.75 million metric tonnes in 2005. In the same vein, rail transport recorded a 45 percent reduction in the number of passengers transported to an estimated 650,000 in 2022 from 1.2 million in 2005. This is because of the efficiency of road transportation and the inefficiency of rail transport which has had progressively reduced investment in both tracks and other equipment. The over-reliance on road transport particularly for movement of cargo puts pressure on the road infrastructure which consequently needs frequent maintenance.

FIGURE 10: CARGO VOLUME AND PASSENGER NUMBERS BY MODE TRANSPORT, 2022
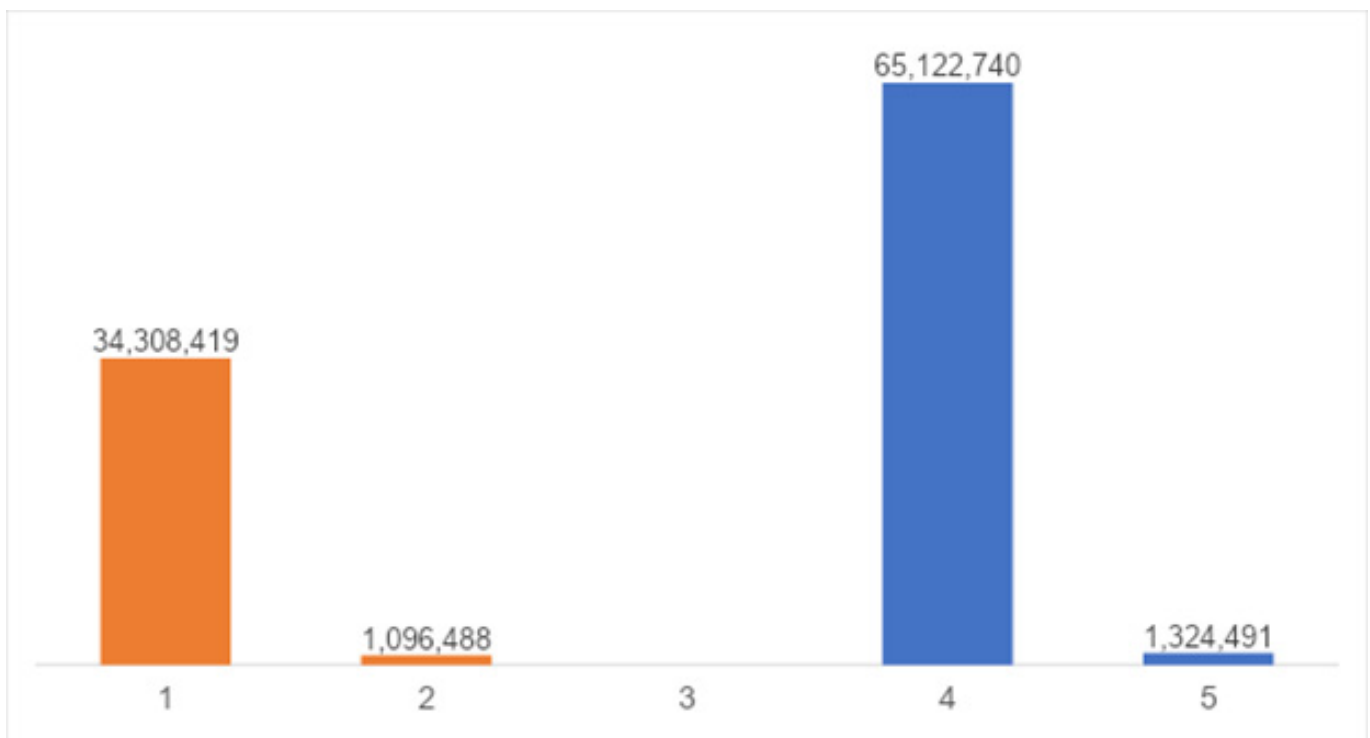
Source: 2022 Annual Economic Report, MoFNP

As a consequence of an upswing in economic activities, and population growth, the number of registered motor vehicles and trailers in Zambia increased by over 400 percent to 960,237 in 2022 from 183,701 in 2006 with the privately owned motor vehicles taking up a significant percentage of this. This has caused traffic congestion particularly in cities namely Lusaka, Ndola and Kitwe because of the spatial footprint of the increased private motor vehicles leading to inefficient allocation of scarce urban space. There is, therefore, need to move to the utilisation of mass transit systems especially public buses in the cities and concurrently promote the use of non-motorised transport while providing the requisite infrastructure and policies to enable the transition.

In addition, with the increased importation and use of fossil fuel vehicles in the country, there is a corresponding growth of GHG emissions and pollution from the transport sector. Zambia acknowledges the global interventions to reduce GHG emissions from the transport sector by moving from the use of hydrocarbon-based fuels to e-mobility. In this vein, the country has started using electric vehicles and as of 31st December, 2022, a total of sixty (60) electric vehicles were registered on the Road Transport and Safety Agency (RTSA) database. However, there is need to develop a comprehensive policy framework to guide the rollout of e-mobility including charging infrastructure, standards and disposal of waste.

Therefore, to green the transport sector there is need to transition to mass transit systems particularly for cities, improve the performance of the railway sub-sector and develop the policy framework for the rollout of e-mobility.

FIGURE 11: RAIL CARGO AND PASSENGER HAULAGE, 2005 TO 2022
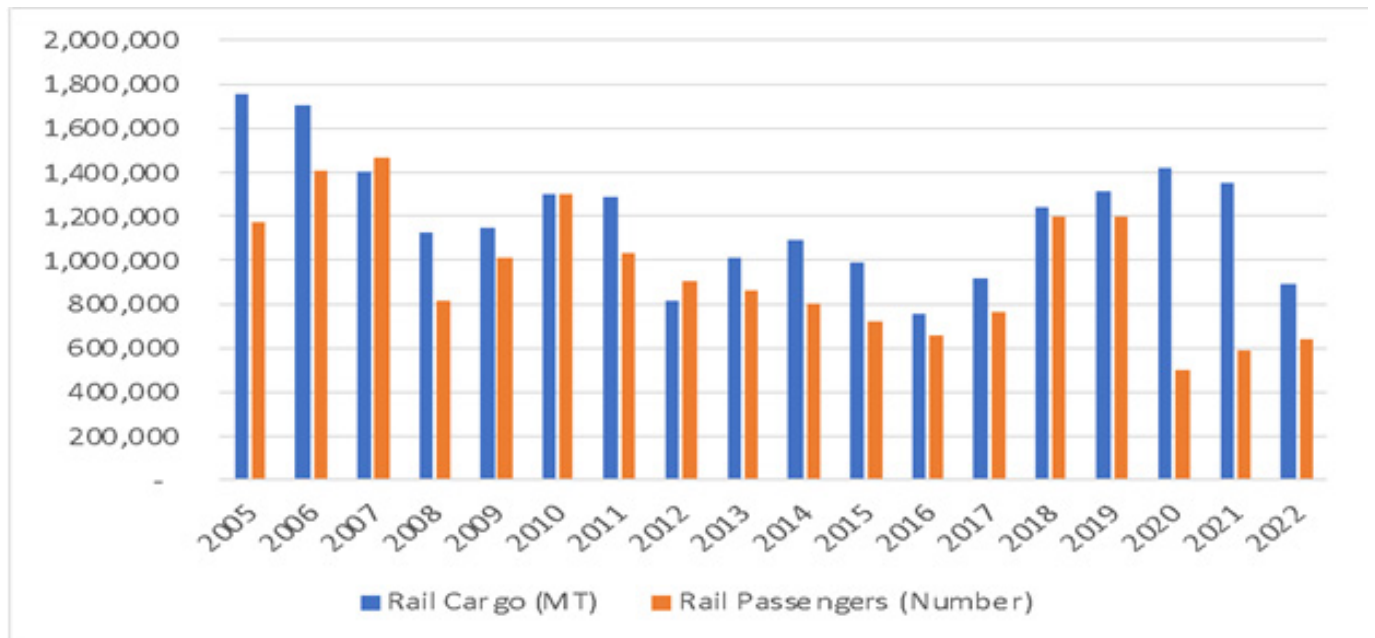
Source: Compilation from 2005 to 2022 Annual Economic Reports, MoFNP

2.14. OTHER MATTERS

To transition to a green economy, there is a need to build the requisite technical capacity for implementation of green growth actions across the key sectors. It would also be imperative to enhance the mobilisation of resources for the transition to a green economy. Additionally, there will be a need to develop the capacity for the generation and periodic updates of data to ensure effective monitoring and evaluation of the greening process.

Greening of growth will require addressing the challenges and making use of the opportunities available in each of the key sectors. It also entails providing an enabling and supportive environment for the greening process.

SCENARIO ANALYSIS – THE ECONOMIC BENEFITS OF GREEN GROWTH

Chapter Three
SCENARIO ANALYSIS – THE ECONOMIC BENEFITS OF GREEN GROWTH

3.1 OVERVIEW

As the challenges identified in the green growth situation analysis suggest, greening the economy comes with investment across sectors involving activities in agriculture and land use such as afforestation and landscape restoration, applying sustainable and climate-smart agriculture methods and increasing efficiency of livestock management. In the energy sector, energy demand needs to be electrified step by step to move away from fossil fuels and to reduce deforestation by shrinking the use of biomass for energy. Energy efficiency must increase while energy production capacity must be based on renewable energy sources. The transport system should see the substitution of internal combustion engines for electric vehicles to make the public transport system more efficient. In the industrial sector, and particularly in mining, processes need to be made more energy-efficient. In line with circular economy principles, waste reduction, collection, recycling, and reuse for energy production also have to improve.

In view of the foregoing, scenario analysis was conducted and shows that green policy action provides significant economic and social benefits for the Zambian people. Compared to a business-as-usual trajectory, green growth activities will increase the rate of economic growth both during the National Green Growth Strategy's period until 2030, but also beyond. Assuming two scenarios, GG1 with reasonable ambition and GG2 with very high ambition, results indicate that higher ambition means higher economic growth.

FIGURE 12: TOTAL REAL GDP IN BILLION ZMW UNDER GREEN GROWTH SCENARIOS COMPARED TO THE BUSINESS-AS-USUAL SCENARIO
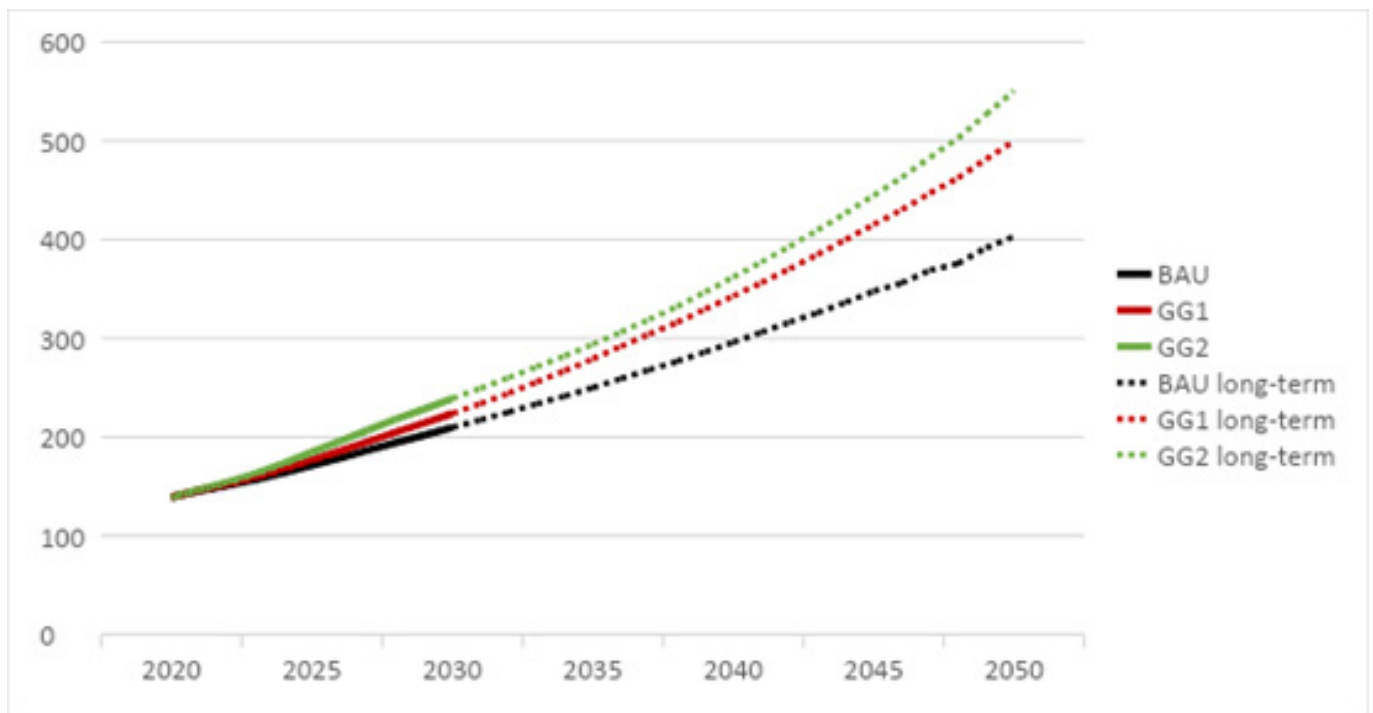
TABLE 3: AVERAGE ECONOMIC GROWTH RATE PER SCENARIO AND DECADE

DESCRIPTION	2024-2030	2040-2050	2040-2050
BAU	4.2%	3.5%	3.1%
GG1	4.9%	4.4%	3.8%
GG2	5.6%	4.2%	4.3%

Green growth is also favorable with regard to job creation. Green growth activities such as afforestation, energy production, and waste management directly create new employment opportunities. While the growth stimulus emanating from these activities trigger additional job creation across the economy. This will provide opportunities, particularly for the labor force occupied in the informal sector, to move from low-productivity to high-productivity activities. It is expected that the jobs will be in both high-skill and the low-skill areas, thus supporting the building of human capital as well as immediately improving the social situation of many low-income households and vulnerable groups.

It should be noted that since economic growth and job creation are correlated with the ambition levels of green growth activities, some of the new jobs will prevail in the long term while others disappear again once a specific objective such as decarbonisation is achieved. This yields the overall result of lower unemployment compared to business as usual in the long term while the strongest effect occurs in the short term to be covered by the Strategy's period.

FIGURE 13: UNEMPLOYMENT RATE UNDER GREEN GROWTH SCENARIOS COMPARED TO THE BUSINESS-AS-USUAL SCENARIO
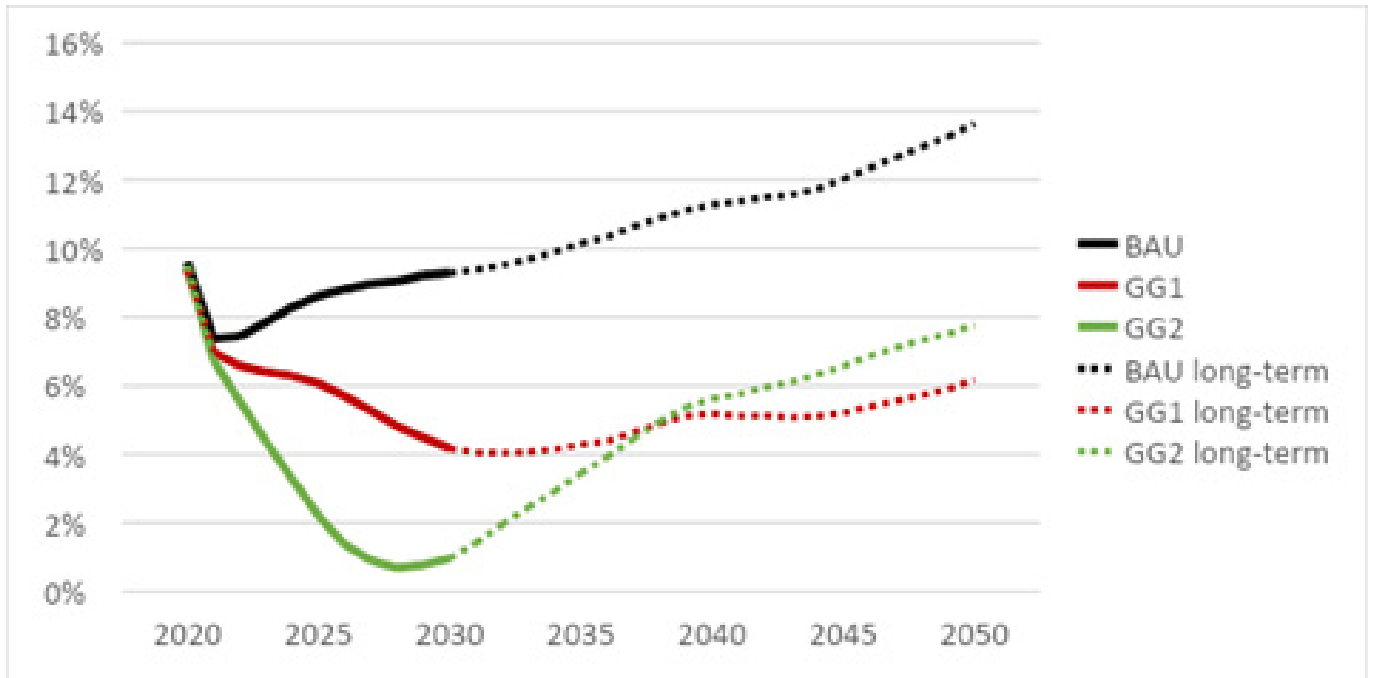
Zambia's green growth interventions are meant to reduce carbon emissions in order to meet its obligations to the Paris Agreement on climate change. At the same time, decarbonisation comes with benefits in terms of higher energy efficiency, improved air quality, and quality of life. Moreover, decarbonisation efforts help attract international climate finance, which additionally support overall development purposes.

FIGURE 14: CO$_2$E EMISSIONS UNDER GREEN GROWTH SCENARIOS COMPARED TO THE BUSINESS-AS-USUAL SCENARIO IN MT PER YEAR
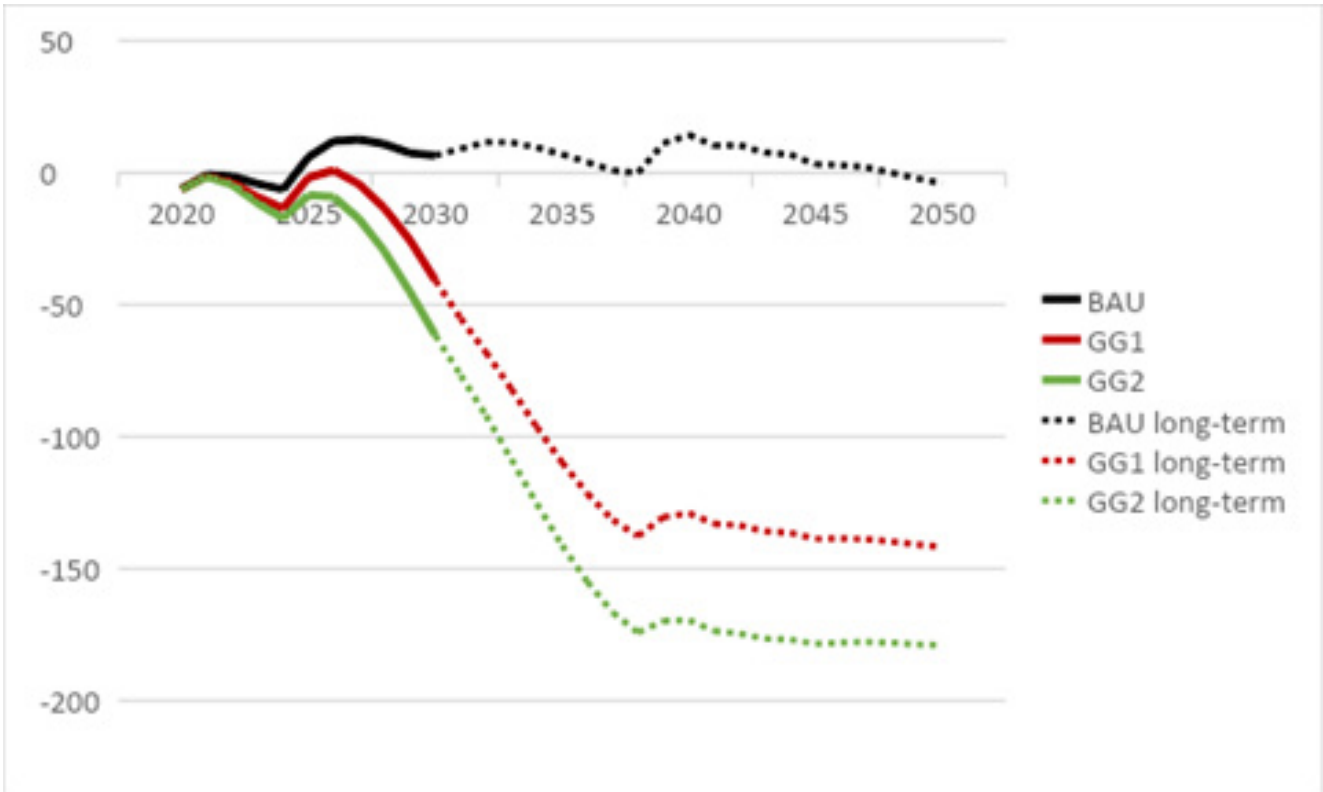
The implementation of the Green Growth Strategy will also help accelerate the adoption of circular economy principles. Policies for waste reduction will reduce the pollution at source while the remaining waste will increasingly be collected, recycled and reused for energy production, and composted.

FIGURE 15: WASTE REDUCTION AND WASTE MANAGEMENT UNDER GREEN GROWTH SCENARIOS COMPARED TO THE BUSINESS-AS-USUAL SCENARIO IN MT PER YEAR
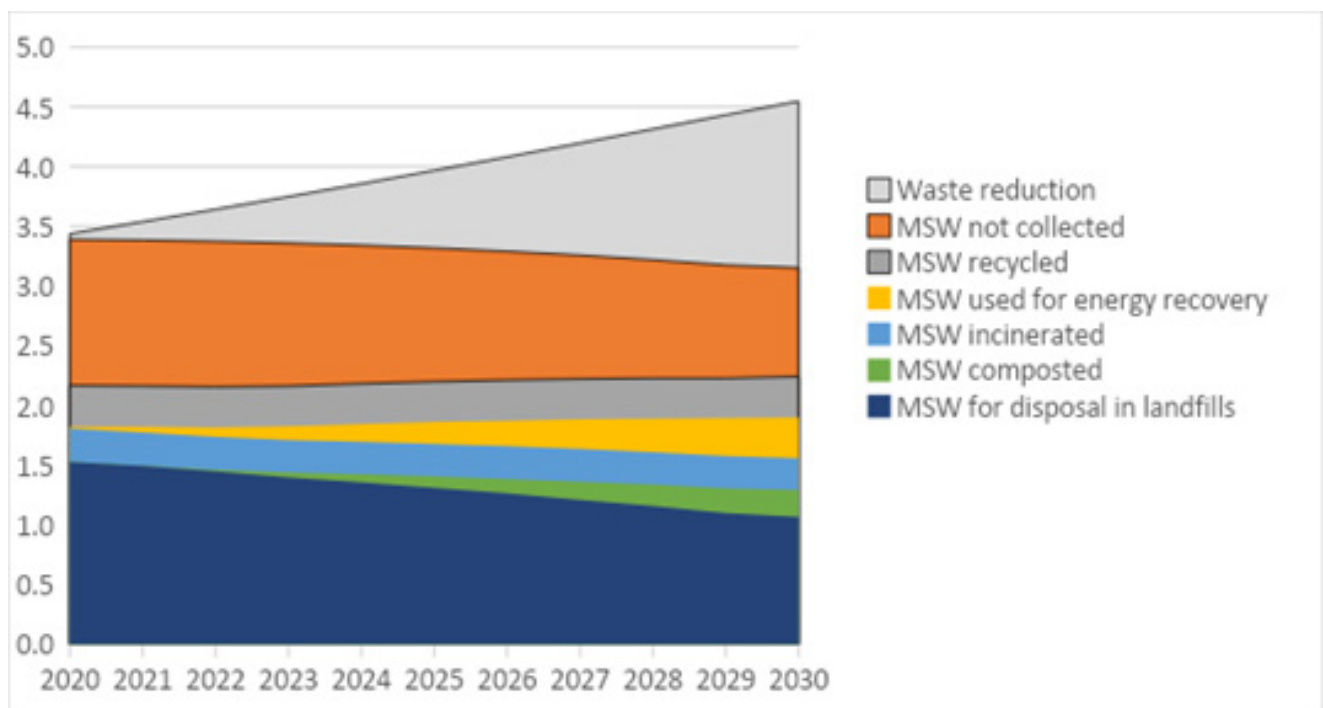
3.2 INVESTMENT COSTS AND COST-BENEFIT ANALYSIS

The scenario analysis provides a cost estimate to implement the Green Growth Strategy. The costs occur particularly in the agriculture and energy sector. Yet, to see if costs are justified, it is important to relate them to the benefits arising from the implementation of the National Green Growth Strategy. The cost-benefit analysis (CBA) shows that while investment costs exceed the benefits in terms of economic growth and other components in the short term until 2030, the benefits are significantly larger throughout the period until 2050. For every ZMW invested, between 1.30 and 1.65 ZMW will flow back to Zambia and its citizens. The focus for the implementation of the National Green Growth Strategy should, therefore, be on the mobilisation of resources in the short term to reap the benefits in the long term.

TABLE 4: INVESTMENT COSTS FOR THE GREEN GROWTH STRATEGY IN BILLION ZMW (UNDISCOUNTED)

DESCRIPTION	2023-2030		2023-2050	
	GG1	GG2	GG1	GG2
Annual cost of livestock emission reductions	2.80	3.35	8.49	9.01
Total cost of sustainable agriculture	34.06	34.06	240.29	240.29
Cost of industrial ccs	0.46	0.50	2.54	2.77
Total cost of energy interventions	61.97	217.38	225.77	227.70
total cost of land-based interventions	24.50	31.75	85.30	111.55
annual investment in energy efficiency	20.78	30.61	66.70	88.50
total cost of waste management	0.27	0.27	4.02	4.02
total cost of waste prevention	5.73	5.73	51.58	51.58
Total cost of low carbon interventions	**150.58**	**323.65**	**684.69**	**735.41**

TABLE 5: COST-BENEFIT ANALYSIS OF THE GREEN GROWTH STRATEGY IN BILLION ZMW (DISCOUNTED AT 5 PERCENT)

	2023-2030	2023-2050		
	GG1	GG2	GG1	GG2
Annual cost of livestock emission reductions	2.37	2.84	4.81	5.28
Total cost of sustainable agriculture	27.94	27.94	112.45	112.45
Cost of industrial ccs	0.38	0.41	1.50	1.62
Total cost of energy interventions	52.68	187.31	133.97	205.78
total cost of land based interventions	19.76	25.61	47.32	61.83
annual investment in energy efficiency	17.60	25.99	38.49	52.58
total cost of waste management	0.16	0.16	2.31	2.31
total cost of waste prevention	4.66	4.66	23.23	23.23
Total cost of low carbon interventions	125.55	274.92	364.09	465.08
Energy bill savings	0.94	5.38	-1.91	2.30
ICE vehicles cost saved	14.23	35.19	44.24	40.08
Total real GDP	51.29	118.22	449.51	709.40
Total benefits	66.46	158.80	491.83	751.77
Net benefit	-59.09	-116.12	127.74	286.70
Benefit in ZMW per ZMW invested	0.53	0.58	1.35	1.62
Net return	-47%	-42%	35%	62%

TOWARDS GREENING GROWTH IN ZAMBIA

Chapter Four.
TOWARDS GREENING GROWTH IN ZAMBIA

4.1 OVERVIEW

In the period 2024 to 2030 and beyond, Zambia will pursue a green growth trajectory that will accelerate the realisation of the country's Vision to become "A Prosperous Middle-Income Nation by 2030". By 2030, a firm foundation would have been set for a climate-resilient, low-carbon, resource efficient and socially inclusive Zambian economy.

To transition to a green economy, Zambia will address the challenges and weaknesses that impede green growth as well as seize the opportunities for greening growth highlighted across the key sectors in the green growth situation analysis and the scenario analysis. The country will implement green growth actions by integrating the concept of green economy in key policies and strategies at national and sub-national levels. This will be done using strategic environmental assessments, environmental and climate evaluations, social impact assessments, social and green procurement standards. Additionally, the country will enhance resource mobilisation including the use of public private partnership procurement model, and capacity building for the execution of green growth interventions.

4.2 MOVING TOWARDS GREEN GROWTH – WHAT IT WILL TAKE

VISION:

Zambia's Vision on green growth is, "A low-carbon, resource efficient, resilient, and socially inclusive economy by 2030."

GUIDING PRINCIPLES

Implementation of green growth actions in Zambia will be guided by following key basic principles:

i). Well-being: green growth must create genuine, sustained, and shared wellbeing and should prioritise human development, health, happiness, education, stability and community.
ii). Justice: green growth must emphasise gender and intergenerational equity, equality, community cohesion, social justice, and support for the incorporation of the vulnerable groups, that is, women, the youth, the aged and persons with disabilities in the development process.
iii). Planetary boundaries: green growth recognises that all human prosperity depends upon sustainable utilisation of the environment and natural resources.
iv). Efficiency and sufficiency: green growth is low-carbon, diverse and circular.
v). Good governance: green growth builds institutions that combine dynamic democratic accountability, relevant metrics, sound science, and local knowledge.
vi). Peace and stability: green growth must be achieved in a conflict-sensitive and peace-positive way to avoid security risks thus promoting social cohesion, peace, and stability.

The Vision for green growth in Zambia will be realised through the application of the highlighted principles and, in turn, the attainment of the following objectives:

OVERALL OBJECTIVE:

To promote development pathways that lead to Zambia's transition to a low carbon, resource efficient, resilient and socially inclusive economy by 2030.

SPECIFIC OBJECTIVES:

i). To promote resilient and climate compatible economic transformation that generates green growth opportunities in development priority sectors;
ii). To ensure resource efficiency by the promotion of sustainable consumption and production that safeguards the integrity of the environment;
iii). To enhance the protection, conservation and restoration of natural capital; and
iv). To enhance social inclusion by creating green jobs and sustaining livelihoods

The four specific objectives outlined above have been abridged into the four (4) main pillars of the National Green Growth Strategy. Additionally, an enabling environment pillar has been crafted where all interventions envisaged to unlock the rigidities to greening growth in Zambia are captured. The pillars or specific objectives of the GGS were arrived at through an analysis of the challenges and opportunities for green growth implementation in Zambia including their causes and key actions required to address them. Under each green growth pillar are outcomes, that are short to medium term results, to be attained through the implementation of various interventions. Figure 12 below outlines the envisioned green growth change by 2030. By implementing the identified actions under the five (5) pillars, it is expected that the green growth bottlenecks will be addressed to enable Zambia to attain the vision for green growth by 2030.

Therefore, the five (5) pillars contributing to the attainment of the green growth vision for Zambia are:

i). Resilient and climate compatible growth: this entails that Zambia will pursue economic growth that minimises the adverse impacts of climate change and other shocks while maximizing the opportunities presented by a low carbon development pathway. Interventions will be implemented in the sectors identified as very vulnerable to climate change and other shocks and where opportunities exist for low carbon development including agriculture, tourism, energy, water and infrastructure.

ii). Enhanced resource efficiency: resource efficiency is imperative to greening growth in Zambia as it will ensure responsible consumption and production that will affect demand and supply for materials for undertaking economic activities. It will also mean preventing, reusing and recycling of waste which will contribute to reduction of extraction of natural resources for use in production processes and the creation of a circular economy. It is envisaged that interventions on resource efficiency will be implemented across the key sectors such as agriculture, water, energy, mining and transport, among others, and will be led by the private sector.

iii). Enhanced natural capital: it is necessary to improve the quality and quantity of natural capital on which economic growth is anchored. In this regard, government and other stakeholders including the private sector will commit to protect, conserve and restore natural resources and value them for their full contribution to economic and social development.

iV). Improved inclusivity: through interventions to be implemented under this pillar, the Government working with various stakeholders will ensure equity in the way the benefits of economic growth and access to basic services are distributed in Zambia. Special attention will be given to reducing inequalities, unlocking access to livelihood opportunities and extending the benefits of growth to all categories of society particularly the vulnerable to ensure a just and sustainable transformation that promotes stability and human security.

v). Enabling environment for greening growth: to ensure effective implementation of green growth actions, under this pillar, interventions that enhance the policy and regulatory framework, bolster the mobilisation of financial resources and improve human and technical capacity, will be executed.

FIGURE 12: THE GREEN GROWTH CHANGE PROCESS ENVISAGED IN THE STRATEGY
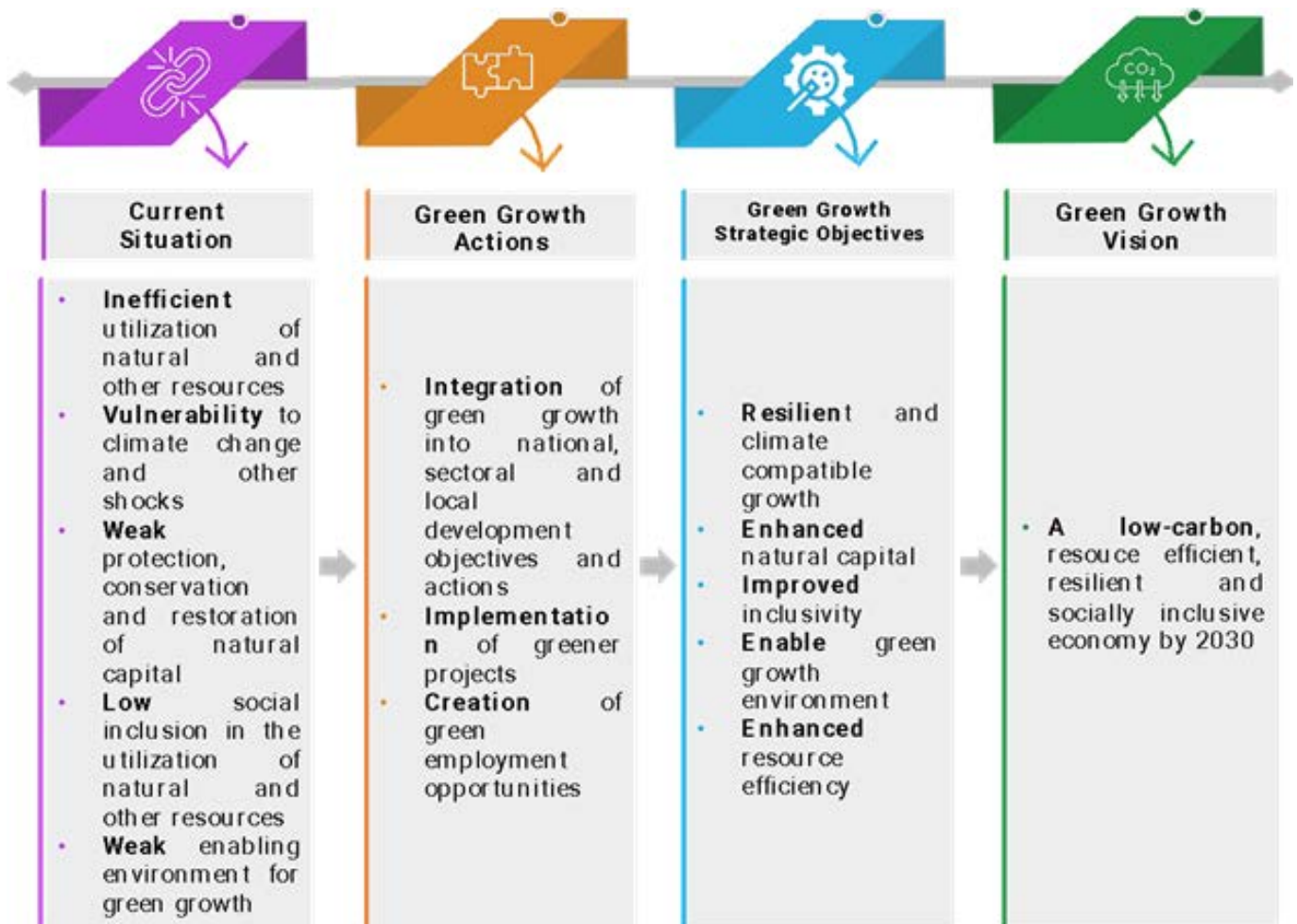
4.3 ALIGNMENT OF THE GREEN GROWTH STRATEGY WITH THE VISION 2030, 8NDP AND THE NATIONALLY DETERMINED CONTRIBUTION

The National Green Growth Strategy is aligned with the 8NDP and Zambia's Nationally Determined Contribution to the Paris Agreement as all the pillars of the Green Growth Strategy speak to at least one pillar of the 8NDP as depicted in Figure 13 below. In this regard, the Resilient and Climate Compatible Economic Growth, and Enhanced Resource Efficiency pillars of the National Green Growth Strategy are well-aligned with the Economic Transformation and Job Creation pillar of the 8NDP while the Improved

Inclusivity pillar of the Green Growth Strategy is aligned with the Human and Social Development pillar of the 8NDP. Similarly, the Enhanced Natural Capital and the Enhanced Green Growth Environment strategic objectives of the Green Growth Strategy are consistent with the aspirations of the Environmental Sustainability and Good Governance Environment pillars of the 8NDP.

Additionally, the strategic objectives on Resilient and Climate Compatible Economic Growth; Enhanced Resource Efficiency; and Enhanced Natural Capital of the Green Growth Strategy are consistent with the mitigation component of Zambia's Nationally Determined Contribution whereas the Improved Inclusivity and the Enhanced Green Growth Environment strategic objectives of the Strategy are aligned with the adaptation component of Zambia's NDC.

Therefore, implementation of the Green Growth Strategy is expected to contribute to the attainment of the aspirations of Zambia's 8NDP and the NDC. Additionally, the execution of the National Green Growth Strategy will also contribute to the achievement of the National Biodiversity Action Plan which is aligned to the Kunming-Montreal Global Biodiversity Framework.

REPUBLIC OF ZAMBIA

Vision 2030

Eighth National Development Plan (8NDP)

Green Growth Strategy (GGS)

Nationally Determined Contribution (NDC)

A PROSPEROUS MIDDLE-INCOME NATION BY 2030

Economic Transformation & Job Creation

Human & Social Development

Environmental Sustainability

Good Governance Environment

Resilient & Climate Compatible Economic Growth

Enhanced Resource Efficiency

Improved Inclusivity

Enhanced Natural Capital

Enhanced Green Growth Environment

Mitigation
- Sustainable Forest Management
- Sustainable Agriculture
- Renewable Energy and Energy Efficiency
- Sustainable Transport
- Coal
- Waste Management

Adaptation
- Adaptation of Strategic Productive Systems
- Adaptation of Strategic Infrastructure and Health Systems
- Enhanced Capacity Building, Research, Technology Transfer and Finance for Adaptation

PILLAR 1: RESILIENT AND CLIMATE COMPATIBLE GROWTH

Chapter Five
PILLAR 1: RESILIENT AND CLIMATE COMPATIBLE GROWTH

5.1 OVERVIEW

Zambia's economic sectors remain vulnerable to the effects of climate change, commodity price fluctuations and pandemics. Drought conditions have, over the years, led to reduced water levels, adversely impacting the contribution of the energy, tourism and agriculture sectors to the country's economic growth. On the other hand, heavy rains and flooding have caused damage to infrastructure as evidenced by increased climate-related incidents which include road and bridge washouts and damaged buildings.

Given the foregoing, the need to implement activities that build resilience in various sectors as well as promote climate compatible economic transformation cannot be overemphasised. To foster resilient and climate compatible growth, the Government in collaboration with various stakeholders will implement the outlined interventions to attain the outcomes highlighted under the following key areas:

5.2 AGRICULTURE

OUTCOME 1: ENHANCED RESILIENCE IN THE AGRICULTURE SECTOR

Agriculture is one of the drivers of economic growth in Zambia and yet is highly vulnerable to climate change and its cascading effects on livelihoods, human security and social stability. To increase resilience of the agricultural sector, there is need for implementation of the following interventions:

i). Promote the use of climate smart technologies and practices in crops, fisheries and livestock;
ii). Enhance the development of resilient irrigation infrastructure;
iii) Strengthen research and development; and
iv). Promote the use of agricultural insurance by small-scale farmers.

5.3 TOURISM

OUTCOME 2: INCREASED RESILIENCE TO SHOCKS IN THE TOURISM SECTOR

The tourism sector has been negatively impacted by extreme weather events including droughts and floods as well as shocks such as the COVID-19 pandemic.The impact of these shocks in the tourism sector is compounded by poor infrastructure, rapid degradation of the protected areas, and overdependence on foreign tourists. Therefore, there is need to implement the following interventions to make the sector more resilient:

i)   Increase opportunities for local and foreign investment partnerships;
ii)   Enhance the diversification of climate resilient tourism products;
iii) Scale up domestic tourism initiatives and marketing of tourism by locals;
iv)   Enhance the establishment of green tourism infrastructure: and
v).   Upscale investments in tourism products' diversification.

5.4 ENERGY

OUTCOME 3: INCREASED DEPLOYMENT AND ADOPTION OF RENEWABLE ENERGY TECHNOLOGIES

The over-dependence on hydropower makes the energy sector highly vulnerable to climate change. Therefore, there is need to increase the use of other renewable energy sources such as solar, wind and geothermal to contribute to building a climate resilient economy, enhance energy security and catalyse socio-economic development. Thus, the following interventions will be implemented to increase the deployment and adoption of renewable energy technologies in the country:

- i). Develop financing and resource mobilisation instruments, including de-risking facilities to catalyse deployment of renewable energy;
- ii). Increase the share of other sources of renewable energy in the power generation mix;
- iii). Implement policies and incentives to promote the deployment and increased access to affordable and reliable renewable energy technologies;
- iv). Promote the use of alternatives to fossil fuels; and
- v). Promote the Productive Use of Energy (PUE).

5.5 WATER

OUTCOME 4: INCREASED RESILIENCE OF THE WATER SECTOR TO SHOCKS

The water sector is vulnerable to the effects of climate change. Moreover, the impacts of climate change in the Zambian context are experienced mostly through water in terms of droughts and floods. Droughts are a major contributor to the scarcity of water in the country. This affects its availability for domestic, commercial, and industrial use. Additionally, flooding conditions have resulted in contamination of unprotected water sources making it unsafe for human use as well as damage to infrastructure and loss of life in some cases. Therefore, there is need to implement the following interventions to make the sector more resilient:

- i). Enhance the enabling environment by strengthening policies, legislation, strategies, plans and standards;
- ii). Develop and promote resilient water conservation and harvesting systems; and
- iii). Strengthen hydrological and water resource monitoring and assessment for early warning and planning.

5.6 INFRASTRUCTURE

OUTCOME 5: ENHANCED DEVELOPMENT OF CLIMATE SMART INFRASTRUCTURE

Infrastructure development is one of the major contributors to GHG emissions and leads to loss of biodiversity. Additionally, infrastructure in Zambia is highly vulnerable to the impacts of climate change. Therefore, greening the sector will require developing infrastructure that is low carbon and resilient. The following interventions will be executed to ensure the development of low carbon and resilient infrastructure:

i). Create an enabling environment for investments in the development of sustainable and resilient infrastructure. ;
ii). Enhance existing infrastructure to be more resilient to impacts of climate change;
iii). Build the capacity of the domestic construction industry in the provision of quality eco-friendly materials and infrastructure services; and
iv). Integrate resilience and green principles in urban and rural spatial planning.

5.7 CLIMATE SERVICES AND EARLY WARNING SYSTEMS

OUTCOME 5: STRENGTHENED CLIMATE SERVICES AND EARLY WARNING SYSTEMS

Climate services and early warning systems are essential to promote effective mitigation, adaptation and resilience to climate vulnerability. Investment in observation infrastructure will help enhance community and sectors' preparedness and response to climate threats. In this regard, the following interventions will be implemented to strengthen climate services and early warning systems:

i). Increase coverage and modernize weather, climate, and environmental observation infrastructure;
ii). Strengthen the provision of tailored weather, climate and early warning services; and
iii). Improve access to climate and weather information, and early warning services.

PILLAR 2: ENHANCED RESOURCE EFFICIENCY

Chapter Six
PILLAR 2: ENHANCED RESOURCE EFFICIENCY

6.1 OVERVIEW

Enhancing efficiency through sustainable consumption and production will be critical for attaining Zambia's green growth aspirations. In this regard, the Strategy has identified and prioritised the agriculture, mining, energy, transport and water sectors as well as the circular economy as key to enhancing resource efficiency in the country. These economic growth sectors not only consume the most resources but also have the highest potential to increase resource efficiency, enhance environmental sustainability, and support creation of green jobs.

Under the Enhanced Resource Efficiency Pillar, the implementation of the proposed measures, policies, technologies, and provision of requisite capacities aimed at reducing resource consumption, is expected to lead to the following outcomes in the selected areas.

6.2 AGRICULTURE

OUTCOME 1: INCREASED AGRICULTURAL PRODUCTIVITY

The agricultural sector suffers from low productivity. It is therefore imperative that productivity of the sector is enhanced for increased output, income, and poverty reduction, particularly for small-scale farmers. The following interventions will be implemented to increase agricultural productivity:

i). Enhance the delivery of extension services;
ii). Increase access to appropriate mechanization for small-scale farmers; and
iii). Promote water use efficiency in agriculture.

6.3 MINING

OUTCOME 2: ENHANCED RESOURCE USE EFFICIENCY IN THE MINING SECTOR

The envisaged increase in mining production should be underpinned by resource-efficient extraction that maximizes output per unit of ore extracted and promotes cleaner processing technologies that decarbonise the sector. Additionally, there is a need to enhance value addition to optimise resource utilisation. In this respect, the following interventions will be implemented to enhance resource efficiency in the mining sector:

i). Develop and implement transparency and accountability mechanisms throughout the mining value chains;
ii). Enhance geological mapping and mineral resource exploration for efficient and sustainable commercial exploitation of mineral resources in Zambia;
iii). Enhance ICT applications and remote sensing technologies in monitoring mining operations;
iv). Promote joint ventures between foreign and local players to enhance capacity in the mining value chain; and

v). Enhance technical support and skills training for artisanal and small-scale mining to meet industry efficiency requirements.

6.4 ENERGY

OUTCOME 3: INCREASED DEPLOYMENT OF ENERGY EFFICIENT TECHNOLOGIES AND PRACTICES

Enhanced deployment of energy efficient technologies and practices, including through public private partnerships, is key to the attainment of Zambia's green growth aspirations. In this regard, energy efficiency will contribute to the reduction in energy costs and greenhouse gas emissions. In view of this, the following interventions will be implemented to achieve this outcome:

i). Create an enabling environment for increased adoption of energy-efficient technologies and practices in all sectors;
ii). Increase awareness on energy efficiency and conservation; and
iii) Adopt energy efficient materials, technologies and practices in building envelopes.

6.5 TRANSPORT

OUTCOME 4: ENHANCED SUSTAINABLE MOBILITY

While motorised transport is imperative for economic development in Zambia, it is also true that it is currently inefficient and has contributed to a wide range of negative social, economic and environmental impacts including traffic congestion, accidents and is a contributor to urban air pollution and greenhouse gas emissions. There is, therefore, need to decouple negative transport externalities from economic growth to achieve comprehensive sustainability in the transport sector. To enhance sustainable mobility, the following interventions will be implemented:

i). Develop public private partnerships for the creation of rapid transit systems in major cities;
ii). Create an enabling environment for the rollout of e-mobility; and
ii)i. Provide infrastructure to promote non-motorised transportation and eco-mobility transportation systems.

6.6 WATER

OUTCOME 5: ENHANCED RESOURCE EFFICIENCY THROUGH WATER-ENERGY-FOOD-ECOSYSTEMS NEXUS APPROACHES

There is a need to avoid sectoral approaches by pursuing an integrated approach in the utilisation of water for energy and food production while protecting and conserving ecosystems. This will avert the inefficient utilisation of water resources, avoid potential conflicts and ensure the attainment of adequate water, energy and food security and the effective functioning of vital ecosystems. In this regard, the water-energy-food-ecosystems (WEFE) nexus will be implemented as one of the critical pathways towards attaining a low carbon, resource efficient and resilient economy. To achieve this outcome, the following interventions will be implemented:

i). Domesticate the SADC WEFE Nexus Framework at country level;
ii). Strengthen the undertaking of periodic WEFE Nexus Assessments at national and sub-national levels;
iii). Establish and strengthen multi-stakeholder platforms and partnerships for the WEFE nexus;
iv). Strengthen ecosystem-based approaches to preventing biodiversity loss and improving water, energy and food security; and
v). Capacity building on the WEFE nexus approach.

6.7 CIRCULAR ECONOMY

OUTCOME 6: ENHANCED APPLICATION OF CIRCULAR ECONOMY PRINCIPLES IN ALL SECTORS

Zambia aspires to transform the current linear economy into a circular model to achieve sustainable consumption and production. The circular economy offers solutions for advancing sustainable consumption and production and the transition to inclusive green growth; reducing and eliminating waste and pollution through intelligent design; keeping products and materials in use; and regenerating and growing natural wealth through economic and fiscal policies that nurture and embrace nature-based solutions. To enhance circularity, the following cross-sectoral interventions will be implemented:

i). Create an enabling environment that supports and incentivises greater circulation of goods and materials;
ii). Develop and implement circular supply chains within industry;
iii). Design out waste;
iv). Enhance cleaner production;
v). Enhance the implementation of the waste management hierarchy;
vi). Enhance recycling of waste to high value products;
vii). Promote environmentally sound waste management;
viii). Improve pollution prevention and control in industrial processes; and
ix). Create an enabling environment for eco-labeling for products and services.

PILLAR 3: ENHANCED NATURAL CAPITAL

Chapter Seven:
PILLAR 3: ENHANCED NATURAL CAPITAL

7.1 OVERVIEW

Zambia is endowed with abundant natural resources that are largely unsustainably managed. Over time, persistent unsustainable utilisation of natural resources on which communities are dependent, has resulted in degradation and depletion of the natural capital. Additionally, unsustainable management of natural resources has increased vulnerability of the economy and communities to the impacts of climate change and other shocks. To enhance natural capital, the outlined interventions will be implemented under the following key areas.

7.2 LAND

OUTCOME 1: STRENGTHENED SUSTAINABLE LAND MANAGEMENT

Strengthening Land Management (SLM) will integrate land, water, biodiversity, and environmental management for the delivery of sustainable ecosystem services and livelihoods. Thus, the following interventions on sustainable land management will be implemented:

    i)   Reduce land degradation and restore degraded areas;
    ii) Promote sustainable land conversion;
    iii) Protect ecologically sensitive areas; and
    iv) Promote and enforce land zoning.

7.3 FORESTS

OUTCOME 2: STRENGTHENED SUSTAINABLE FOREST RESOURCES AND ECOSYSTEM MANAGEMENT

Promotion of sustainable forest and ecosystem management will ensure the long-term productivity of forests while protecting biodiversity, mitigating the effects of climate change, and supporting the livelihoods of local communities. The following interventions will be implemented to enhance sustainable forest management:

    i)   Strengthen the policy and regulatory framework on management of forests, protected and conservation areas;
    ii) Enhance institutional capacity for the enforcement of forestry legislation;
    iii) Promote forest regeneration and afforestation;
    iv) Promote forest carbon stock management programmes and projects;
    v) Promote investments in environmentally friendly forest-based enterprises; and
    vi) Enhance value chains and research on timber and non-timber forest products.

7.4 WATER

OUTCOME 3: STRENGTHENED WATER MANAGEMENT

Water as a natural resource, requires prioritizing its protection, conservation and sustainable utilisation through restoration of ecosystems, and the adoption of water-saving technologies. Efficient water abstraction practices should also be utilised to enhance the protection and conservation of the water resource. To effectively monitor water resource availability and utilisation over time, and to ensure adequate data and information to support effective planning, decision making and policy formulation, there is need to improve the availability of water statistics and to strengthen the environmental economic accounting for all water resources that Zambia is endowed with. In this regard, the following interventions will be implemented to enhance water management:

i) Strengthen the management of water resources in protected areas;
ii) Promote sustainable water conservation and utilisation practices; and
iii) Strengthen nature-based approaches in the management of watersheds/water catchments.

7.5 MINERALS

OUTCOME 4: ENHANCED RESTORATION OF WASTELANDS IN MINING OPERATIONS

Expansion in mineral exploration and extraction adversely impact the environment resulting in deforestation, forest and land degradation. Additionally, current technologies tend to pollute the air, water and land with heavy metals. The following interventions will be implemented to enhance sustainable mining:

i) Promote mining technologies that limit environmental damage;
ii) Enhance the use of sustainable waste disposal technologies; and
iii) Promote the restoration and management of mine wastelands.

7.6 TOURISM – PROTECTED AND CONSERVATION AREAS

OUTCOME 5: ENHANCED NATURAL RESOURCE BASE FOR ECOTOURISM

Ecotourism is dependent on sustainable management of the ecosystem as well as the traditional cultures that subsist in natural areas. Natural areas with fauna and flora, require protection for them to continue offering eco attraction and services to society. In addition, there is need to restore areas of high conservation value that have been degraded. The following interventions will be implemented to enhance tourism in protected and conservation areas:

i) Strengthen the policy and regulatory framework on management of protected and conservation areas;
ii) Enhance institutional capacity for the enforcement of wildlife legislation;
iii) Engage the participation of local communities in conservation; and
iv) Provide alternative livelihoods to communities living in protected and conservation areas.

7.7 NATIONAL AND SUB-NATIONAL ENVIRONMENTAL STATISTICS

OUTCOME 6: ENHANCED NATIONAL AND SUB-NATIONAL ENVIRONMENTAL STATISTICS AND ENVIRONMENTAL ECONOMIC ACCOUNTING FOR NATURAL CAPITAL

As part of the green transition, Zambia will improve the generation of data on natural resources as well as the valuation of natural resources and ecosystem services. This will contribute to enhanced understanding of the interaction of the economy and the environment and inform evidence-based policy decision making. Zambia will also domesticate international recommendations on environmental statistics as applied to different categories of natural capital such as water, land, forests, minerals and ecosystems. The following interventions will be executed:

i) Establish environmental data and statistical standards;
ii) Formulate a comprehensive data collection and management system;
iii) Establish decision support systems and planning tools;
iv) Undertake periodic (annual) environmental economic accounting for natural capital at national and sub-national levels; and
v) Capacity building and institutional strengthening with respect to environmental statistics and environmental economic accounting for natural capital.

PILLAR 4: IMPROVED INCLUSIVITY

Chapter Eight:
PILLAR 4: IMPROVED INCLUSIVITY

8.1 OVERVIEW

Social inclusion and human welfare remain key to the attainment of Zambia's development and economic transformation goals. As Zambia transitions towards a green economy, it is imperative to enhance opportunities for every citizen including women, the youth, persons with disabilities, the aged, and people living with HIV/AIDS to sustain their livelihoods. Persistent poverty largely due to limited access to basic services; inadequate infrastructure; and low integration in social protection programmes, excludes these vulnerable categories of the Zambian society from the development process. To improve social inclusion, the outlined interventions will be implemented.

8.2 SUSTAINABLE LIVELIHOODS

OUTCOME 1: ENHANCED OPPORTUNITIES FOR SUSTAINABLE LIVELIHOODS

Limited livelihood prospects constrain the participation of the poor and vulnerable groups in economic development. There is, therefore, a need to expand the creation of opportunities for sustainable livelihoods for the vulnerable groups especially in rural areas. In this regard, the following interventions will be implemented to enhance opportunities for sustainable livelihoods:

i. Facilitate green business development services to MSMEs and Cooperatives;
ii. Promote research, innovation and technology including digital techonology to MSMEs and Cooperatives; and
iii. Facilitate access to affordable green finance for MSMEs and Cooperatives.

7.4 SOCIAL PROTECTION

OUTCOME 2: STRENGTHENED INCLUSIVE SOCIAL PROTECTION

The current social protection system, although acknowledged as a major tool for promoting sustainable development, falls short. Consequently, to address the pressing issues of climate change and foster the green economy, it is crucial to extend social protection to all sectors. In this regard, the following social protection interventions will be implemented:

i). Revise the social protection policy to ensure that it combines the economic, social, and environmental facets of sustainable development; and
ii). Promote social dialogue and the active involvement of stakeholders, including vulnerable groups to increase awareness of the green growth agenda.

7.5 ACCESS TO BASIC SERVICES

OUTCOME 3: INCREASED ACCESS TO BASIC SERVICES

Access to human basic needs and services such as water and sanitation, health care, electricity, and housing, is adversely affected by climate change and other shocks. Therefore, as Zambia transitions to a green economy, there is a need to enhance access to basic services in the light of climate change and other shocks. To improve access to basic services, the following interventions will be implemented:

i.   Increase access to water supply and sanitation services ;
ii.   Increase access to electricity in rural areas; and
iii. Reduce the incidence of climate sensitive diseases.

7.6 EDUCATION AND SKILLS FOR INCLUSIVE GREEN JOBS

OUTCOME 4: ENHANCE EDUCATION, TRAINING AND SKILLS DEVELOPMENT FOR INCLUSIVE GREEN JOBS

Education, training and skills development are prerequisites for societal behaviour change, the creation of inclusive and sustainable green jobs and to enable the effective transition of Zambia to a green economy. The shift to a green economy will require new skills and technologies for low carbon development. This implies a just transition that facilitates the creation of green jobs as well as helps businesses use natural resources efficiently and sustainably. In this regard, the following interventions will be implemented to enhance education and skills for inclusive green jobs:

i.   Revise the existing curricula at all levels of the education system to integrate green growth; and
ii. Develop a national and sectoral green jobs plan.

ENABLING CONDITIONS FOR GREEN GROWTH

Chapter Nine:
ENABLING CONDITIONS FOR GREEN GROWTH

9.1 OVERVIEW

Zambia is endowed with abundant natural resources which, when utilised sustainably, have the potential to anchor the desired sustainable development for the country. The implementation of the outlined interventions under each strategic objective will contribute to transitioning Zambia to a low carbon, climate resilient, resource efficient and socially inclusive economy by 2030. However, the implementation of interventions need to be undertaken concurrently with the execution of enablers that will unlock green growth in Zambia.

The enablers of green growth to be executed include enhanced macroeconomic stability; strengthened regulatory and policy frameworks; enhanced mobilisation of financial resources; strengthened human and technical capacity; and enhanced research, technology and innovation capacity, as detailed below.

9.2 MACROECONOMIC STABILITY

OUTCOME 1: ENHANCED MACROECONOMIC STABILITY

Macroeconomic stability is positively correlated to economic growth and enables other macroeconomic objectives such as employment and stable prices to be achieved. In this vein, Government is undertaking strategic policy reforms with support from the International Monetary Fund (IMF) and the World Bank under the 8NDP framework. The reforms are expected to produce macroeconomic stability that will support increased contribution of green economic actions to overall growth.

In implementing the National Green Growth Strategy, the Government will endeavour to maintain a stable macroeconomic environment as articulated in the Vision 2030 and the National Development Plans thus far formulated and executed. In this regard, the macroeconomic interventions are:

   i).   Reduce the fiscal deficit to 3.6 percent of GDP by 2026 and maintain this to 2030;
   ii). Maintain an annual domestic revenue to GDP ratio of at least 21 percent;
   iii). Contain domestic borrowing to less than 4.8 percent of GDP by 2026 and maintain this to 2030;
   iv). Dismantle domestic arrears and curtail accumulation of new arrears;
   v).   Reduce and maintain inflation within the target range of 6-8 percent;
   vi). Maintain international reserves of at least 3 months of import cover; and
   vii). Reduce the external debt to 60 percent of GDP and ensure sustainability.

9.3 REGULATORY AND POLICY FRAMEWORK

OUTCOME 2: STRENGTHENED REGULATORY AND POLICY FRAMEWORKS

For an effective and smooth transition to a green economy to be attained, adequate regulatory and policy frameworks need to be put in place. Government regulations and standards will need to be developed and reviewed to provide an effective overall policy framework to encourage the transition to a green economy.

A clear, predictable and stable policy environment can create the confidence required to stimulate private investment. Regulations and incentives are needed for stimulating green investments and addressing externalities, which have led to an inefficient use of resources. There will also be a need to strengthen the institutional coordination mechanism for green growth. The following interventions will be implemented to strengthen the regulatory and policy frameworks:

i). Mainstream green growth in national and sub-national policies;
ii). Enhance enforcement and implementation of existing policies and regulations on the environment and natural resources; and
iii). Develop policies and regulations that promote green growth.

9.4 MOBILISATION OF FINANCIAL RESOURCES

OUTCOME 3: ENHANCED MOBILISATION OF FINANCIAL RESOURCES

Predictable access to adequate financing is imperative in light of Zambia's colossal financial resource requirement to facilitate transitioning the country to a green economy. Therefore, mobilisation of financial resources will be enhanced through strategies that will position the country as the preferential destination for green finance as well as a financial hub for green investments. Additionally, to attract green finance, Zambia's green growth opportunities in various sectors will be leveraged on to harness green investible projects.

Several sources of financial resources including the public sector budget; public private partnerships; bilateral and multilateral development finance institutions; commercial financial institutions, and institutional investors; private equity and venture capital funds; and blended finance, will be pursued. Additionally, the public sector budget resources will be realigned for execution of green growth actions while interventions that foster private sector financing will be prioritised. Further, innovative financing instruments such as green bonds, green funds, green loans, credit guarantee schemes and debt for nature swaps, will be utilised. The following broad interventions will be implemented to enhance mobilisation of financial resources:

i). Establish strategic policies for a green financial system;
ii). Increase supply and demand for transition and green finance in Zambia;
iii). Strengthen capacity-building and research and development among stakeholders; and
iv). Enhance the assessment, measurement and reporting of green finance activities and their impacts.

9.5 CAPACITY BUILDING

OUTCOME 4: STRENGTHENED HUMAN AND TECHNICAL CAPACITY

To effectively green growth in Zambia, there is need for stakeholders to develop and acquire new skills across sectors and management levels. Therefore, capacity building interventions, including the formulation of a comprehensive Human Resource Development Plan, will be implemented to actualise the objectives of the Green Growth Strategy. Long-term and short-term capacity building programmes in courses that promote a green economy will target members of staff from key government line ministries, provinces and agencies; the private sector; academia; and civil society. Emphasis will be placed on the inclusion

of women, the youth and the people living with disabilities in the training programmes. The following intervention will be implemented:

i). Formulate a comprehensive Human Resource Capacity Development Framework for greening growth in Zambia; and

ii) Enhance institutional capacity building in climate, peace and security.

9.6 RESEARCH, TECHNOLOGY AND INNOVATION CAPACITY

OUTCOME 5: ENHANCED RESEARCH, TECHNOLOGY AND INNOVATION CAPACITY

Investment in research, technology including digital technology and innovation is vital for development. Zambia will, therefore, invest in research, technology and innovation to replace outdated technologies and build a green economy. This will include investment in technology transfer involving the flow of know-how, experience and equipment for green growth among different stakeholders. South-south technology transfer and collaboration will also be utilised to accelerate the deployment of green technologies. The following interventions will be implemented:

i). Nurture and attract green technology including digital technology specialists;

ii). Establish green research and development community of practice composed of industries, academia, and research institutions;

iii). Create fora for green technology including digital technology commercialisation; and

iv). Promote the exchange of green knowledge with leading global research institutions.

IMPLEMENTATION AND COORDINATION FRAMEWORK

Chapter Ten:
IMPLEMENTATION AND COORDINATION FRAMEWORK

10.1 OVERVIEW

The accomplishment of the objectives and ultimately, the realisation of the vision for green growth in Zambia, will require utilizing a strong implementation and coordination framework to provide guidance in the implementation of the Strategy. Additionally, it will be critical for Zambia to employ an institutional arrangement that allows for transparent and effective flow of information, knowledge and financial resources. In this regard, the implementation and coordination of the Strategy will be built upon existing institutional structures for coordination of the implementation of climate change and national development planning in the country. Implementation and coordination of the Green Growth Strategy will be at five (5) levels namely national, sectoral, provincial, district and ward level as explained below.

10.2 NATIONAL LEVEL IMPLEMENTATION AND COORDINATION

I. CABINET

The Cabinet, chaired by the President of the Republic of Zambia, will provide overall policy direction to ensure that the objectives of the Green Growth Strategy are realised. It will facilitate the provision of an enabling environment for the successful implementation of the Strategy. Further, it will interface with the National Assembly through the introduction of regulations on the implementation of green growth in the country.

II. COUNCIL OF MINISTERS ON CLIMATE CHANGE

The Council of Ministers on Climate Change, chaired by the Vice President of the Republic of Zambia, will provide policy guidance on the execution of the Green Growth Strategy and will feed into Cabinet for overall policy direction on green growth. It will interact with the National Development Coordinating Committee (NDCC), which coordinates national development processes, and the Steering Committee of Permanent Secretaries on Climate Change.

III. NATIONAL DEVELOPMENT COORDINATING COMMITTEE

The NDCC, chaired by the Minister of Finance and National Planning (MoFNP), will provide policy guidance on green growth to the Cluster Advisory Groups (CAGs) particularly the Cluster on Environmental Sustainability. Through the Minister of Finance and National Planning, as necessary, the NDCC will report on green growth matters to both Cabinet and the Council of Ministers on Climate Change.

IV. OTHER COORDINATION STRUCTURES

10.3 SECTORAL LEVEL IMPLEMENTATION AND COORDINATION

I. CLUSTER ADVISORY GROUPS

The CAGs, co-chaired by Permanent Secretaries and non-state actors, will provide guidance to the sectors on green growth matters. All sectoral green growth matters on resilient and climate compatible economic growth, and enhanced resource efficiency will be deliberated on in the Cluster on Economic Transformation and Job Creation of the 8NDP, while all sectoral green growth issues on improved inclusivity will be deliberated on in the Cluster on Human and Social Development of the 8NDP. In addition, green growth issues on enhanced natural capital will be discussed in the Cluster on Environmental Sustainability of the 8NDP whereas green growth matters on the enabling environment will be tabled in the Cluster on a Good Governance Environment of the 8NDP.

II. STEERING COMMITTEE OF PERMANENT SECRETARIES ON CLIMATE CHANGE

The Steering Committee of Permanent Secretaries on Climate Change, chaired by the Secretary to the Cabinet, will provide guidance to the Technical Committee on Climate Change and feed into the 8NDP CAGs and vice versa.

III. TECHNICAL COMMITTEE ON CLIMATE CHANGE

The Technical Committee on Climate Change, chaired by the Permanent Secretary responsible for green economy, will initiate all technical matters on green growth and feed into the Steering Committee of Permanent Secretaries on Climate Change. In addition, the Technical Committee on Climate Change will interact with the Technical Working Groups (TWGs) of the CAGs of the 8NDP on green growth matters arising from the implementation of the 8NDP.

IV. TECHNICAL WORKING GROUPS OF THE CLUSTER ADVISORY GROUPS OF THE 8NDP

The Technical Working Groups (TWGs) of the CAGs will deliberate on technical level green growth issues and will interact with the Technical Committee on Climate Change. The TWGs will feed into and will be guided by the CAGs on all matters of green growth.

10.4 PROVINCIAL LEVEL COORDINATION AND IMPLEMENTATION

The Provincial Development Coordinating Committees (PDCCs) will facilitate the participation of state and non-state actors including the private sector, civil society, the traditional establishment and the academia in the implementation and monitoring of the Green Growth Strategy at provincial level. The PDCCs will work to ensure that provinces embrace and start implementing the green growth agenda through implementation of plans, programmes and projects, and will make use of the provincial level 8NDP sub-committees on Economic Transformation and Job Creation, Human and Social Development, Environmental Sustainability and Good Governance Environment. The PDCCs will also provide oversight to the districts regarding the execution of the Green Growth Strategy. Additionally, the PDCCs will feed into the CAGs at sectoral level as well as the NDCC at national level.

10.5 DISTRICT LEVEL COORDINATION AND IMPLEMENTATION

The District Development Coordinating Committees (DDCCs) will ensure that state and non-state actors including the private sector, civil society, the traditional establishment and the academia operating in the district collaborate on the implementation of green growth actions. The DDCCs will actualise the green growth agenda through the implementation of plans, programmes and projects, and will make use of the district level 8NDP sub-committees on Economic Transformation and Job Creation, Human and Social Development, Environmental Sustainability and Good Governance Environment. The DDCCs will also provide oversight to the wards regarding the execution of the Green Growth Strategy at that level. Additionally, the DDCCs will feed into the PDCCs at provincial level.

FIGURE 10.1: IMPLEMENTATION AND COORDINATION FRAMEWORK FOR THE GREEN GROWTH STRATEGY
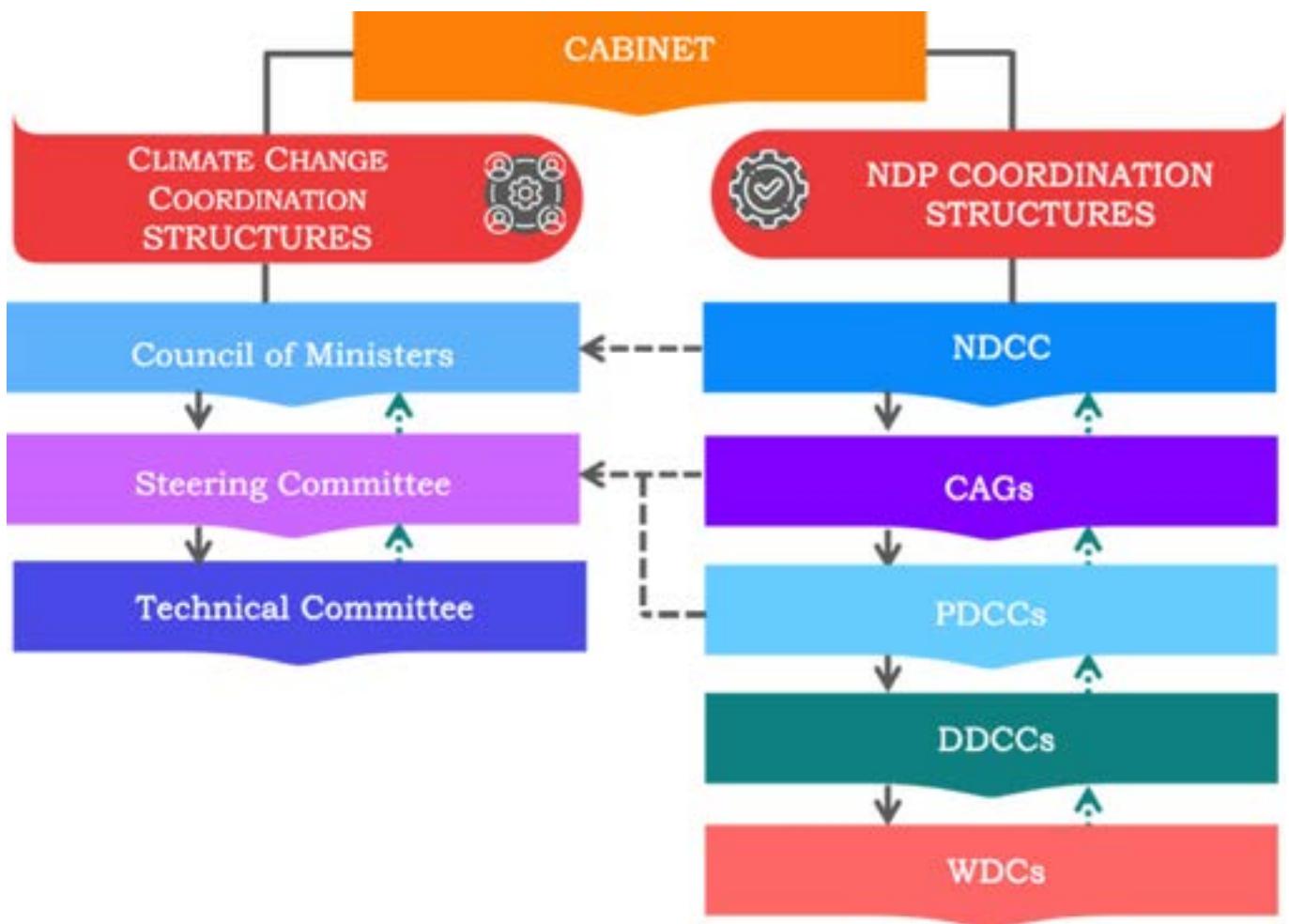
10.6 WARD LEVEL COORDINATION AND IMPLEMENTATION

Implementation of green growth actions at ward level will be undertaken by the Ward Development Committees (WDCs). The WDCs will mainstream green growth in ward and constituency plans and ensure the greening of the Constituency Development Fund (CDF). In addition, the WDCs will report to the DDCCs on the execution of green growth actions. The capacity of the WDCs will need to be enhanced to allow for effective coordination of green development programme outputs at the ward and constituency levels.

10.7 ROLES AND RESPONSIBILITIES OF INSTITUTIONS IN THE MANAGEMENT OF THE STRATEGY

The following institutions will play key roles in ensuring that the management of the Strategy is in line with the set objectives.

I. CABINET

Cabinet will provide leadership and policy direction to ensure the timely actualization of the objectives of the Green Growth Strategy. The Cabinet will facilitate the provision of an enabling environment for smooth and timely implementation of the Strategy.

II. MINISTRY OF GREEN ECONOMY AND ENVIRONMENT

The Ministry of Green Economy and Environment (MGEE) will coordinate all climate change coordination structures namely the Council of Ministers on Climate Change, the Steering Committee of Permanent Secretaries and the Technical Committee. Additionally, the MGEE will coordinate all green growth matters on Environmental Sustainability of the 8NDP. The Ministry will be the secretariat of the Council of Ministers on Climate Change, the Steering Committee of Permanent Secretaries, the Technical Committee as well as the Environmental Sustainability Cluster of the 8NDP.

III. MINISTRY OF FINANCE AND NATIONAL PLANNING

The MoFNP will provide overall coordination of the green economy agenda through the 8NDP advisory bodies namely the NDCC as well as the CAGs and associated TWGs. In addition, the MoFNP and the MGEE will coordinate to ensure that matters on green growth arising from the CAGs and TWGs feed into the Steering Committee of Permanent Secretaries and the Technical Committee on Climate Change and vice versa. The MoFNP will also be responsible for budget execution and facilitate resource mobilisation for financing to support interventions contained in the Strategy, in collaboration with the MGEE.

IV. PROVINCIAL ADMINISTRATIONS

The provincial administrations through the Provincial Planning Units (PPUs) will coordinate the implementation of the Green Growth Strategy at provincial level. The PPUs will be the secretariats of the PDCCs on matters of green growth.

V. DISTRICT ADMINISTRATIONS

The district administrations through the local authorities will coordinate the implementation of the Green Growth Strategy at district level. The local authorities will be the secretariats of the DDCCs on matters of green growth.

10.8 MONITORING AND EVALUATION FRAMEWORK

The Green Growth Strategy will utilise a results-based monitoring and evaluation framework to track progress in the implementation of the Strategy and to inform future Green Growth Strategy development. The Strategy has identified four (4) strategic objectives which have key performance indicators that will track progress towards attainment of outcomes of the Strategy. Additionally, the monitoring and evaluation

framework will set out roles and responsibilities of all institutions involved in the monitoring and evaluation activities to contribute to the measurement of the overall progress in the implementation of the GGS.

10.8.1 Monitoring

The monitoring of the implementation of the Green Growth Strategy will be undertaken periodically in accordance with the monitoring and evaluation framework. Progress will be tracked using the results framework, encompassing agreed indicators and targets from national to provincial, district and ward levels.

10.8.2 Evaluation

The Green Growth Strategy will be evaluated at mid-term and at end-term. A Mid-Term Review (MTR) of the Strategy will be undertaken to assess progress made towards the attainment of Strategy outcomes. The purpose of the MTR is to generate evidence to inform the Green Growth Strategy implementation at the midpoint and feed into the development of the subsequent Green Growth Strategy. A final evaluation of the Strategy will be undertaken to assess the impact and ascertain lessons learnt from implementation of the Strategy. The final Strategy evaluation report will be produced within a year after the expiry of the implementation of the Strategy.

ANNEX I: IMPLEMENTATION, MONITORING AND EVALUATION FRAMEWORK

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20)		Time frame	Implementing Agency
							ZMW ('000)	US$ ('000)		
PILLAR 1: RESILIENT AND CLIMATE COMPATIBLE GROWTH										
Enhanced resilience in the agriculture sector	Promote the use of climate smart technologies and practices in crops, fisheries and livestock	Land under climate smart agriculture increased	Hectares of land under climate smart agriculture.	300,000ha	2022	800,000ha	600.000	30.000	2024-2030	MoA
		Adoption of climate smart agricultural technologies and practices increased	Number of female and male farmers adopting climate smart agricultural technologies and practices.	1,000,000	2022	2,500,000	75.000	3.750	2024-2030	MoA
		Sustainable livestock programmes developed	Number of sustainable livestock programmes developed	3	2022	5	400.000	20.000	2024-2030	MFL
		Sustainable livestock programmes adopted	Number of female and male farmers adopting sustainable livestock programmes	300,000	2022	500,000	200.000	10.000	2024-2030	MFL
		Emissions from the agriculture sector reduced	Level of emissions reduced from the agriculture sector	120,507.7 GgCO2eq	2010	1.232GgCO-2eq	2,000.000	100.000	2010-2030	MoA MFL
		Sustainable fisheries programmes developed	Number of sustainable fisheries programmes developed	4	2022	6	600.000	30.000	2024-2030	MFL
		Sustainable fishing practices adopted	No. of fishers adopting sustainable fishing practices	38,000	2022	58,000	900.000	45.000	2024-2030	MFL
		Sustainable aquaculture programmes adopted	No. of female and male farmers adopting sustainable aquaculture programmes	11,230	2022	19,230	1,000.000	50.000	2024-2030	MFL
		Fish farmers access to affordable financing increased	No. of female and male fish farmers accessing affordable financing	2,743	2023	4,450	2,300,820.08	115,041	2024-2030	MFL/MSME
		Cultivation of improved pasture expanded	Hectares of improved pasture planted	21,323ha	2022	28,323ha	35.000	1.750	2024-2030	MoA MFL
		Production of pasture seed expanded	Number of female and male farmers producing pasture seed	55	2022	700	8.000	400	2024-2030	MoA MFL
		Growing of pasture and fodder crops increased	Number of female and male farmers growing pasture and fodder crops	85,291	2022	120,291	10.000	500	2024-2030	MoA MFL
Strategy Total							8,128,820	406,441		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20]) ZMW ('000)	Cost (1US$/K20]) US$ ('000)	Time frame	Implementing Agency
	Enhance the development of resilient irrigation infrastructure	Small-Scale farmer led irrigation schemes constructed	Number of small-scale farmer-led irrigation schemes constructed	0	2022	200	2,000,000	100,000	2024–2030	MoA MFL
		Small earth dams rehabilitated	Number of small earth dams rehabilitated	2,500	2022	15	1,200,000	60,000	2024–2030	MoA MFL MIHUD MWDS
		Small earth dams constructed	Number of small earth dams constructed	2,500	2022	50	10,000,000	500,000	2024–2030	MoA MFL MIHUD MWDS
		Large dams for agricultural irrigation constructed	Number of large dams constructed	1	2022	3	1,050,000	52,500	2024–2030	MoA MFL MIHUD MWDS
Strategy Total							**14,250,000**	**712,500**		
	Strengthen research and development	Climate smart crop varieties developed and promoted	Number of climate smart crop varieties developed and promoted	22	2023	15	150,000	7,500	2024–2030	MoA
		Climate smart agricultural practices developed, validated and promoted	Number of climate smart agricultural practices developed, validated and promoted	6	2022	14	35,000	1,750	2024–2030	MoA
		Climate smart agricultural technologies developed, validated, and implemented.	Number of climate smart agricultural technologies developed, validated, and implemented.	3	2022	10	200,000	10,000	2024–2030	MoA MFL
Strategy Total							**385,000**	**19,250**		
	Promote the use of agricultural insurance by small-scale farmers	Small-scale farmers' insurance products developed	Number of agricultural insurance products targeting small-scale farmers developed	6	2023	12	40,000	2,000	2024–2030	PIA MoA MFL
		Small-scale farmers' insurance products marketed	Number of female and male small-scale farmers on agricultural insurance	1,024,434	2023	2,000,000	40,000	2,000	2024–2030	MoFNP
Strategy Total							**80,000**	**4,000**		
Outcome Total Budget							**22,843,820**	**1,142,191**		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20)) ZMW ('000)	Cost (1US$/K20)) US$ ('000)	Time frame	Implementing Agency
Increased resilience to shocks in the tourism sector	Increase opportunities for local and foreign investment partnerships	Investment partnerships for foreign and local investors increased	Number of investment partnerships	0	2023	50	200,000	10,000	2024-2030	MoT ZTA ZDA
Strategy Total							**200,000**	**10,000**		
	Enhance the diversification of climate resilient tourism products	Training programmes on climate resilient tourism products enhanced	Number of training programmes on climate resilient tourism products	0	2023	10	10,000	500	2024-2030	MoT ZTA
		Wildlife-based tourism promoted	Number of hotels, lodges and tourism establishments practicing wildlife-based tourism	3	2023	15	2,600	130	2024-2030	MoT ZTA
Strategy Total							**12,600**	**630**		
	Scale up domestic tourism initiatives and marketing of tourism by locals	Increased domestic tourism initiatives and scaled up tourism marketing by locals	Domestic tourism strategy published	0	2023	1	1,000	50	2024-2030	MoT ZTA
Strategy Total							**1,000**	**50**		
	Enhance the establishment of green tourism infrastructure.	Establishment of green tourism infrastructure enhanced	Number of policies, strategies and regulatory frameworks supporting the establishment of green tourism infrastructure	0	2023	5	5,000	250	2024-2030	MoT ZTA
Strategy Total							**5,000**	**250**		
	Upscale investments in tourism products' diversification	Investments in tourism products increased	Number of tourism products diversified including culture and arts	3	2023	7	20,000	1,000	2024-2030	MoT ZTA
		MICE marketing plan developed	MICE marketing plan published	0	2023	1	1,500	75	2024-2030	MoT ZTA
		MICE unit established	MICE unit established and functional	0	2023	1	1,500	75	2024-2030	MoT ZTA
Strategy Total							**23,000**	**1,150**		
Outcome Total Budget							**241,600**	**12,080**		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20) ZMW ('000)	Cost (1US$/K20) US$ ('000)	Time frame	Implementing Agency
Increased deployment and adoption of renewable energy technologies	Develop financing and resource mobilization instruments, including de-risking facilities to catalyze deployment of renewable energy	Renewable energy financing schemes developed	Number of renewable energy financing schemes developed	3	2022	6	9,000	450	2024-2030	MoE
		Funds for implementation of renewable energy actions mobilized	Amount of funds mobilized	43,980	2022	800,000	9,000	450	2024-2030	MoE/MoFNP
		Renewable energy developers benefitting from financing schemes increased	Number of female and male renewable energy developers benefiting from financing schemes	6	2022	10	800,000	40,000	2024-2030	MoFNP/MGEE/MoE
		Risk mitigation facilities for financing renewable energy projects developed	Number of risk mitigation facilities developed for financing renewable energy projects	2	2022	3	9,000	450	2024-2030	MoE/MoFNP
Strategy Total							**827,000**	**41,350**		
	Increase the share of other sources of renewable energy in the power generation mix	Share of other sources of renewable energy in the power generation mix increased	Percentage of other sources of renewable energy in the total national installed electricity generation capacity	3%	2022	17%	74,440,000	3,722,000	2024-2030	MoE/ZESCO/ERB
Strategy Total							**74,440,000**	**3,722,000**		
	Implement policies and incentives to promote the deployment and increased access to affordable and reliable renewable energy technologies	Policies and incentives to promote the deployment of renewable energy technologies implemented	Streamlined licensing procedures for renewable energy developers	0	2022	1	15,000	750	2024-2030	MoE/REA
			Number of incentives on renewable energy technologies	2	2022	4	45,000	2,250	2024-2030	MoE/MoFNP
Strategy Total							**60,000**	**3,000**		
	Promote the use of alternatives to fossil fuels	Framework for biofuel infrastructure developed	Framework for biofuel infrastructure development published	0	2022	1	1,000	50	2024 - 2030	MoE/ERB/REA
		Private sector investments in biofuels infrastructure increased	Number of private sector investments in biofuels infrastructure	3	2022	15	1,000	50	2024-2030	MoE/ZESCO
		Share of biodiesel in petroleum products introduced	Percentage share of biodiesel in petroleum products	0%	2022	5%	310,000	15,500	2024-2030	MoE/ERB

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20)		Time frame	Implementing Agency
							ZMW ('000)	US$ ('000)		
		Share of bioethanol in petroleum products introduced	Percentage share of bioethanol in petroleum products	0%	2022	10%	310,000	15,500	2024-2030	MoE/ERB
		Energy switch from fossil fuels to renewable energy enhanced	Percentage of energy switch from fossil fuels to renewable energy	0%	2022	20%	500,000	25,000	2024-2030	MoE/ERB
Strategy Total							1,122,000	56,100		
	Promote the Productive Use of Energy (PUE)	Productive Use of Energy (PUE) promoted	Number of female and male rural SMEs using renewable energy to generate income	8,000	2022	9,000	5,000	250	2024-2030	MoE/REA
Strategy Total							5,000	250		
Outcome Total Budget							76,454,000	3,822,700		
Increased resilience of the water sector to shocks	Enhance the enabling environment by strengthening policies, legislation, plans and standards	Enabling environment enhanced	Number of policies, legislation, plans and standards strengthened	5	2023	9	20,000	1,000	2024-2030	MWDS WARMA
Strategy Total							20,000	1,000		
	Develop and promote resilient water conservation and harvesting systems	National rain water harvesting strategy developed	National rainwater harvesting strategy published	0	2023	1	1,500	75	2024-2030	MWDS WARMA MIHUD
Strategy Total							1,500	75		
	Strengthen hydrological and water resource monitoring and assessment for early warning and planning.	Hydro metric stations established	Number of hydro metric stations established	229	2023	1,000	100,000	5,000	2024-2030	MWDS WARMA DMMU
		Automatic weather stations installed	Number of automatic weather stations	300	2023	500	45,000	2,250	2024-2030	MWDS WARMA MGEE
		Rainfall stations installed	Number of rainfall stations	550	2023	2,621	23,589	1,179.45	2023-2030	MWDS WARMA MGEE
		Upper air stations installed	Number of Upper Air Stations	0	2023	5	9,000	450	2024-2030	MWDS WARMA MGEE
		Radar stations installed	Number of radar Stations	0	2023	2	60,000	3,000	2024-2030	MWDS WARMA MGEE
Strategy Total							237,589	11,879		
Outcome Total Budget							259,089	12,954		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20)] ZMW ('000)	Cost (1US$/K20)] US$ ('000)	Time frame	Implementing Agency
Enhanced development of climate smart infrastructure	Create an enabling environment for investments in the development of sustainable and resilient infrastructure.	Enabling environment for investments in the development of sustainable and resilient infrastructure created	Number of policies and regulatory frameworks to create an enabling environment created	3	2023	5	20,000	1,000	2024-2030	MIHUD/MLGRD
Strategy Total							**20,000**	**1,000**		
	Enhance existing infrastructure to be more resilient to impacts of climate change	Existing infrastructure retrofitted to be more climate resilient	Number of existing infrastructure retrofitted to be climate resilient	0	2023	5	1,000,000	50,000	2024-2030	MIHUD/MLGRD
Strategy Total							**1,000,000**	**50,000**		
	Build the capacity of the domestic construction industry in the provision of quality eco-friendly materials and infrastructure services	Capacity of the domestic construction industry in the provision of quality eco-friendly materials and infrastructure services built	Number of capacity building programmes on quality eco-friendly materials and infrastructure services for domestic construction industry	0	2023	5	10,000	500	2024-2030	MIHUD/MLGRD
Strategy Total							**10,000**	**500**		
	Integrate resilience and green principles in urban and rural spatial planning	An integrated urban and rural spatial planning system that prioritises resilience and green principles developed and implemented	Number of integrated urban and rural spatial plans with resilience and green principles mainstreamed	0	2023	12	20,000	1,000	2024-2030	MIHUD/MLGRD
Strategy Total							**20,000**	**1,000**		
Outcome Total Budget							**1,050,000**	**52,500**		
Strengthened climate services and early warning systems	Increase coverage and modernize weather, climate, and environmental observation infrastructure	Coverage of modern weather, climate, and environmental observation infrastructure	Number of modern weather, climate, and environmental observation infrastructure	291	2022	840	453,600	22,680	2024-2030	MGEE
Strategy Total							**453,600**	**22,680**		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20)] ZMW ('000)	Cost (1US$/K20)] US$ ('000)	Time frame	Implementing Agency
	Strengthen the provision of tailored weather, climate and early warning services	Sector and community tailored weather, climate and early warning services provision strengthened	Number of sector and community weather, climate, and early warning advisories produced	156	2022	1092	400	20	2024–2030	MGEE/MoA/MoE/MFL/DMMU/MLGRD
Strategy Total							**400**	**20**		
	Improve access to climate and weather information, and early warning services	Access to climate, weather and early warning services improved	Percentage of females and males population accessing weather, climate, and early warning advisory services	50%	2022	70%	600	30	2024–2030	MGEE/DMMU
Strategy Total							**600**	**30**		
Outcome Total Budget							**454,600**	**22,730**		
Pillar Total Budget							**101,303,109**	**5,065,155**		
PILLAR 2: ENHANCED RESOURCE EFFICIENCY										
Increased agricultural productivity	Enhance the delivery of extension services	Farmers trained in integrated pest management	No. of female and male farmers trained in integrated pest management	12.276	2022	1,000,000	508,672.80	25,433.64	2024–2030	MoA
		Farmers trained in integrated farming	No. of female and male farmers trained in integrated farming	15.756	2022	320,000	200,000	10,000	2024–2030	MoA
		Farmers trained in integrated vector management	No. of female and male farmers trained in integrated vector management	17,365	2022	50,000	405,000	20,250	2024–2030	MFL
		No. of farmers trained in Integrated land use	No. of female and male farmers trained in Integrated land use	21,792	2022	800,000	1,040,000	52,000	2024–2030	MoA/MFL
		No. of e-extension platforms operational	No. of e-extension platforms operational	0	2022	1	200,000	10,000	2024–2030	MoA/MFL
Strategy Total							2,353,673	117,684		
	Increase access to appropriate mechanization for small-scale farmers.	Access to appropriate and affordable mechanization for small-scale farmers increased	Number of female and male small-scale farmers who own tractors with implements	304	2022	4,500	7,000	350	2024–2030	MoA/MFL
			Number of female and male small-scale farmers who own animal draught power	9,312	2022	350,000	70,000	3,500	2024–2030	MoA/MFL

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20) ZMW ('000)	Cost (1US$/K20) US$ ('000)	Time frame	Implementing Agency
			Number of female and male small-scale farmers using post-harvesting and processing equipment	0	2022	3,500	70,000	3,500	2024-2030	MoA/MFL
			Number of mechanization service centres established	0	2022	1,200	1,440,000	72,000	2024-2030	MoA/MFL
			Number of female and male small-scale farmers accessing animal draught power services	0	2022	700,000	21,000	1,050	2024-2030	MFL/MoA
			Number of female and male small-scale farmers accessing Post-harvesting and processing services	0	2022	1,000,000	10,000	500	2024-2030	MoA/MFL
			Number of female and male small scale farmers accessing mechanization funding	36,542	2022	1,500,000	50,000	2,500	2024-2030	MoA/MFL
Strategy Total							**1,668,000**	**83,400**		
	Promote water use efficiency in agriculture	water use efficiency in agriculture promoted	Land brought under efficient irrigation system increased (Ha)	4,400	2022	7,000	1,596,000	79,800	2024-2030	MoA/MFL/MWDS/MIHUD
			No. of female and male farmers engaged in irrigation	0	2022	7,000	5,000	250	2024-2030	
Strategy Total							**1,601,000**	**80,050**		
Outcome Total Budget							**5,622,673**	**281,134**		
Enhanced resource use efficiency in the mining sector	Develop and implement transparency and accountability mechanisms throughout the mining value chains	Transparency and accountability mechanisms developed and implemented throughout the mining value chains	Number of companies integrating e-monitoring systems for real time reporting of mining production activities.	200	2022	1000	800	40	2024-2030	MMMD
			Number of stakeholder engagements on integrating e-monitoring systems for real time reporting of mining production activities.	200	2022	1000	10,000	500	2024-2030	
			Guidelines on disclosure and reporting on payments to government and revenue-sharing agreements	0	2022	1	5,000	250	2024-2030	

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20)) ZMW ('000)	Cost (1US$/K20)) US$ ('000)	Time frame	Implementing Agency
			Establish public online platform for revenue collected and re-invested in local communities	0	2022	1	15,000	750	2024-2030	
			Number of companies adopting technology to enhance transparency and traceability across the value chain.	0	2022	500	5,000	250	2024-2030	
Strategy Total							**35,800**	**1,790**		
	Enhance geological mapping and mineral resource exploration for efficient and sustainable commercial exploitation of mineral resources in Zambia	Zambia's mineral resource geological mapping and mineral resource exploration for effective commercial exploitation of mineral resources in Zambia	Number of geological mapping exercises undertaken	95	2022	80	40,000	2,000	2024-2030	MMMD
			Number of geological maps produced	0	2022	20	20,000	1,000	2024-2030	
			Number of geological reports produced	0	2022	5	20,000	1,000	2024-2030	
			Number of mineral resource exploration activities undertaken	0	2022	80	100,000	5,000	2024-2030	
			Number of Mineral resource exploration maps produced	0	2022	20	20,000	1,000	2024-2030	
			Number of mineral resource exploration reports produced	0	2022	5	20,000	1,000	2024-2030	
			Number of Private Partnership agreements on mineral exploration made	0	2022	10	2,000	100	2024-2030	
Strategy Total							**222,000**	**11,100**		
	Enhance ICT applications and remote sensing technologies in monitoring mining operations	ICT applications and remote sensing technologies in monitoring mining operations enhanced	Number of companies adopting real time data collection and monitoring applications	0	2022	200	10,000	500	2024-2030	MMMD/MoTS
			Number of mining sites monitored under remote sensing technology	0	2022	100	20,000	1,000	2024-2030	
			Number of mineral occurrences/mapped areas under online geodatabase	0	2022	175	150,000	7,500	2024-2030	

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20) ZMW ('000)	Cost (1US$/K20) US$ ('000)	Time frame	Implementing Agency
			Number of officers trained to offer Capacity Building for application of ICTs in the issuance, processing and management of licenses and monitoring of mining operations	10	2022	100	20,000	1,000	2024-2030	MMMD/MoTS
			Number of Facilities developed for application of ICTs in the issuance, processing and management of licenses	0	2022	7	300,000	15,000	2024-2030	
			Establish modern technological markets for ASM sector	0	2022	20	100,000	5,000	2024-2030	
			Number of female and male artisanal, small-scale and mining cooperatives trained in ICT applications for license application and remote sensing technologies	0	2022	900	10,000	500	2024-2030	
Strategy Total							**610,000**	**30500**		
	Promote joint ventures between foreign and local players to enhance capacity in the mining value chain	Joint ventures between the foreign and local players to enhance capacity in the mining value chain promoted	Number of female and male artisanal, small-scale and mining cooperatives linked to investor partnerships	0	2022	200	30,000	1,500	2024-2030	MMMD/ZDA
			Number of promotional events per year	0	2022	20	1,500	75	2024-2030	
			Number of local-Foreign Joint ventures established	0	2022	20	1,500	75	2024-2030	
			Number of campaigns on investment ventures conducted	0	2022	20	1,500	75	2024-2030	
Strategy Total							**34,500**	**1,725**		
	Enhance technical support and skills training for artisanal and small-scale mining to meet industry efficiency requirements	Technical support and skills training for artisanal and small-scale mining to meet industry efficiency requirements enhanced	Development of regulatory mechanisms for ASM	0	2022	1	3,000	150	2024-2030	MMMD

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20) ZMW ('000)	Cost (1US$/K20) US$ ('000)	Time frame	Implementing Agency
			Number of female and male ASM trained in skills to enhance production, safety, health and environment	0	2022	900	2,500	125	2024-2030)	MMMD
			Number of trained artisanal cooperatives on modern mining technologies and productivity improvement	0	2022	200	2,000	100	2024-2030)	MMMD/MSMED
			Establish empowerment scheme for ASM to increase productivity	0	2022	900	10,000	500	2024-2030	MMMD/MCTI
Strategy Total							**17,500**	**875**		
Outcome Total Budget							**919,800**	**45,990**		
Increased deployment of energy efficient technologies and practices	Create an enabling environment for increased adoption of energy-efficient technologies and practices in all sectors	Energy efficiency strategy revised	Revised energy efficiency strategy published	0	2022	1	1,000	50	2024-2030	MoE/ERB
		Minimum Energy Performance standards on Energy Efficiency developed	Number of energy performance standards	17	2022	30	5,000	250	2024-2030	MoE/ZESCO
		Energy Labelling codes for appliances developed	Number of energy labelling codes	17	2022	30	5,000	250	2024-2030	MoE/REA
Strategy Total							**11,000**	**550**		
	Increase awareness on energy efficiency and conservation	Energy Efficiency awareness programmes implemented	Number of energy efficiency awareness programmes	1	2022	14	100,000	5,000	2024-2030	MoE
		Switch from inefficient cooking technologies to energy efficient cooking solutions	Percentage of switch from in-efficient cooking technologies to energy efficient cooking solutions	1%	2022	20%	85,000	4,250	2024-2030	MoE/ERB
		Switch from inefficient lighting technologies to energy efficient lighting solutions	Percentage of switch from in-efficient lighting technologies to energy efficient lighting solutions	5%	2022	20%	45,000	2,250	2024-2030	MoE/REA/ZESCO/ERB
		Capacity building programmes on energy efficient technologies and practices in light industries implemented	Number of capacity building programmes	0	2022	5	8,500	425	2024-2030	MoE/REA/ZESCO/ERB

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20]) ZMW ('000)	Cost (1US$/K20]) US$ ('000)	Time frame	Implementing Agency
	Adopt energy efficient materials, technologies and practices in building envelopes	Existing building codes revised to include an energy performance code	Number of building codes revised	0	2023	1	15,000	750	2024–2030	MoE/MIHUD
Strategy Total							**253,500**	**12,675**		
Outcome Total Budget							**264,500**	**13,225**		
Enhanced sustainable mobility	Develop public private partnerships for the creation of rapid transit systems in major cities	Feasibility studies to assess the technical, financial, economic, and environmental viability of the projects conducted	Number of Feasibility study reports	0	2023	3	2,000	100	2024–2026	MoTL/MoFNP
		Public private partnerships for the creation of rapid transit systems in major cities developed	Number of PPP agreements signed and implemented	0	2023	3	2,000	100	2024–2030	MIHUD
Strategy Total							**4,000**	**200**		
	Create an enabling environment for the rollout of e-mobility	Policy on e-mobility developed	Policy on e-mobility	0	2023	1	1,000	50	2024–2026	MoTL
		Road Traffic Act Amended to include regulation of Electronic Vehicles	Amended Road Traffic Act	1	2023	1	800	40	2024–2026	MoE
		Regulations on electric vehicles developed	Number of regulations for electric vehicles	0	2023	1	1,600	80	2025–2026	ERB
		Regulations for the installation, operation, and maintenance of public and private EV charging stations Developed.	Number of regulations for installation, operation, and maintenance of public and private EV charging stations.	0	2023	1	1,000	50	2025	MoE/ERB/MGEE
		Incentives designed to promote the adoption for electric vehicles (EVs)	Number of incentives developed	0	2023	9	2,000	100	2025–2026	MoFNP/MoE/MGEE/MoTL
		Safety standards specific to electric vehicles, covering aspects like battery safety, fire prevention, and crashworthiness developed	Number of standards for battery safety, fire prevention, and crashworthiness Electric vehicles document	0	2023	1	1,000	50	2024–2026	MoE/MoTL/MGEE

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20)) ZMW ('000)	US$ ('000)	Time frame	Implementing Agency
		Standards for charging equipment safety and interoperability to ensure compatibility across different EV models developed	Number of standard charging equipment	0	2023	1	1,000	50	2024-2026	MoE/MoTL/MGEE
Strategy Total							**8,400**	**420**		
	Provide infrastructure to promote non-motorized transportation and eco-mobility transportation systems	Efficient routes and schedules to minimize congestion to promote the use of non-motorized transport systems.	Number of Efficient routes and schedules to minimize congestion to promote the use of non-motorized transport system.	0	2023	5	2,000,000	100,000	2026-2030	MoTL/MIHUD
		Rapid transit system routes for public electronic transport systems	Number of Rapid transit system routes for public electronic transport systems	0	2023	7	20,000,000	1,000,000	2024-2030	
		Integrated Intelligent traffic lights and adaptive signal management systems to prioritize public transport and eco-friendly vehicles developed.	Number of integrated intelligent traffic lights and adaptive signal management systems to prioritize public transport and eco-friendly vehicles	0	2023	1	10,000	500	2024-2026	
		EV charging infrastructure developed	Number of charging points	0	2023	100	20,000	1000	2024-2026	
Strategy Total							**22,030,000**	**1,101,500**		
Outcome Total Budget							**22,042,400**	**1,102,120**		
Enhanced resource efficiency through Water-Energy-Food-Eco-systems Nexus approaches	Domesticate the SADC WEFE Nexus Framework at country level	SADC WEFE Nexus Framework Domesticated	SADC WEFE Nexus Framework operationalized at Country level.	0	2022	1	500	25	2023-2030	MWDS/MoA/MGEE/MoE/MFL/MLGRD/MCTI/MoFNP
Strategy Total							**500**	**25**		
	Strengthen the undertaking of periodic WEFE Nexus Assessments at national and sub-national levels	Periodic WEFE nexus assessments at national and sub-national levels strengthened.	Number of WEFE nexus assessments undertaken at national/subnational levels	0	2023	60	3,600	180	2024-2030	MWDS
Strategy Total							**3,600**	**180**		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20)) ZMW ('000)	US$ ('000)	Time frame	Implementing Agency
	Establish and strengthen multi-stakeholder platforms and partnerships for the WEFE nexus	Multi-stakeholder platforms and partnerships for the WEFE nexus established and strengthened	Number of meetings for the multi-stakeholder platforms/partnerships conducted.	1	2022	8	4,800	240	2024–2030	MWDS/MoE/MoA/MGEE
Strategy Total							**4,800**	**240**		
	Strengthen ecosystem-based approaches to preventing biodiversity loss and improving water, energy and food security	Ecosystem based approaches to improve Water, energy and food security strengthened	Number of ecosystem-based approaches utilized to improve water, energy and food security.	1	2023	2	2,400	120	2024–2030	MWDS/MoE/MoA/MGEE
Strategy Total							**2,400**	**120**		
	Capacity building on the WEFE nexus approach.	Capacity building on the WEFE nexus approach actualized.	Number of trainings conducted on the WEFE nexus approach	0	2023	3	300	15	2024–2030	
Strategy Total							**300**	**15**		
Outcome Total Budget							**11,600**	**580**		
Enhanced application of circular economy principles in all sectors	Create an enabling environment that supports and incentivizes greater circulation of goods and materials	Policy on circular economy developed	Policy on circular economy published	0	2023	1	1,000	50	2024–2025	MGEE/ZEMA/MLGRD/MCTI
		A national guideline for implementation of the Circular economy developed	National guideline on circular economy published	0	2023	1	360	18	2024–2030	MGEE/ZEMA/MLGRD/MCTI
		E-waste management regulations developed	Number of E-Waste management regulations	0	2023	1	700	35	2024–2030	MGEE/ZEMA/MLGRD/MCTI
		Extended Producer responsibility regulations revised	Number of Extended Producer responsibility regulations revision	1	2023	1	700	35	2024–2030	MGEE
		Standards for the extended producer responsibility developed	Number of Extended producer responsibility Standards developed.	0	2023	1	360	18	2024–2030	MGEE/MLGRD
		Capacity built for implementation of circular economy initiatives	Number of females and males trained	0	2023	30	360	18	2024–2030	MGEE/ZEMA/MLGRD/MCTI
Strategy Total							**3480**	**174**		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20) ZMW ('000)	Cost (1US$/K20) US$ ('000)	Time frame	Implementing Agency
	Develop and implement circular supply chains within industry	Guidelines for the implementation of the integrated supply chain within industries developed	Integrated supply chain guidelines developed	0	2023	1	800	40	2024–2030	MGEE/ZEMA
		Reverse Logistics and Take-Back Programmes piloted	Number of piloted take back programmes	0	2023	5	2,000	100	2024–2030	MLGRD/MGEE/MCTI
		Guidelines for implementation of the integrated supply chain within industries implemented	Number of institutions implementing integrated supply chain within	0	2023	1	1,000	50	2024–2030	MCTI/MGEE
Strategy Total							**3,800**	**190**		
	Design out waste	Local initiatives for designing waste out supported	Number of local initiatives supported	0	2023	2	1,000	50	2024–2030	MGEE/MLGRD
		Guidelines for Life cycle assessment developed	Life cycle assessment guidelines	0	2023	1	700	35	2024–2030	MGEE/ZEMA/MCTI
Strategy Total							**1,700**	**85**		
	Enhance cleaner production	Cleaner production regulations developed	Cleaner production regulations	0	2023	1	800	40	2024–2030	MGEE
		Strategy for implementation cleaner production developed	Strategy for cleaner production	0	2023	1	700	35	2024–2030	MCTI
		Pilot implementation of cleaner production	Number of companies that have implemented cleaner production	0	2023	10	1,500	75	2024–2030	MMMD
		Cleaner production technologies adopted	Number of companies that adopt cleaner production technologies	0	2023	100	5,000	250	2024–2030	MGEE/MCTI/MMMD
		Switch from carbon-intensive processes to low-carbon processes implemented	percentage of companies that switch from carbon-intensive processes to low-carbon processes	0	2023	100	5,000	250	2024–2030	MGEE/MCTI/MMMD
Strategy Total							**13,000**	**650**		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20) ZMW ('000)	Cost US$ ('000)	Time frame	Implementing Agency
	Enhance the implementation of the waste management hierarchy	Guidelines for waste separation and waste sorting centers developed	waste separation and waste sorting centers guidelines	0	2023	1	800	40	2024-2030	MLGRD/MGEE/ZEMA
		Producer Responsibility Organizations for different waste established	Number of producer Responsibility Organizations for different waste established	0	2023	10	1,000	50	2024-2030	MCTI/MSMED/MGEE
		Waste collection schemes established in 7 provinces	Number of provinces with established waste collection schemes	0	2023	7	1,500	75	2024-2030	MLGRD/MGEE/ZEMA
		Waste minimization innovation programmes piloted	Number of piloted waste Minimization innovation programmes	0	2023	5	1,500	75	2024-2030	MoTS/MCTI/NTBC
Strategy Total							**4,800**	**240**		
	Enhance recycling of waste to high value products	Industrial parks for recycling through Public Private Partnerships piloted	Number of industrial parks for recycling through Public Private Partnerships piloted	0	2023	2	2,000	100	2024-2030	MCTI/ZDA/MIHUD/MLGRD/ZEMA
		Guidelines for recycling developed	Guideline for recycling	1	2023	1	800	40	2024-2030	MLGRD/ZEMA
		Standards for recycled products developed	Standards for recycled products	1	2023	1	8,000	400	2024-2030	MGEE/ZEMA
		Recycling programs and facilities established and supported in Local communities	Number of local communities with established recycling programs and facilities	0	2023	7	1,000	50	2024-2030	MLGRD/ZEMA
		Waste to energy project through Public Private Partnership established	Number of wastes to energy project through Public Private Partnership	0	2023	1	1,000	50	2024-2030	MCTI/MoE
Strategy Total							**12,800**	**640**		
	Promote environmentally sound waste management	Eco-friendly Packaging materials promoted	Number of eco-friendly materials promoted	0	2023	2	500	25	2024-2030	MGEE/ZEMA/MCTI/MSMED
		Composting projects piloted	Number of composting projects piloted	0	2023	2	1,500	75	2024-2030	MGEE/MLGRD/ZEMA
		Engineered landfill constructed	Number of landfills constructed	1	2023	9	3,000	150	2024-2030	MLGRD/MIHUD/ZEMA
		Sound Chemicals and waste management improved	Ozone depleting substances (R 22, CHClF2) (%)	50 metric tonnes/year consumption allocated quota	2023	0 metric tonnes year	500	25	2024-2030	MGEE/MLGRD/ZEMA

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20)) ZMW ('000)	US$ ('000)	Time frame	Implementing Agency
			Phase down in the use of Highly Hazardous Pesticides (HHPs) (%)	0	2023	70	500	25	2024-2030	MGEE/ZEMA
		Reduction in the volume of e-waste being generated in the country	Proportion of enterprises across the country that have disposed some electrical/electronic items	0	2023	20%	500	25	2024-2030	MGEE/ZEMA
			Proportion of households across the country that have access to e-waste management systems (Take back centres, disposal facilities)	44.50%	2022	35%	500	25	2024-2030	MLGRD/MGEE/ZEMA
			Number of public private partnership innovations and investments in management of e-waste developed	0	2022	3	3,000	150	2024-2030	MCTI/MGEE/MoF-NP/MLGRD/ZICTA/ZEMA
			Percentage of individuals with knowledge on the risks associated with improper disposal of electrical/electronic waste	9.50%	2022	20%	500	25	2024-2030	MGEE/MLGRD/ZICTA/ZEMA
Strategy Total							**4500**	**225**		
	Improve pollution prevention and control in industrial processes	Carbon capture utilisation and storage (CCUS) infrastructure at emission-intensive and industry sites deployed	Number of carbon capture utilisation and storage (CCUS) infrastructure deployed at emission-intensive and industry sites	0	2023	2	200,000	10,000	2024-2030	MGEE/ZEMA/MCTI
		Pollution from indutrial processes monitored	Number of industries that adopt Best Available Technologies (BAT) for pollution prevention	20%	2023	50%	50,000	2,500	2024-2030	MGEE/ZEMA/MCTI
			Percentage of industries monitored for pollution	71%	2023	90%	50,000	2,500	2024-2030	MGEE/ZEMA/MCTI
Strategy Total							**300,000**	**15,000**		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20])		Time frame	Implementing Agency
							ZMW ('000)	US$ ('000)		
	Create an enabling environment for eco-labeling for products and services	Domesticate eco-labeling classification by the International Organization for Standardization.	Eco-labeling classification by the International Organization for Standardization domesticated	0	2023	800	800	40	2024	MGEE/ZEMA/MCTI
		Develop guidelines for eco-labeling	Number of guidelines for eco-labeling	0	2023	1	1,000	50	2026	MGEE/ZEMA/MCTI
		Formulate incentives for eco-labeling	Number of incentives for eco-labeling	0	2023	500	500	25	2025	MGEE/ZEMA/MCTI
Strategy Total							**2300**	**115**		
Outcome Total Budget							**346,380**	**17,319**		
Pillar Total Budget							**29,207,353**	**1,460,368**		
PILLAR 3: ENHANCED NATURAL CAPITAL										
Strengthened sustainable land management	Reduce land degradation and restore degraded areas	Land degradation reduced	No. of land degradation neutrality measures implemented	7.50%	2018	2.50%	2,000	100	2024–2026	MLNR/MGEE/MLGRD
		Degraded land restored	Hectarage of degraded land restored	5,884,232 ha	2019	3,500,000 ha	100,000	5,000		
Strategy Total							**102,000**	**5,100**		
	Promote sustainable land conversion	Land conversion sustainably managed	Guidelines for land conversion developed	2	2021	5	500	25	2024–2026	MLNR/MGEE/MWDS
			No. of plans for management of converted land developed	0	2022	1	500	25	2024–2026	MLNR/MWDS/MLGRD
Strategy Total							**1000**	**50**		
	Protect ecologically sensitive areas	Ecologically sensitive areas protected	No. of ecologically sensitive areas gazetted	0	2022	3	1,500	75	2024–2030	MLNR/MGEE/MWDS/MLGRD
			No. of management plans for ecologically sensitive areas developed	0	2022	100%	500	25	2024–2030	MLNR/MGEE/MWDS/MLGRD
Strategy Total							**2000**	**100**		
	Promote and enforce land zoning	Land zoning promoted	No. of areas zoned for multi - use	45	2022	116	69,600	3,480	2024–2030	MLNR/MGEE/MWDS/MLGRD
Strategy Total							**69,600**	**3,480**		
Outcome Total Budget							**174,600**	**8,730**		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20) ZMW ('000)	US$ ('000)	Time frame	Implementing Agency
Strengthened sustainable forest resources and ecosystem management	Strengthen the policy and regulatory framework on management of forests, protected and conservation areas	Forestry policy and regulatory framework strengthened	Revised forestry policy published	0	2014	1	1,500	75	2024–2030	MGEE
			No. of forestry regulations developed	5	2021	8[2]	1,500	75	2024–2030	MGEE/MoJ
Strategy Total							**3,000**	**150**		
	Enhance institutional capacity for the enforcement of forestry legislation	Institutional capacity for law enforcement enhanced	Number of female and male forest guards recruited	76	2022	1,000	504,000	25,200	2024–2030	MGEE
			Number of female and male forest guards trained	76	2022	1,000	500	25	2024–2030	MGEE
			Number of female and male honorary forestry officers recruited	500	2022	7,000	10,000	500	2024–2030	MGEE
			Number of female and male honorary forestry officers trained	500	2022	7,000	1,500	75	2024–2030	MGEE
			Number of machinery and equipment	130	2022	280	260,000	13,000	2024–2030	MGEE
			No. of districts linked to the Timber Traceability System	36	2023	116	3,000	150	2024–2030	MGEE
Strategy Total							**779,000**	**38,950**		
	Promote forest regeneration and afforestation	Forest regeneration and afforestation promoted	Rate of deforestation	172,000 ha/Year	2018	120,000	1,500	75	2024–2030	MGEE
			No. of hectares regenerated	22,000ha/year	2023	6,000,000	600,000	30,000		
			No. of hectares afforested	4,737 ha/Yr	2021	10,000 ha/Yr	4,500	225		
Strategy Total							**606,000**	**30,300**		
	Promote forest carbon stock management programmes and projects	GHG emissions from forests reduced	Tonnes of CO2 equivalent emissions reduced (MtCO2eq)	70.767 Gg CO2eq	2010	43,804 Gg CO2eq	15,000	750	2024–2030	MGEE
Strategy Total							**15,000**	**750**		
	Promote investments in environmentally friendly forest-based enterprises	Forest - based enterprises promoted	No. of Forest - based enterprises promoted	19,800	2023	25,000	19,600	980	2024–2030	MGEE/MSMED
Strategy Total							**19,600**	**980**		

REPUBLIC OF ZAMBIA

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20)] ZMW ('000)	US$ ('000)	Time frame	Implementing Agency
	Enhance value chains and research on timber and non-timber forest products	Research in timber and non-timber forest products promoted	No. of timber forest research projects implemented	0	2023	5	8,000	400	2024–2030	MGEE
			No. of non-timber forest research projects implemented	0	2023	5	8,000	400	2024–2030	MGEE
Strategy Total							16,000	800		
Outcome Total Budget							1,438,600	71,930		
Strengthened water management	Strengthen the management of water resources in protected areas	Water Resources management in protected areas strengthened	No. of water protected areas mapped	0	2022	10	5,325	266	2024–2027	MWDS
			No. of water Resources Protected Areas (WRPA) declared.	0	2022	14	8,000	400	2024–2027	MWDS
Strategy Total							13,325	666		
	Promote sustainable water conservation and utilization practices	National and sub - national campaigns on IWRM conducted	No. of national and sub - national campaigns conducted on IWRM	1	2022	11	9,150	458	2024–2027	MWDS/MGEE/MLNR
		Community - based climate resilience livelihood projects developed	No. of community - based climate resilience livelihood projects developed	2	2021	3	15,000	750	2024–2027	MGEE/MoT/MoA/MFL
Strategy Total							24,150	1,208		
	Strengthen nature-based approaches in the management of watersheds/water catchments	Water catchment management plans developed	No. of water catchment management plans developed	0	2023	2	10,000	500	2024–2030	MWDS/MLNR/MGEE
		Catchment areas equipped with new and updated hydrological equipment and machinery	No. of catchment areas with new and updated hydrological equipment and machinery	0	2022	6	17,400	870	2024–2030	MWDS/MLNR/MGEE
Strategy Total							27,400	1,370		
Outcome Total Budget							64,875	3,244		
Enhanced restoration of wastelands in mining operations	Promote mining technologies that limit environmental damage	Environmentally friendly mining technologies promoted	Guideline on the requirement for acceptable environmentally friendly mining technologies developed	0	2022	1	3,000	150	2024–2030	MMMD/MGEE/MoTS
			Audit of mines engaged in Environmentally friendly mining technological activities	0	2022	50	5,000	250	2024–2030	MMMD/MGEE/MoTS
			No. of mines promoting environmentally friendly mining technologies	0	2022	100	5,000	250	2024–2030	MGEE/MMMD/MLNR
Strategy Total							13,000	650		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20) ZMW ('000)	Cost (1US$/K20) US$ ('000)	Time frame	Implementing Agency
	Enhance the use of sustainable waste disposal technologies	Waste disposal technologies enhanced	No. of Waste disposal technologies adopted (engineered landfills, waste dumps)	0	2022	10	3,000	150	2024–2030	MGEE/MLGRD/MMMD
Strategy Total							**3,000**	**150**		
	Promote the restoration and management of mine wastelands	Restoration and management of mine wastelands promoted	Hectarage of mine wastelands restored	0	2022	10	5,000	250	2024–2030	MGEE/MLGRD/MMMD
			Hectarage of mine wastelands progressively rehabilitated	0	2022	15	5,000	250	2024–2030	MGEE/MLGRD/MMMD
Strategy Total							**10,000**	**500**		
Outcome Total Budget							**26,000**	**1,300**		
Enhanced natural resource base for ecotourism	Strengthen the policy and regulatory framework on management of protected and conservation areas	Policy and regulatory framework on the management of protected and conservation areas strengthened	No. of Community Resource Boards (CRBs) with strengthened operational capacity	12	2023	82	4,100	205	2024–2026	MoT
	conservation areas	Wildlife policy and regulatory framework strengthened	No. of legislation reviewed	0	2015	8	4,000	200	2024–2030	MoT
Strategy Total							**8,100**	**405**		
	Enhance institutional capacity for the enforcement of wildlife legislation	National Wildlife Adaptation Strategy developed	National Wildlife Adaptation Strategy published	0	2023	1	1,500	75	2024–2026	MGEE/MoT
		Institutional capacity for law enforcement enhanced	No. of female and male WPOs employed	1,600	2023	5,000	244,800	12,240	2024–2030	MoT
			No. of machinery and equipment procured	100	2022	150	150,000	7,500	2024–2030	MoT
Strategy Total							**396,300**	**19,815**		
	Engage the participation of local communities in conservation	Awareness campaigns	No. of awareness campaigns	20	2023	200	5,400	270	2024–2030	MoT/MGEE/MLNR
		Community engagement meetings	No. of community engagement meetings	35	2023	175	4,200	210	2024–2030	MoT
		Formation of Community Resources Boards (CRB)	No. of CRB formed	68	2023	82	840	42	2024–2030	MoT
Strategy Total							**10,440**	**522**		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20)) ZMW ('000)	Cost (1US$/K20)) US$ ('000)	Time frame	Implementing Agency
	Provide alternative livelihoods to communities living in protected and conservation areas	Establish community game ranches for the conservation of wildlife species	No. of community game ranches established.	3	168	10	1,500	75	2024-2030	
		Households provided with alternative livelihoods	No. of female and male headed households with alternative livelihoods	17,475	2017	34,950	3,800	190	2024-2030	MoT/MoA/MFL/MGEE/MSMED
Strategy Total							**5,300**	**265**		
Outcome Total Budget							**420,140**	**21,007**		
Enhanced national and sub-national environmental statistics and environmental economic accounting for natural capital	Establish environmental data and statistical standards	Official National Environmental Statistical Standards that are backed by legislation	Number of statistical standards legislated from the basic set of environmental statistics	1	2022	14	30,000	1,500	2024-2030	ZamStats
Strategy Total							**30,000**	**1,500**		
	Formulate a comprehensive data collection and management system	National framework for collection, processing, management and dissemination of environmental statistics	Number of national frameworks for collection, processing, management and dissemination of environmental statistics	0	2022	1	30,000	1,500	2024-2027	ZamStats/MoFNP/MGEE/MWDS/MoT/MLNR/MoE/MMMD
Strategy Total							**30,000**	**1,500**		
	Establish decision support systems and planning tools	Automated and online decision support systems and planning tools for all the sectors covered under the thematic areas of environmental economic accounting	Number of decision support systems and planning tools established and functional	1	2022	7	25,000	1,250	2024-2030	ZamStats/MoFNP/MGEE/MWDS/MoT/MLNR/MoE/MMMD
Strategy Total							**25,000**	**1,250**		
	Undertake periodic (annual) environmental economic accounting for natural capital at national and sub-national levels	Annual Environmental Economic Accounts at National and Sub-National levels for the eight thematic areas of Environmental Economic Accounting	Number of Environmental Economic Accounts produced for each of the eight thematic areas of environmental economic accounting at National and Sub-National levels.	3	2022	8	14,000	700	2024-2030	ZamStats/MoFNP/MGEE/MWDS/MoT/MLNR/MoE/MMMD
Strategy Total							**14,000**	**700**		

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20]) ZMW ('000)	US$ ('000)	Time frame	Implementing Agency
	Capacity building and institutional strengthening with respect to environmental statistics and environmental economic accounting for natural capital	Critical mass of human capital for environmental economic accounting established and enhanced	Number of personnel from multiple institutions and agencies trained in environmental economic accounting	0	2022	100	10,000	500	2024-2030	ZamStats/MoFNP/MGEE/MWDS/MoT/MLNR/MoE/MMMD
Strategy Total							**10,000**	**500**		
Outcome Total Budget							**109,000**	**5,450**		
Pillar Total Budget							**2,233,215**	**111,661**		
PILLAR 4: IMPROVED INCLUSIVITY										
Enhanced opportunities for sustainable livelihoods	Facilitate green business development services to MSMEs and Cooperatives	Green business development services to MSMEs and Cooperatives provided.	Number of business development service providers (BDSPs) trained in green BDS	0	2023	200	6,000	300	2024-2030	MGEE/MSMED/MCTI
			Number of female and male owned/led MSMEs and Cooperatives receiving green business development services	0	2023	4,000	8,000	400	2024-2030	MSMED/MGEE
Strategy Total							**14,000**	**700**		
	Promote research, innovation and clean technology including digital technology to MSMEs and Cooperatives.	Research, innovation and clean technology to MSMEs and Cooperatives promoted.	Number of female and male owned/led MSMEs and Co-operatives linked to research and innovation institutions.	0	2023	4,000	1,000	50	2024-2030	MSMED/MCTI/MGEE
Strategy Total							**1,000**	**50**		
	Facilitate access to affordable green finance for MSMEs and Cooperatives.	Access to green finance by MSMEs and Cooperatives increased.	Proportion of green MSMEs and Cooperatives accessing green financing.	0	2023	20%	1,500	75	2024-2030	MGEE/MoFNP/MSMED
		MSMEs and Cooperatives integrated in green commercial value chains.	Number of green value chains integrating MSMEs and Cooperatives.	0	2023	1000	1,000	50	2024-2030	MSMED/MGEE
Strategy Total							**2,500**	**125**		
Outcome Total Budget							**17,500**	**875**		

REPUBLIC OF ZAMBIA

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20])		Time frame	Implementing Agency
							ZMW ('000)	US$ ('000)		
Strengthened inclusive social protection	Revise the social protection policy to ensure that it combines the economic, social, and environmental facets of sustainable development	Social protection policy revised	Revised social protection policy published	0	2023	1	500	25	2024–2025	MCDSS/MLSS
Strategy Total							**500**	**25**		
	Promote social dialogue and the active involvement of stakeholders, including vulnerable groups to increase awareness of the green growth agenda.	Social dialogue and active involvement with stakeholders, persons with disabilities and other vulnerable groups promoted.	Number of social dialogues involving stakeholders, persons with disabilities and other vulnerable groups promoted.	0	2023	7	700	35	2024–2030	MCDSS/MLSS
		Integrated and inclusive communication strategy to support green economy and environmental sustainability developed	Integrated and inclusive communication strategy developed.	0	2023	1	300	15	2024–2025	MCDSS/MLSS
Strategy Total							**1,000**	**50**		
Outcome Total Budget							**1,500**	**75**		
Increased access to basic services	Increase access to water supply and sanitation services	Access to basic water supply services increased	percentage of female and male the population with access to basic water supply services	72.00%	2022	100%	40,530,000	2,026,500	2024–2030	MWDS/MIHUD
		Access to basic sanitation services increased	percentage of female and male the population with access to basic sanitation services	54.00%	2022	100%	25,200,000	1,260,000	2024–2030	MWDS/MIHUD
Strategy Total							**65,730,000**	**3,286,500**		
	Increase access to electricity in rural areas	Access to electricity in rural areas increased	Percentage of female and male population in rural areas with access to electricity.	8.1	2018	51%	8,000,000	400,000	2024–2030	MoE/REA/ZESCO
Strategy Total							**8,000,000**	**400,000**		
	Reduce the incidence of climate sensitive diseases	Tracking of diseases and trends related to climate change strengthened	Number of districts with functional surveillance systems integrated with climate-sensitive diseases.	0	2024	116	1,000,000	50000	2024–2030	MoH
Strategy Total										

88

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20) ZMW ('000)	Cost (1US$/K20) US$ ('000)	Time frame	Implementing Agency
		Research in climate sensitive diseases enhanced	Number of research outputs on climate sensitive diseases	8	2023	20	36,000	1800	2024-2025	MoH
		Health promotion activities on climate sensitive diseases strengthened	Number of health promotion activities on climate sensitive diseases	18	2023	52	120,000	6000	2024-2030	MoH
		Domestic water purification in hotspots for climate-sensitive diseases improved	Number of climate sensitive diseases' hotspots with domestic water purification	15	2023	45	200,000	10000	2024-2030	MoH
Strategy Total							1,356,000	67,800		
Outcome Total Budget							75,086,000	3,754,300		
Enhanced education, training and skills development for inclusive green jobs	Revise the existing curricula at all levels of the education system to integrate green growth	Green growth learning and training needs assessment at all levels of the education system conducted	Green growth learning and training needs assessment report at all levels of the education system published	0	2023	1	3,000	150	2024-2026	MoEducation/MoTS
		Green growth at all levels of the education curricula integrated	Number of curricula revised to integrate green growth	0	2023	6	12,000	600	2024-2030	MGEE
Strategy Total							15,000	750		
	Develop a national and sectoral green jobs plan	National green jobs plan developed	National green jobs plan published	0	2023	1	2,000	100	2024-2030	MoFNP/MGEE/MLSS
		Sectoral green jobs plans developed	Sectoral green jobs plans published	0	2023	4	8,000	400	2024-2030	MoFNP/MGEE/MLSS/MoA/MFL/MoE/MoT
		Green growth training and skills needs assessment conducted	Green growth training and skills needs assessment report published	0	2021	1	2,000	100	2024-2026	MGEE/MLSS/MoTS/MoA/MoEducation
		Apprenticeship programmes on green jobs developed	Number of female and male apprenticeship programmes on green jobs developed	0	2023	10	10,000	500	2024-2030	MLSS/MoTS
		Green growth awareness and sensitization campaigns to support lifelong learning among workers' unions conducted	Number of green growth awareness and sensitization campaigns among workers' unions	0	2023	14	1,400	70	2024-2030	MGEE/MLSS
Strategy Total							23,400	1170		
Outcome Total Budget							38,400	1,920		
Pillar Total Budget							75,143,400	3,757,170		

PILLAR 5: ENABLING CONDITIONS FOR GREEN GROWTH

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20) ZMW ('000)	Cost (1US$/K20) US$ ('000)	Time frame	Implementing Agency
Strengthened regulatory and policy frameworks	Mainstream green growth in national and sub-national policies	Green growth actions in national policies integrated	Number of national policies with green growth actions integrated.	5	2023	9	3,600	180	2024–2030	MGEE/MoA/MFL/MoE/MoT
		Green growth actions in sub-national plans integrated	Number of District Integrated Development Plans with green growth actions integrated.	10	2023	116	21,200	1,060	2024–2030	MGEE/MLGRD/Local authorities
Strategy Total							**24,800**	**1,240**		
	Enhance enforcement and implementation of existing policies and regulations on the environment and natural resources	Compliance to policies and regulations on the environment and natural resources increased	Number of capacity building activities targeting environmental law compliance undertaken:							
			Training of female and male officers in environmental law enforcement	1,052	2023	3,000	6,818	341	2024–2030	MHAIS/MoJ/MGEE/Local Authorities
			Number of community education and awareness activities undertaken	242 per year	2023	484	16,940	847	2024–2030	MGEE/MoT/MGEE/Local Authorities
Strategy Total							**23,758**	**1,188**		
	Develop policies and regulations that promote green growth	Policy and regulations for the management of inert gases developed	Policy on management of inert gases developed	0	2023	1	1,500	75	2024–2030	MoTS/MoE
			Regulations on management of inert gases developed	0	2023	1	1,500	75	2024–2030	MoTS/MoE
Strategy Total							**3,000**	**150**		
Outcome Total Budget							**51,558**	**2,578**		
Enhanced mobilization of financial resources	Establish strategic policies for a green financial system	National Green Finance Strategy Developed (including CSR)	National Green Finance Strategy published	0	2023	1	1,500	75	2024–2025	MoFNP/BoZ/SEC/PIA
		Green financial sector strategies developed	Number of green financial sector strategies	2	2023	6	6,000	300	2024–2025	MoFNP/BoZ/SEC/PIA
		Green financial sector regulations developed	Number of green financial sector regulations	1	2023	3	4,500	225	2024–2026	MoFNP/BoZ/SEC/PIA
		Green growth fund established	Green growth fund	0	2023	1	5,000	250	2024–2028	MoFNP/MGEE/BoZ/SEC/PIA
		Green finance principles incorporated in sectoral strategies	Number of sectoral strategies with embedded green finance principles	3	2023	10	2,100	105	2024–2026	MoFNP/BoZ/SEC/PIA
		National green taxonomy developed	National green taxonomy published	0	2023	1	2,000	100	2024–2025	MoFNP/MGEE/BoZ/SEC/PIA

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20) ZMW ('000)	Cost (1US$/K20) US$ ('000)	Time frame	Implementing Agency
		Public sector budget resources realigned for execution of green growth actions	Percentage of public sector budget realigned for execution of green growth actions	0.6	2022	10	5,000	250	2024–2030	MoFNP/MGEE
Strategy Total							**26,100**	**1305**		
	Increase supply and demand for transition and green finance in Zambia	Incentives for investors and lenders provided	Number of new green incentives for investors and lenders provided	1	2022	10	5,000	250	2024–2026	MoFNP/MGEE/BoZ/SEC/PIA
		Incentives for developers and borrowers provided	Number of new green incentives for developers and borrowers provided	1	2022	10	5,000	250	2024–2026	MoFNP/MGEE/BoZ/SEC/PIA
		Training on the design of green finance products, services and projects to the public and private sector conducted	Number of annual trainings for public and private sector officials conducted	3	2023	3 per year/21 trainings up to 2030	2,520	126	2024–2030	MoFNP/MGEE/BoZ/SEC/PIA
		Principles of project preparation embedded in project development processes	Number of project preparation facilities established	3	2023	20	5,000	250	2024–2030	MoFNP/MGEE/BoZ/SEC/PIA
		Online portal of green pipeline projects created	Functional online portal of green pipeline projects	0	2023	1	10,000	500	2024–2030	MoFNP/MGEE/BoZ/SEC/PIA
		Green growth resource mobilization strategy developed	Green growth resource mobilization strategy published	0	2023	1	1,500	75	2023–2024	MoFNP/MGEE/BoZ/SEC/PIA
Strategy Total							**29,020**	**1,451**		
	Strengthen capacity-building and research and development among stakeholders	Curriculum in green finance developed	Green finance curriculum published	0	2023	1	2,100	105	2024–2025	MoEducation/MoTS/MoFNP/MGEE/BoZ/SEC/PIA
		Research capacity of financial institutions and academia strengthened	Number of female and male officials from financial and academic institutions trained	40	2023	1,000	5,000	250	2024–2030	MoFNP/BoZ/SEC/PIA
		Green finance innovation hubs developed	Number of green finance innovation hubs	1	2023	5	2,000	100	2024–2030	MoFNP/BoZ/SEC/PIA
Strategy Total							**9,100**	**455**		

REPUBLIC OF ZAMBIA

Outcome	Strategy/Intervention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20])		Time frame	Implementing Agency
							ZMW ('000)	US$ ('000)		
	Enhance the assessment, measurement and reporting of green finance activities and their impacts.	Green finance tagging and reporting system for the public sector developed	Report on green finance tagging and reporting system for the public sector	0	2023	7	2,700	135	2024–2030	MoFNP/MGEE/BoZ/SEC/PIA
		Green finance tagging and reporting system for the private sector developed	Report on green finance tagging and reporting system for the private sector	0	2023	7	2,700	135	2024–2030	MoFNP/MGEE/BoZ/SEC/PIA
		Green finance tagging and reporting system for the financial sector developed	Report on green finance tagging and reporting system for the financial sector	0	2023	7	2,700	135	2024–2030	MoFNP/MGEE/BoZ/SEC/PIA
		Sustainability reporting in the annual financial reports for the public and private sectors promoted	Sustainability report	0	2023	25	5,000	250	2024–2030	MoFNP/MGEE/BoZ/SEC/PIA
Strategy Total							**13,100**	**655**		
Outcome Total Budget							**77,320**	**3,866**		
Strengthened human and technical capacity	Formulate a comprehensive Human Resource Capacity Development Framework for greening growth in Zambia	Human Resource Development Plan for green growth in Zambia formulated	Human Resource Development Plan for green growth in Zambia published	0	2023	1	2,000	100	2024–2026	MGEE/MDD
		Training of focal points in green growth conducted	Number of female and male focal points trained	100	2023	800	3,500	175	2024–2030	MGEE/MDD
		Participation in regional and international fora on green growth enhanced.	Number of green growth regional and international fora	5	2023	10	21,000	1,050	2024–2030	MoFNP/MGEE/BoZ/SEC/PIA
Strategy Total							**26,500**	**1,325**		
	Enhance institutional capacity building in climate peace and security	Research on climate, peace and security in Zambia conducted	Research on climate, peace and security in Zambia published	0	2023	5	10,000	500	2023-2024	MoA/MGEE/MLNR
		Training on climate, peace and security conducted	Training on climate, peace and security conducted	0	2023	6	2,100	105	2024–2030	MoA/MGEE/MLNR
Strategy Total							**12,100**	**605**		
Outcome Total Budget							**38,600**	**1,930**		
Enhanced research, technology and innovation capacity	Nurture and attract green technology specialists	Green technology specialists trained	Number of female and male green technology specialists trained	25	2023	500	20,000	1,000	2024–2030	MoTS/MGEE/MoEducation
Strategy Total							**20,000**	**1,000**		

Outcome	Strategy/Inter-vention	Output	Indicator	Baseline	Year of Baseline	Target	Cost (1US$/K20)]		Time frame	Implementing Agency
							ZMW ('000)	US$ ('000)		
	Establish green research and development community of practice composed of industries, academia, and research institutions	Green research and development community of practice composed of industries, academia, and research institutions established	Number of green research and development clusters established	1	2023	6	28,000	1,400	2024–2030	MoTS/MGEE/MoEducation
Strategy Total							**28,000**	**1,400**		
	Create fora for green technology including digital technology commercialisation	Forum for green technology commercialization created	Green technology commercialization forum functional	0	2023	1	2,000	100	2024–2030	MoTS/NTBC/MoEducation/MoE/Academic and research institutions
Strategy Total							**2,000**	**100**		
	Promote the exchange of green knowledge with leading global research institutions	Exchange of green knowledge with leading global research institutions promoted	Number of Memoranda of Understanding with leading global research institutions	0	2023	5	1,000	50	2024–2030	MoTS/NTBC/MoEducation/MoE/Academic and research institutions
Strategy Total							**2,000**	**50**		
Outcome Total Budget							**51,000**	**2,550**		
Pillar Total Budget							**218,478**	**10,924**		
Green Growth Strategy Total Budget							**208,105,555**	**10,405,278**		