Ministry of Lands, Natural Resources and Environmental Protection

Forestry Department

ZAMBIA NATIONAL STRATEGY TO REDUCE EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION (REDD+)

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UN-REDD PROGRAMME

FAO UNDP UNEP

EXECUTIVE SUMMARY

REDD+ is a global mechanism established under the UNFCCC to reduce emissions from tropical deforestation and degradation in developing countries. The REDD+ mechanism has grown to include five activities: reducing emissions from deforestation, reducing emissions from forest degradation, conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks. Forest cover in Zambia comprises around 45 million hectares, or over 60% of the total land area[1]; the Government of Zambia is aware of the prevailing high deforestation rate in the country, which is estimated between 250,000 – 300,000 hectares per annum. This places Zambia among the top 10 countries with the highest deforestation rates in the world. In pursuit of its long-term development vision (Vision 2030) which emphasizes poverty reduction and development based on "*sustainable environment and natural resource management principles*", the Government of Zambia decided in 2009 to participate in REDD as an opportunity to directly address the drivers of deforestation and forest degradation.

The proximate drivers of deforestation and forest degradation in Zambia are specific to its forestry, agriculture, energy, mining, and land use (infrastructure development) sectors. They have been identified as follows:

Sector	Proximate causes of deforestation and forest degradation
Forestry	• Uncontrolled harvesting and encroachment of the protected areas • Overexploitation and unsustainable harvesting methods of forest concession areas • Overexploitation and unsustainable use of forests in open areas • Uncontrolled forest fires
Agriculture	• Extensive and unsustainable crop production practices • Poor livestock management practices • Agro-processing reliance on wood fuel • Lack of incentives for agricultural intensification • Use of fire for land preparation
Energy	• Felling of trees for charcoal production • Use of charcoal and firewood as the main source of energy
Mining	• Felling of trees to create space for mining site and settlements for labour • Harvesting of timber for mining infrastructure • Clearing of forests and pollution of the environment from mine effluents detrimental to biodiversity integrity
Land use	• Unplanned land use that has no regard for forest integrity and biodiversity conservation

In order to effectively address these drivers in line with the REDD+ mechanism, Zambia has developed this National REDD+ Strategy; its **Vision** is to realize a prosperous climate change resilient economy by 2030, anchored upon sustainable management and utilization of Zambia's natural resources towards improved

[1] ILUA, 2010

livelihoods. Its **Goal** is to contribute to national reductions in greenhouse gas emissions by improving forest and land management, and to ensure equitable sharing of both carbon and non-carbon benefits among stakeholders. The strategy is guided by seven core principles: effectiveness, efficiency, fairness, transparency, accountability, inclusiveness and sustainability. While this document provides an introduction to the global REDD+ framework, a situation analysis as well as a detailed description of the main drivers of deforestation and forest degradation for Zambia, its central component is the formulation of strategic objectives and strategic interventions, followed by an elaboration on how to implement the interventions.

The **strategic objectives of this strategy** include:

1. By 2030, threatened and unsustainably managed national and local forests are effectively managed and protected to reduce emissions from deforestation and forest degradation and contribute with ecosystem services across selected landscapes;
2. By 2030, selected high value forests in open areas are effectively managed and monitored;
3. By 2030, all timber concession areas have management plans that are enforced and monitored with the full participation of local communities;
4. By 2030, good agricultural practices that mitigate carbon emissions adopted;
5. By 2030, regulated production of wood fuel (charcoal & firewood) and its improved utilization in place;
6. By 2020, appropriate and affordable alternative energy sources widely adopted;
7. By 2020, threatened and sensitive protected areas legislated as "no-go areas" for mining and infrastructure development;
8. By 2025, mining industry contributing to management of surrounding indigenous forests and establishment of forest plantations for own timber needs;
9. By 2025, land and resource rights on customary land legislated and secured; and
10. By 2020, relevant institutions capacitated to enable them to plan, manage, implement and monitor REDD+ programme activities.

Implementation of the national REDD+ strategy will focus on tackling different drivers of deforestation in both the forestry and other identified key sectors in particular, agriculture, energy, mining and land use. The strategy will be implemented through a landscape approach at watershed level and through policy reforms at national level. It will take into account all land uses in a holistic way (including water and wildlife) and will work to lessen the competition for natural resources among different sectors. The approach ensures that the best possible balance is achieved among a range of different development objectives, including climate change mitigation and adaptation, environmental and biodiversity conservation, enhanced economic productivity, and improved livelihoods.

Visual Summary

VISION

A prosperous climate change resilient economy by 2030 anchored upon sustainable management and utilization of Zambia's natural resources towards improved livelihoods.

GOAL

To contribute to national reductions in greenhouse gas emissions by improving forest and land management and ensure equitable sharing of both carbon and non-carbon benefits among stakeholders.

STRATEGIC OBJECTIVES

No. 1	No.2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10
By 2030, threatened and unsustainably managed national and local forests are effectively managed and protected to reduce emissions from deforestation and forest degradation and contribute with ecosystem services across selected landscapes	By 2030, selected high value forests in open areas are effectively managed and monitored	By 2030, all timber concession areas have management plans that are enforced and monitored with the full participation of local communities	By 2030, good agricultural practices that mitigate carbon emissions adopted	By 2030, regulated production of wood fuel (charcoal & firewood) and its improved utilization in place	By 2020, appropriate and affordable alternative energy sources widely adopted	By 2020, threatened and sensitive protected areas legislated as "no-go areas" for mining and infrastructure development	By 2025, mining industry contributing to management of surrounding indigenous forests and establishment of forest plantations for own timber needs	By 2025, land and resource rights on customary land legislated and secured	By 2020, relevant institutions capacitated to enable them to plan, manage, implement and monitor REDD+ programme activities

CORE PRINCIPLES

√ EFFECTIVENESS	√ EFFICIENCY	√ FAIRNESS	√ TRANSPARENCY	√ ACCOUNTABILITY	√ INCLUSIVENESS	√ SUSTAINABILITY

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

ACCF	Africa Climate Change Fund
ADC	Area Development Committee
AF	Agroforestry
AF	Adaptation Fund
AfDB	African Development Bank
AU	African Union
AUC	African Union Commission
BAU	Business As Usual
BDS	Benefit Distribution System
CA	Conservation Agriculture
CAST	Country Approach to Safeguards Tool
CBNRM	Community Based Natural Resource Management
CBU	Copperbelt University
CFM	Community Forest Management
CFU	Conservation Farming Unit
CIF	Climate Investment Funds
CIFOR	Centre for International Forestry Research
CITES	Convention on International Trade in Endangered Species
COMACO	Community Markets for Conservation
COP	Conference of the Parties
CPPP	Community-Public-Private Partnership
CRB	Community Resource Board
CSA	Climate Smart Agriculture
CSO	Civil Society Organization
DDCC	District Development Coordinating Committee
DRC	Democratic Republic of Congo
EF	Emission Factor
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EPF	Environmental Protection Fund
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FCPF	Forest Carbon Partnership Facility
FD	Forestry Department
FDI	Foreign Direct Investment
FISP	Fertilizer Input Support Programme
FPIC	Free, Prior and Informed Consent
FREL	Forest Reference Emission Level

FRL	Forest Reference Level
FSC	Forest Stewardship Council
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GFI	Global Forest Initiative
GHG	Green House Gas
GMA	Game Management Area
GPG	Good Practice Guidance
GRM	Grievance Redress Mechanism
GRZ	Government of the Republic of Zambia
ICRAF	World Agroforestry Centre (formerly International Centre for Research in Agroforestry)
IDLO	International Development Law Organization
IFI	International Financing Institution
ILUA	Integrated Land Use Assessment
IMCCS	Inter-Ministerial Climate Change Secretariat
INRM	Integrated Natural Resource Management
IPCC	Inter-governmental Panel on Climate Change
IPD	Industrial Plantations Division
ISO	International Standards Organization
IUCN	International Union for the Conservation of Nature
JFM	Joint Forest Management
LDCs	Least Developed Countries
LPG	Liquefied Petroleum Gas
LULC	Land Use and Land Cover
LULUCF	Land Use, Land Use Change and Forestry
MAL	Ministry of Agriculture and Livestock
MCI	Ministry of Commerce and Industry
MLNREP	Ministry of Lands, Natural Resources and Environmental Protection
MMEWD	Ministry of Mines, Energy and Water Development
MoFNP	Ministry of Finance and National Planning
MRV	Measuring, Reporting, Verifying
MSD	Mine Safety Department
MTENR	Ministry of Tourism, Environment and Natural Resources
NAPA	National Adaptation Programme of Action on Climate Change
NBSAP	National Biodiversity Strategy and Action Plan
NCCDC	National Climate Change Development Council
NCCP	National Climate Change Policy
NCCRS	National Climate Change Response Strategy
NCPS	National Committee of Permanent Secretaries

NF	National Forest
NFF	National Forest Fund
NFI	National Forest Inventory
NFMS	National Forest Monitoring System
NFP	National Forest Policy
NGO	Non-Governmental Organization
NHC	National Heritage Commission
NIMBY	Not in my backyard
NJP	National Joint Programme
NP	National Park
NPE	National Policy on Environment
NRCU	National REDD+ Coordination Unit
NRM	Natural Resources Management
NRSC	National Remote Sensing Centre
NTFP	Non Timber Forest Product
NTTP	National Tree Planting Programme
NWFP	Non Wood Forest Product
NWP	North-western Province
OAG	Office of the Auditor General
OPPAZ	Organic Producers and Processors Association of Zambia
OWL	Other Woodland
PA	Protected Area
PAM	Policies and Measures
PDCC	Provincial Development Coordinating Committee
PES	Payment for Ecosystem Services
PFA	Protected Forest Area
PFAP	Provincial Forest Action Plan
PFM	Private Forest Management
pH	Potential hydrogen
PLR	Policies, Laws and Regulations
PPCR	Pilot Programme for Climate Resilience
PPPF	Public Private Partnership Fund
QA	Quality Assurance
QC	Quality Control
RAMSAR	Convention on Wetlands of International Importance
RCMRD	Regional Centre for Mapping Resources for Development
RCU	REDD Coordination Unit
REDD	Reducing Emissions from Deforestation and Forest Degradation
REDD+	Reducing Emissions from Deforestation and Forest Degradation, Conservation, Enhancement of Carbon Stocks and Sustainable Management of Forests

REL	Reference Emission Level
RL	Reference Level
RTSA	Road Transport and Safety Agency
SADC	Southern African Development Community
SAEP	Stakeholder Analysis and Engagement Plan
SEA	Strategic Environmental Assessment
SES	Social and Environmental Safeguards
SESA	Strategic Environmental and Social Assessment
SESIS	Social and Environmental Safeguard Information System
SFM	Sustainable Forest Management
SI	Statutory Instrument
SIS	Safeguards Information System
SNDP	Sixth National Development Plan
UN	United Nations
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNZA	University of Zambia
VCS	Verified Carbon Standard
WG	Working Group
WRI	World Resources Institute
WRMA	Water Resources Management Authority
WTTC	World Tourism and Travel Council
ZAFFICO	Zambia Forestry and Forest Industries Corporation
ZARI	Zambia Agriculture Research Institute
ZAWA	Zambia Wildlife Authority
ZCSCCN	Zambia Civil Society Climate Change Network
ZDA	Zambia Development Agency
ZEMA	Zambia Environmental Management Agency
ZFAP	Zambia Forest Action Plan
ZMW	Zambian Kwacha
ZPCC	Zambia Parliamentary Conservation Caucus

CHAPTER 1: INTRODUCTION

1.1 The Global REDD+ Framework

Recognizing that deforestation and forest degradation in developing countries is amongst the most significant global sources of carbon emissions, estimated at 10% according to the latest IPCC data (2014), the international community has placed REDD+ high on the climate agenda. Since mid-2000s, the idea of establishing a global mechanism to reduce emissions from tropical deforestation and degradation in developing countries has gained increasing momentum under the UNFCCC. The REDD+ mechanism has grown to include five activities: reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks.

Following the UNFCCC COP 16 in Cancun (2010), and recognizing that that REDD+ countries are in different stages of development, it was agreed that REDD+ should proceed in three phases:

i. National REDD+ Strategy development including national dialogue, institutional strengthening and demonstration activities supported by voluntary contributions that are immediately available, such as those administered through the World Bank's Forest Carbon Partnership Facility (FCPF), UN-REDD, and other bilateral arrangements;
ii. Implementation of national policies and measures (PAMs) and national strategies that could involve further capacity-building, technology development and transfer and results-based demonstration activities supported by an internationally binding finance instrument with enforceable commitments; and
iii. Payment for results-based actions that should be fully measured, reported and verified based on quantified forest emissions reductions and removals against agreed-upon reference levels. This could be financed by the sale of REDD+ units within global compliance markets. Aside from markets, national funds can also manage international donor funds based on bilateral agreements to finance results-based actions.

At COP 16 (Cancun, 2010) and COP 17 (Durban, 2011) major advances were made on several key methodological aspects of REDD+ including decisions giving guidance on systems for providing information on how safeguards are addressed and respected and modalities relating to forest reference emission levels and forest reference levels. Key elements of the UNFCCC safeguards include: a) Policy alignment (national and international); b) Transparent and effective national forest governance structures; c) Respect for the knowledge and rights of indigenous peoples and local communities; d) Full and effective participation of stakeholders especially indigenous peoples and local communities; e) Actions are consistent with the conservation of natural forest and biological diversity; f) Actions to address the risks of reversals; and g) Actions to reduce displacement of emissions. In addition, the Warsaw Framework (2013) provided further guidance that countries that want to benefit from performance-based payments must have the following 4 REDD+ elements in place: 1) National Strategies and Action Plans; 2) Reference levels (FRELs/FRLs); 3) National Forest Monitoring System (NFMS); and 4) Safeguards Information System (SIS). The strategy provides the overall vision and guidance on how to address the drivers of deforestation and forest degradation. The FREL/FRL would need to be technically sound for results- based payments and Zambia's results-based actions must be measurable, reported and verifiable

if the country is to receive results-based payments. SIS should also be in place for a country to receive results-based payments.

At regional level, the African Union (AU), through its Commission (AUC), in consortium with the UN Economic Commission for Africa (UNECA) and the African Development Bank (AfDB), initiated the Climate Development Africa (ClimDev-Africa) Programme to support Member States in their efforts towards transformation to climate-resilient and low-carbon economies by focusing on both adaptation and mitigation actions. To that effect, the Consortium has created the Africa Climate Change Fund (ACCF), to which Zambia is eligible and has yet to tap into as a Member State.

At sub-regional level, the Southern African Development Community (SADC) has developed a "*SADC Support Programme on Reducing Emissions from Deforestation and Forest Degradation (REDD)*" (SADC, 2011) which is aligned with the UN-REDD Programme. The SADC programme offers recommendations for Member States to become REDD Ready and to be able to cooperate with neighbouring countries on REDD issues which are of regional relevance, such as leakage or monitoring and reporting, particularly on similar and shared forest ecosystems and in so doing, add regional value to the efforts of single Member States. The objectives of the SADC programme are three-fold: 1) To improve the capacity of SADC Member States to manage and benefit from their national REDD programmes using regional frameworks for REDD; 2) To improve collaboration among SADC Member States to be able to address REDD issues that are of regional interest; and 3) To increase the region's influence on the international processes on REDD and Climate Change. Zambia, like the Democratic Republic of Congo (DRC), Malawi, Mozambique, Tanzania, and Zimbabwe share the same forest landscape - the Miombo Forest Ecoregion characterized by common drivers of deforestation and forest degradation. All these countries are already participating in the REDD+ process. To begin participating in the REDD+ process, Zambia had to interpret both the Cancun Agreements and Warsaw Framework to its biophysical, political and socio-economic context in line with its long-term development vision – Vision 2030, to develop its own national REDD+ framework. This is explained in detail in the next section below.

1.2 The National REDD+ Framework

The Government of Zambia is aware of the prevailing high deforestation rate in the country estimated between 250,000 – 300,000 hectares per annum, placing Zambia among the top 10 countries with the highest deforestation rates in the world. The Government also recognizes the contribution of forests to the national GDP, currently estimated at 4.7-6.3% based on 2010 figures (Turpie *et. al.*, 2014), and to rural subsistence livelihoods in form of both wood and non-wood forest products as well as various ecosystem services that forests provide (e.g., hydrological flow maintenance, climate regulation, wildlife habitat, biodiversity conservation, etc.). In pursuit of its long-term development vision (Vision 2030) which emphasizes poverty reduction and development based on *"sustainable environment and natural resource management principles",* the Government of Zambia decided in 2009 to participate in REDD as an opportunity to directly address the drivers of deforestation and forest degradation.

In 2010, Zambia benefited from UNREDD funding to engage in Phase I of the REDD+ process. Phase I was intended to assist Zambia develop its national REDD+ strategy, initiate national dialogue, facilitate institutional strengthening and on-ground demonstration activities. It was also intended for Zambia to begin addressing the 4 REDD+ elements as part of the Cancun Agreements (2010) and Warsaw Framework (2013) if Zambia were to benefit from future results-based payments: 1) develop national strategy; 2) develop reference levels; 3) develop a National Forest Monitoring System; and 4) develop a Safeguards Information System.

Key achievements/gaps in the Readiness Phase

1. This Strategy marks a major milestone in readiness phase, it sets the foundation for REDD+ implementation and provides the overall framework, vision and guidance for the country to transit from readiness to implementation;

2. A decentralized NFMS has been developed with 10 laboratories at provincial level across the country to provide near real-time spatial data on deforestation and forest degradation. The NFMS is linked to a web portal for easy reporting and transparency purposes;

3. The activity data collected through the ongoing Integrated Land Use Assessment (ILUA II) will be fed into the NFMS and used to construct FREL/FRL for the country;

4. Work on developing Safeguards Information System (SIS) was initiated in Phase I using the UNFCCC Country Approach to Safeguards Tool (CAST) and has yet to be completed in the next phase. The tool will be applied to the proposed strategic interventions of the strategy and as a multi-stakeholder group exercise involving the key stakeholders representing a range of institutions and sectors in order to cover the full scope of UNFCCC safeguards and SIS in the country. During the readiness phase a REDD+ wiki was developed for information sharing and to facilitate stakeholder discussions. This will form one of the SIS platforms in the implementation phase. Other platforms to build on will include:
    - An independent NGO to be recruited by tender (see Section 5.2) shall be responsible for monitoring safeguards implementation at national level and reporting to ZEMA;
    - ZEMA is mandated under the Environmental Management Act (Part III, section 20) to collect and publicize information on the quality of the environment including any significant adverse effects that have been caused or are likely to be caused. It is also mandated to report on all international agreements to which Zambia is a party and on their domestic implementation. This means there is already a registry existing within ZEMA on environmental information archiving and reporting upon which REDD+ could build on for its SIS;
    - In addition to ZEMA, on-ground safeguards information collection could be undertaken by the various sectors (e.g., local government, energy, forestry, agriculture, commerce and industry) through their sectorial implementation units on various REDD+ interventions and the jurisdictional administrations like PDCCs, DDCCs and ADCs; and finally

5. In the various national dialogue forums, stakeholders agreed that the Zambia strategy to reduce emissions from deforestation and forest degradation should not only focus on greenhouse gas (GHG) emission reductions and carbon payments but should encompass the broader national development and poverty reduction goals as enshrined in the Vision 2030, based on an integrated natural resource management (INRM) approach.

It is important to note that drivers of deforestation and forest degradation are influenced by the prevailing social, economic and biophysical conditions as well as the policy/legal/regulatory (PLR) framework existent in the country including management practices. The next chapter provides a situation analysis of the country by discussing the baseline status in terms of the socio-economic, biophysical, policy, past and existing management practices in support of REDD+ implementation in Zambia.

CHAPTER 2: SITUATION ANALYSIS

2.1 The Baseline

2.1.1 The socio-economic structure

Zambia has a population of 13, 092,666 (CSO, 2010)[2] with a projected annual population growth rate of 4%[3]. The majority of Zambians continue to live in poverty despite a decrease in poverty levels between 2006 and 2010 showing the potential of the country to reduce poverty. Poverty in Zambia continues to be more of a rural than urban phenomenon with rural poverty at 77.9% being three times that in urban areas at 27.5%. Poverty and population increase are two principal underlying causes of deforestation and forest degradation in the country as rural dwellers rely heavily on forests for their sustenance and informal economic activities such as charcoal production and sale.

Zambia's economy is primarily driven by Mining, Agriculture, Construction, Transport and Communication sectors with copper exports accounting for over 70% of export earnings (CSO 2012). Forestry has always been lumped together with agriculture in terms of contribution to national GDP, however, agriculture is easily tracked while forestry is not as most activities in the forestry sector occur in the informal economy. In compiling the national accounts for the agricultural sector, five subsectors are taken into account – crops, livestock, forestry, fishing and hunting. In 2010 the real GDP growth was 7.6 percent, the highest level recorded since 1972 (CSO, 2010)[4]. Between 2000 and 2010 the annual inflation rate declined from 30.1 percent to 7.9 percent (CSO, 2010a)[5].

A recent Zambia Economic Brief (World Bank, 2014) states that the just-completed rebasing of the national accounts to 2010 (from 1994) by the Central Statistics Office, shows that the Zambian economy is bigger than earlier estimated and that services have a bigger share. Rebased estimates for 2010 GDP are 25 percent larger than the 1994-based estimates—K97.2 billion compared with K77.7 billion. The new estimates aim to include more comprehensive coverage of the informal sector. Among other notable differences with previous estimates, the relative contribution of each sector to overall GDP has changed: Zambia is now presented as a service-oriented economy with the tertiary sector at 53.7% of GDP; Mining at 12.9%; Agriculture, Forestry and Fisheries at 9.9%; and Manufacturing at 7.9% (CSO, 2014; Turpie *et al.,* 2014) (Figure 1).

[2] Central Statistics Office. *2010. Censuses of Population and Housing*, CSO, Lusaka, Zambia.
[3] World Bank. 2014. http://www.indexmundi.com/facts/indicators/SP.POP.GROW/compare?country=zm
[4] Central Statistics Office (CSO). 2010. National Statistic Accounts, Zambia.
[5] Central Statistics Office (CSO). 2010a, Prices Statistics, Zambia.

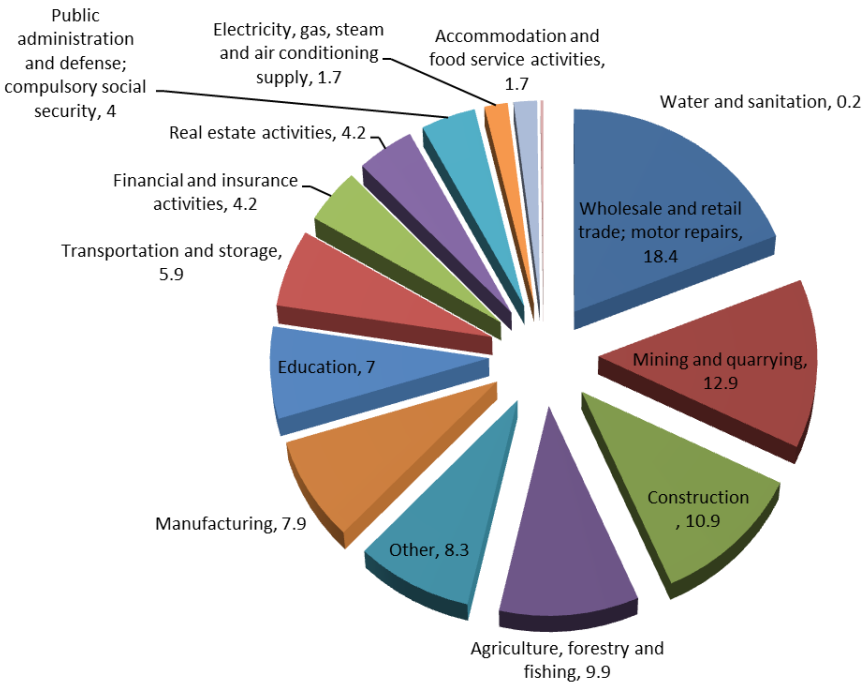

Figure 1: Sectoral contribution to Gross Domestic Product in 2010 (CSO 2014; Turpie *et al*., 2014)

Zambia's Central Statistical Office (CSO, 2014)[6] has recently finalized the benchmarking of the National Accounts Statistics to 2010. These data suggest that the forestry sector now contributes 0.8% of GDP. This figure is way too low as it only accounts for forest products and excludes forest ecosystem services. A recent study by Turpie *et al.,* (2014) on the economic value of Zambia's forest ecosystems estimates the contribution of the forest sector to the national GDP in 2010 at 4.7-6.3%, albeit, the study did not take into account all ecosystem services due to lack of reliable data. This means that the actual contribution of the forest sector to GDP is considerably higher if ecosystems services and products traded in the informal economy (e.g., charcoal, roundwood, edible caterpillars, medicinal plant products, etc.) are taken into account.

It must be noted that the same economic sectors that are the mainstay of the economy (i.e., agriculture, mining, forestry), which are intricately linked, are the main sources of GHG emissions affecting the state of Zambia's forests. The next sections describe the forest resources of Zambia, their current state

[6] Central Statistics Office (CSO). 2014. National Statistic Accounts, Zambia

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followed by a review of the forests and socio-economic development nexus in Zambia – the economic importance of forests.

2.1.2 Forest resources in Zambia

2.1.2.1 Composition and geographical coverage

Zambia's vegetation is dominated by miombo, which is characterized by open woodland dominated by *Caesalpinioideae* tree species including *Brachystegia, Julbernardia* and *Isoberlinia*, often associated with a dense grass sward. Zambian woodlands have a long history of human use including extraction of wood for timber and fuel, grazing, harvesting of non-timber forest products (NTFPs).

Forest cover in Zambia comprises around 45 million hectares, or over 60% of the total land area[7] with 22% occurring in North-western province (Table 1) in the upper Zambezi River watershed where the source of the Zambezi River is also located at Kaleni Hills. The upper Zambezi River watershed includes sub-catchments or sub-basins of the Barotse, Luangwa and Kafue. Unmanaged high value forests predominantly found in open areas in Zambia include the teak *(Baikiaea*) forests in the South-west, the *Cryptosepallum* in the North-west (*Zambezi basin)*; the *Colophospermum* mopane in Eastern and Muchinga provinces*, (Luangwa sub-basin)*, in Southern, Western and Central provinces *(Zambezi basin and Kafue sub basin)*; and the *Itigi* in Muchinga province (Luangwa sub-basin).

Forests in these watersheds are under threats at different scales from mining, industrial and agricultural activities as well as hydro-power generation which collectively exert a lot of pressure on the country's indigenous forest resources.

Table 1: Forest distribution by province

Province	Total forest area cover ('000 ha)	%
Central	7,910	17.5
Copperbelt	1,609	3.5
Eastern	5,152	11.0
Luapula	3,465	8.0
Lusaka	1,651	4.0
North-western	10,043	22.0
Northern[8]	7,212	16.0
Western	8,254	18.0
Total	**45,296**	**100.0**

Source: ILUA 2010

Dry woodlands and forests form the majority of forest types in Zambia, which are defined as vegetation types dominated by wooded plants that cover more than 10% of the ground surface[9]. This definition

[7] ILUA, 2010
[8] Includes the newly created Muchinga Province
[9] Chidumayo and Marunda, 2010.

encompasses a broad range of vegetation types from wooded grasslands and scrub**,** to closed forests. The main dry forests and woodlands found in Zambia can be separated into Miombo, Kalahari, Mopane and Munga or mixed woodlands. A significant area of dry evergreen forests is also found in the country. A brief summary of these main forest types is provided below.

i) Miombo woodland

Miombo woodland is the major forest type in Zambia, covering approximately 45% of the total land area. The woodlands are of considerable economic importance in Zambia for the supply of firewood, charcoal, timber and Non Timber Forest Products. Dominant species are represented by the genera *Brachystegia, Isoberlinia and Julbernardia*, and include key species such as *Brachystegia spiciformis, B. boehmii, Julbernardia globiflora, J. paniulata*; and *Isoberlinia angolensis* as well as the dipterocarp, Marquesia macroura[10]. The open canopy results in an undergrowth of dense grass.

ii) Kalahari woodland

Kalahari or *Baikiaea–Terminalia* woodland is found on Kalahari sands of the upper-Zambezi basin in Zambia's Western and North-Western provinces. It is the main source of commercial timber for Zambia. This woodland covers approximately 9% of the country's land area[11]. Kalahari woodland is similar to miombo woodland in terms of species composition, with *Brachystegia, Isoberlinia* and *Julbernardia* as common species but with *Baikiaea plurijuga* (Zambezi teak or Mukusi) and *Guibourtia coleosperma* (Rosewood or Muzauli) as predominant species. Other common species present include those of the genera *Burkea, Diplorhynchus and Parinari.*[12]

iii) Mopane woodland

Mopane woodlands are distributed in a band stretching from southern to eastern Zambia. They are more prevalent on heavier clay and nutrient rich, alkaline soils compared to miombo woodland. The woodland covers approximately 3.5% of the country's land area. Mopane woodland is important economically for timber and edible caterpillars, as well as charcoal and fuelwood. It is dominated by *Colophospermum mopane* which is typically single storied with an open deciduous canopy and has a less developed grass layer compared to miombo woodland[13]. *Colophospermum mopane* readily regenerates from rootstock following disturbance.

iv) Munga woodlands

Munga or *Acacia–Combretum* woodland is a more open or park-like deciduous woodland. The Munga woodlands are found over a large part of central and southern Zambia, covering almost 4% of the land area. The woodland lacks the main species of miombo and mopane woodlands and is one or two storied dominated by *Acacia, Combretum* and *Terminalia* species with undergrowth layer characterized by dense, tall grass.[14]

[10]Stringer *et al*.; 2012.
[11] Siampale, 2008.
[12] Sekeli and Phiri, 2002
[13] *Ibid.*

[14] Chidumayo, 2012a.

v) Dry evergreen forests

Dry evergreen forests cover less than 3–5% of the country's land area and are restricted to North-Western and Western provinces in Zambia. The three subtypes are distributed on Kalahari sands (*Cryptosepalum*), lake basin (*Marquesia*) and on the plateau (*Parinari*). Dominant species (dependent on the forest type) include *Cryptosepalum exfoliatum, Guibourtia coleosperma, Marquesia acuminata, Marquesia macroura, Parinari excelsa, Syzygium guineense, and Anisophyllea pomifera.*[15]

2.1.2.2 The state of forests in Zambia

In Zambia, land-use change and forest loss is the main contributor to the country's GHG emissions. The deforestation rate in Zambia currently stands at approximately 250,000 to 300,000 hectares per year.[16] This is above the global and regional average. According to the Climate Change Monitoring update on change in forest cover between 1990 and 2010, Zambia lost an average of 166,600 ha or 0.32% per year.[17] In total, between 1990 and 2010, Zambia lost 6.3% of its forest cover or around 3,332,000 ha. While most of the forests and woodlands in Zambia are found on customary land there is still no systematic or purposeful institutional and management planning framework for the sustainable use and conservation of forests on customary lands.

The protected forest area (PFA) system in Zambia (excluding parks, game management and botanical reserves) comprises mainly of National Forests (forests of national significance mainly for protection of major watersheds) and Local Forests (mainly located on customary land to protect biodiversity but still allow community access to the areas for subsistence livelihoods). The PFA estate accounts for 6.31% of the total land area in Zambia. By 2011 the PFA system contained 4,699,918 ha, divided into 177 forests distributed over ten provinces of Zambia with 12% falling under state land tenure and 88% under customary land tenure. Most PFAs are found in agro-ecological region III (high rainfall, wetter miombo). Indeed, 77% of the area under PFAs is found in Northern, Muchinga, Luapula, Copperbelt and North-western provinces. For instance, North-Western Province (NWP) hosts the highest number of 35 PFAs, covering 1.56 million ha while Lusaka Province has nil.

Forest Department data (2000 and 2011) shows a significant deterioration in the integrity and quality of the PFAs. Soaring levels of encroachment through cultivation and settlement continue to compromise the integrity of the PFAs. By 2011, it was estimated that *less than half of the PFAs could be considered free from encroachment or settlement* with the highest threat reported in North-western Province followed by the Copperbelt, Central, Luapula and Western provinces while data for Northern, Muchinga and Eastern Province were not available.[18] The threat is also internal; a significant reduction in the area under PFAs has taken place *by Government decree;* more than 280,000 ha of forest reserve have been degazetted or excised over the past decade[19] In NWP, it is estimated that at least 350,000 ha of PFAs are undergoing conversion, a process driven mostly by mining and this conversion is likely to increase as new mines open up.

[15] Siampale 2008; Chidumayo 2012a, Kindt *et al*., 2011.
[16] ILUA, 2008.
[17] FAO, 2011.
[18] GRZ, 2012a.
[19] *Ibid.*

2.1.2.3 Forests and socio-economic development nexus in Zambia

Forests occupy about 60% of Zambia's total land area. These forests provide both ecosystem services and goods significantly contributing directly and indirectly to the socio-economic development at both national and household levels. Zambia's development paradigm as reflected in the various key economic development policies, plans and programmes, recognizes the intricate relationships between forest conditions and their implications for carbon emissions and sequestration, agricultural land productivity, biodiversity conservation, energy, water, industrial and livelihood needs.

Climate change exacerbated by increased emissions is known and already manifested as a development challenge in Zambia affecting the productivity of key economic sectors of the Zambian economy such as agriculture. Forests are both means through which emissions can be reduced (mitigation) via carbon sequestration and storage. They also provide means for adaptation to the negative impacts of climate change and consequently contributing to continued national economic viability.

The agricultural production activities are intricately linked to forests. Fields and gardens are initially established on land from which much of the forest shrubs and trees are removed. The forest soils thus provide a nutrient source for arable production. Tree canopy and grass cover play major roles in reducing soil erosion and contribute to soil organic matter content build up essential for improving soil conditions to retain moisture – a key aspect of adaptation in Zambia's agricultural sector which is predominantly rainfall dependant.

Forests, water and wetlands are constantly interacting to maintain healthy and productive ecosystems. Forests play a critical role in the well-being and proper function of the hydrological cycle. Woodland clearing dramatically alters catchment hydrology. The immediate effect of woodland clearance is to increase peak stream flow and shorten flow duration. This has consequences for flooding, downstream water quality and regular supply of water for environment (such as conditions for wildlife habitat in a country whose tourism industry is primarily wildlife-based) and economic services reliant on regular stream flow (such as irrigation and hydroelectric power generation).

The key sources of energy in Zambia are charcoal, firewood and hydro-electricity. The ecological linkage between the forest sector and energy in the Zambian context is mostly perceived through a one way dependence the energy sector has on the forestry sector in meeting the energy demands for household and national socio- economic development. Charcoal and firewood are made available by cutting down trees leading to both deforestation and forest degradation. Hydro-electricity is dependent on sufficient quantities and regular flows from rivers.

Studies on evaluating social and environmental impacts of mining in Zambia have analysed mining effects on forests and forest livelihoods and state some of the direct impacts of the mining industry to include, the mining dependence on timber consumption for its operations and infrastructure. The surrounding forest areas also provide for settlements and wood and agricultural land needs of the settlers around the mining areas; and mining effluents pollute the environment. A recent report by the Office of the Auditor General (OAG, 2014) points to several institutional failures as contributing to the problems above including: (a) inadequate measures put in place by government to ensure that environmental degradation caused by mining activities are effectively and efficiently managed; (b) weak regulatory framework such as lack of revised EIA regulations, absence of water and air pollution control regulations, and lack of legislation for all producer responsibilities for companies generating waste; and (c) failure by mining companies to contribute to the Environmental Protection Fund as required by law.

Zambia has past and existing land management practices that offer opportunities to address deforestation and forest degradation as well as existing policies and legislations that could well support REDD+ implementation in the country. The management practices include the setting up of national and local forest reserves, joint forest management, community-based natural resource management, forest certification, agroforestry and conservation agriculture. Both the management practices and policies and legislations are discussed in the next two sections.

2.1.3 Land management practices in support of REDD+ implementation in Zambia

Zambia has experiences and lessons in forest and land management practices that have the potential for emissions reduction through reduced deforestation and forest degradation that can support and form the foundations for the implementation of this REDD+ Strategy (Kokwe, M. and G. Mickels-Kokwe, 2012; Mickels- Kokwe, G. and M. Kokwe, 2013).

2.1.3.1 National forests

National Forest reserves are established to conserve water catchment areas and protect biodiversity from damaging processes, such as deforestation, through legal or other effective means. The government, through the Forestry Department is the manager of these protected forests. Harvesting or other activities are restricted in these forests unless under special licences authorised by the Forestry Department. The management tools for National Forests are the management plans and licensing of the harvesting.

2.1.3.2 Local forests

Local Forest reserves are protected forest areas with the management objective of meeting the need for forest products for present and future generations of local people and settlements. The institutional arrangement for the management of the Local Forests is the same as the one for the National Forests, where government is the manager. Harvesting of wood products (poles, logs, firewood) from the Local Forest is through licences authorised by the Forestry Department. The harvesting of selected commercial Non Wood Forest Products (NWFP) is also subject to casual licensing by law. The management tools for the local forests are management plans and the licensing system for wood products.

2.1.3.3 Joint Forest Management

Joint Forest Management (JFM) has been tested in Zambia for quite some time since the early 2000s but discontinued due to inadequate legislative support especially in the benefit sharing regimes of the JFM model. JFM practices were found to have an application beyond the protected Local Forests. Applied in woodlands under customary lands, JFM bring on board inherent incentive measures and management planning for sustainable forest management. Potential off-farm income generation and employment opportunities under JFM may be boosted by REDD+ incentives providing enhanced livelihoods and stronger safety nets against deforestation and forest degradation.

2.1.3.4 Community Based Natural Resources Management (CBNRM) schemes

CBNRM is an economic incentive-based natural resource management approach which provides both lessons and building blocks for REDD+ implementation in the Southern African region, and in Zambia, in particular. Over twenty years of exploring and implementing CBNRM in Zambia, stakeholders in the country and southern African region have developed a substantial body of experience in the field of incentive-led management of communal land and natural resources. Key lessons from CBNRM that REDD+ implementation can build on include: incentive distribution favourable to the communities who bear the opportunity costs for SFM; appropriate partnership models for NRM; a substantial degree of

autonomy for communities to decide on the use of the benefits; and the need for innovative, flexible and locally adapted implementation of REDD+.

2.1.3.5 Certification of natural and plantation forests and forest products

In 2004, Zambia had six forests that were certified under a number of different certification schemes with forest areas as large as 7.5 million hectares in North Western Province under the Forest Stewardship Council (FSC) standards. At present, three options for certification exist in Zambia: certification of *forests*, and certification of forest *products* (commodity certification), and certification of *management systems* (ISO standards). Commodity certification in Zambia is private sector driven – the process of certification is undertaken by internationally recognized certifiers. As certification is costly, initiatives often involve collaboration among local communities, the private sector, non-governmental organizations and industry associations (e.g., Organic Producers and Processors Association of Zambia, OPPAZ; and the Zambia Honey Council). Forest commodities currently under certification include honey, beeswax, wild harvested oils (e.g., mungongo – *Schinzophyton rautanenii*), mushroom and wild fruit powder (e.g., baobab). The third option, certification of *management systems* (ISO standards) is currently emerging as a tool for the forestry industry sector in Zambia (e.g., Ndola Pine Plantations, Wood Processing Industries).

2.1.3.6 Commercial Plantations

The establishment of commercial plantations in Zambia was driven mainly by the need to supplement the supply of timber from the low yielding indigenous forests and the establishment of timber resources for the mining industry. Commercial plantations have been based on a variety of exotic tree species such as eucalyptus and pine. In 1968 the Industrial Plantations Division (IPD) was created under the Forestry Department (FD) to establish large scale forest plantations to meet domestic timber needs. In 1982, IPD was incorporated into the Zambia Forestry and Forest Industries Corporation as a parastatal company and mandated to establish 50 000 ha of plantations. In the recent past, annual wood demand from plantations has been rising as a result of increased activities in the mining and construction sectors. The rising wood demand has not been matched by a proportionate increment in areas planted. This has led to wood deficit from forest plantations thus exerting a lot of pressure on indigenous forests. While plantations are not encouraged under REDD+, for Zambia these are considered important in reducing pressure on indigenous forests that REDD+ would be predicated on.

2.1.3.7 Agroforestry

The application of agroforestry research and development has been on-going since 1983 in Zambia. The broad categories of agroforestry technologies tested and promoted in Zambia by Zambia national research system with support from the World Agroforestry Centre (ICRAF) included a number of options such as improved fallows, alley cropping, intercropping, relay cropping, fuel woodlots, fodder banks and biomass transfer. Agroforestry also provides *services* to agriculture and to the environment by contributing to (ICRAF 2013): ground cover and ecosystem integrity; soil regeneration; nutrient cycling; improved water management; biodiversity conservation; carbon sequestration; and micro-climate modification. The relevance of agroforestry to reducing emissions and the REDD+ objectives is quite apparent with respect to its aim of long term and low inorganic external fertilizer input characteristic that promotes agricultural intensification and contribution to carbon sequestration through the trees planted in association with crops and its contribution to increasing soil organic carbon content that enables adaptation to climate change effects.

2.1.3.8 Conservation Agriculture

Conservation agriculture is a practice currently being researched, developed and disseminated to smallholder farmers in Zambia by the government with significant support from cooperating partners. Key elements in the approach are zero- or minimum-tillage (reduced emissions from soil), spot planting and other techniques that aim at improving soil fertility, water use efficiency and efficient cycling of organic matter from crop residues into the soil. Organic fertilizers are used and some of the organic cropping patterns involve the planting of trees (*Faidherbia* spp.) on the same field as the crops (as an adapted agroforestry system). Conservation agriculture as a practice, if successful, could contribute significantly to creating permanent agriculture for small scale farmers thus reducing the need to convert forests and woodlands to agricultural use while at the same time contributing to climate change mitigation and adaptation from the agriculture sector.

2.1.4 Existing policies, legislations and plans in support of REDD+ implementation in Zambia

Over the past few years, Zambia has made significant progress on developing conducive policy and legislative instruments as well as strategic plans for addressing climate change within the broader national economic development context. Some of the specific achievements that form the building blocks for REDD+ implementation in Zambia include the following:

2.1.4.1 The Vision 2030 and Sixth National Development Plan (SNDP)

The ***Vision 2030*** adopted by the government in 2006 sets Zambia's long-term development vision reflecting the collective understanding, aspirations and determination of the Zambian people to be a *'prosperous middle-income country'* by 2030. The Vision 2030 emphasizes development based on "sustainable environment and natural resource management principles". The vision in its overarching principle states the need for the nation to have a competitive economy that is dynamic, resilient to external shocks and support the stability and protection of the biological and physical system. In addition to other socio-economic principles the Zambian economy should be characterized by development of policies consistent with sustainable environment and natural resources and is free from donor dependence (Vision 2030, pg.2).

The ***Sixth National Development Plan*** (2010) is Vision 2030's operational plan and recognizes environment as a cross cutting issue and environment mainstreaming as a core programme under the macro-economic chapter of the SNDP. The principal focus and mandate being that of building the capacity and facilitating other development and social sector's efforts to integrate environment and natural resources concerns in their development policies, plans and programmes. Climate change proofing of the proposed sector development mandates was done during the formulation of the SNDP providing the leverage points/measures for addressing sector development under a changing climate scenario.

2.1.4.2 National Policy on Environment (NPE, 2007)

In 2007 Zambia adopted the National Policy on Environment (NPE) whose expected outcomes and benefits (NPE, 2007, pg. 18) includes the achievement of measures that address the pressing need to manage the impact of human activities on the environment having particular regard to the following main areas of concern that include biodiversity conservation, deforestation, land degradation, air pollution and inadequate management of water resources and water pollution. This REDD+ strategy and implementation approach for Zambia responds to this recognized need by the NPE through an integrated natural resource management approach at landscape level.

2.1.4.3 National Adaptation Programme of Action on Climate Change (NAPA, 2007)

As a party to the Least Developed Countries (LDCs), Zambia has taken appropriate steps by responding to the United Nations Framework Convention on Climate Change (UNFCCC) initiatives, to which it is a party, and devised strategies against climate change through the *National Adaptation Programme of Action (NAPA 2007)* and other programmes. The NAPA is meant to complement the efforts of the government to ensuring that the livelihoods of the most vulnerable households are secured against the adverse impacts, risks and shocks as a result of climate change. This strategy reinforces the necessary measures to achieve the aspirations of the NAPA.

2.1.4.4 The Environmental Management Act (EMA, 2011)

The Environmental Management Act (2011) is a milestone towards the realization of environmental and climate change mainstreaming in Zambia. The Act has the legal provisions for the integrated management of the environment and natural resources in the national development context. It provides for the development of sector specific environmental management strategies and application of Strategic Environmental Assessment of legislation, policies, plans and programmes that may be determined to have an impact on the environment across all sectors of national development. It further provides for public participation in environment management decision making – social safeguards and the establishment of an Environmental Fund in support of encouraging investments in environmental safeguards for sustainable development.

2.1.4.5 National Climate Change Response Strategy (NCCRS, 2012)

Zambia also recently drafted a National Climate Change Response Strategy (NCCRS - 2012) which provides a basis for a Climate Change Programme. The NCCR identifies clear priorities for adaptation, mitigation and activities in various sectors of the economy and proposes a new institutional and governance structure for managing climate change issues in Zambia. This Strategy builds on the Government's proposed and partly functional structure to reduce emissions towards a climate resilient and green economy by focusing on biodiversity conservation and community involvement.

2.1.4.6 Draft National Policy on Climate Change (NPCC, 2012)

The Ministry of Lands, Natural Resources and Environmental Protection (MLNREP) being the focal point for the UNFCCC has developed a draft *National Policy on Climate Change (NPCC - 2012)* to provide a coordinated response to key climate change issues in the country. The vision of the policy is a prosperous climate change-resilient economy by 2030 that will have significantly increased living standards of the population and reduce its vulnerability to the impacts of climate change. The mission is to ensure that climate change is mainstreamed in the most economically important and vulnerable sectors of the economy (such as forestry, agriculture, water, etc.) by 2015 in the short term and by 2030 in the longer term emphasizing biodiversity conservation as a key pillar.

2.1.4.7 Draft Forest Policy (2014)

The policy, which was approved by Cabinet in December 2014, but has yet to be officially promulgated, is REDD+ smart and progressive. The policy makes explicit reference to the REDD+ objectives and as highlighted in the policy, "*Zambia is expected to contribute to minimizing the impact of greenhouse gas emissions and conserving biodiversity through the achievement of these policy objectives related to socio-economic and ecologically sustainable forest management, maintaining and increasing the total natural forest cover and by increasing the percentage of land under plantation*." The policy embraces social and environmental safeguards by emphasizing the important role of traditional authorities in the sustainable management of forests and equitable benefit sharing among stakeholders as well as the importance of

biodiversity conservation. The policy also recognizes carbon as a forest product like timber and others but the forest regulations have yet to specify rightful claimants to carbon rights.

2.1.4.8 Draft National Agriculture policy (2014)

A review of the adequacy of policies and legislations in supporting REDD+ implementation in Zambia (Matakala, 2014) found the draft NAP (2014) to be climate and REDD+ smart. The policy explicitly recognizes the significance of climate change adaptation by promoting climate-smart agricultural practices such as conservation agriculture and agroforestry and linkages to other sectors such as forestry, energy, land use and infrastructure development. For instance, in its Objective #8 "*To promote the sustainable management and use of natural resources*", the policy outlines a number of cross-sectoral measures relevant to this strategy: a) promoting sustainable land management technologies including conservation agriculture; b) promoting afforestation, community woodlots and agroforestry; c) promoting integrated agriculture especially among smallholder farmers (crop diversification); d) promoting use of renewable energy resources (solar, wind, use of agricultural waste, etc.); e) promoting energy efficient technologies in agricultural production and processing; f) developing and promoting water harvesting and storage infrastructure; and g) promoting the construction and maintenance of climate resilient agricultural marketing infrastructure.

2.1.4.9 Revision of the forest Act (1973) to Forest Bill (2014)

The Forest Act of 1973 was premised on central command and top-down forest management with no provision for community involvement in sustainable forest management (SFM). In 1999, the GRZ revised the 1973 Act with progressive provisions for community and Joint Forest Management (JFM) management. The 1999 Act was never ratified but has been revised to provide even more progressive provisions. For instance, carbon is recognized in the 2014 Forest Bill as a product that can be bought and traded. It also provides for important social and environmental safeguards by recognizing the significance of local community knowledge and affirming Community Forest Management (CFM), Joint Forest Management (JFM), and Private Forest Management (PFM) as important interventions to achieve SFM and equitable benefit sharing in forest resources management. The Forest Bill responds well to the REDD+ objectives.

2.1.4.10 National Biodiversity Strategy and Action Plan (NBSAP, 2005)

The NBSAP (2005), though relatively old, was developed in response to Zambia's consent to become a signatory to the UN Convention on Biodiversity (UNCBD). The Strategy recognizes deforestation as a key threat to biodiversity conservation including plant loss and habitat destruction and it sets up management objectives intended to reduce emissions from deforestation. The strategy recognizes the need for sustainable forest management by advocating the conservation and sustainable use of forests and trees for biodiversity conservation as advocated in the National Policy on Environment, Environmental Management Act, UN Convention on Biodiversity, draft Forest Policy and Bill as well as the draft National Climate Change Policy. This NBSAP, currently under revision, responds well to the REDD+ objectives.

2.1.4.11 Decentralization Policy (2002) and Implementation Plan (2009)

The Decentralization Policy and Implementation Plan provide for the Government to devolve decision-making authority to district and sub-district levels. The goal of the Implementation Plan is "*to achieve a fully decentralized and democratically elected system of governance characterized by open, predictable and transparent policy making and implementation processes, effective community participation in decision-making, development and administration of their local affairs while maintaining sufficient*

linkages between the centre and the periphery." This is in line with current discussions and thinking on scale of application for REDD+ activities at sub-national level. Devolved functions under the Policy and supported by the Implementation Plan include conservation and management of natural resources, provision of environmental services, land allocation and utilization, land use planning, sustainable water resources management and sanitation. These provisions are aligned with UNFCCC safeguards guidelines and UN-REDD+ objectives.

While there are supportive policies/legislations/plans and management practices that could provide opportunities for REDD+ implementation success in Zambia, it is important to examine in detail the contemporary key drivers of deforestation and forest degradation to better inform national strategic interventions to reduce emissions from deforestation and forest degradation. The next Chapter provides an analysis of the proximate drivers and underlying causes of deforestation and forest degradation in Zambia.

CHAPTER 3: DRIVERS OF DEFORESTATION AND FOREST DEGRADATION IN ZAMBIA

Zambia has identified agricultural expansion, wood fuel, timber extraction, bush fires, mining, and land use and infrastructure development as the direct drivers of deforestation and forest degradation with the underlying causes underpinned by demographic, economic, technological, policy and institutional as well as cultural causes (Figure 2).

3.1. Proximate Drivers

Wood fuel

Charcoal and firewood make up over 70% of the national energy consumption in Zambia as only 20% of the population has access to electricity. Charcoal is an important source of energy for both rural and urban populations in Zambia and it is estimated that 98% of low-income families (which make up 85% of the urban population) depend on charcoal as their main energy source. The significance of charcoal's contribution to forest degradation is exemplified by the estimates amounting to 144,662 hectares per annum of woodland required to produce charcoal in four provinces of Zambia out of the nine provinces[20]. Firewood is in high demand especially in rural areas for cooking and heating needs at household level and also among tobacco farmers especially those producing Virginia tobacco which requires smoke curing as well as for brick burning in the booming construction of houses in the rural and peri-urban areas of rural towns. It is also in high demand by fisher folks in rural areas for fish smoking to dry the fish.

Agricultural expansion

Agricultural expansion is the second highest driver of forest loss in Zambia[21]. A growing population has led to increased pressure for agricultural land in order to meet national and subsistence food requirements. Agricultural expansion is caused both by shifting subsistence cultivation and extensification of subsistence and commercial farming. Agricultural expansion is estimated to account for up to 90% of forest cover loss, often for small scale farming systems using shifting cultivation practices[22].

[20] Emmanuel Ngulube Chidumayo (2013). A review of Charcoal in Zambia. report prepared for FAO and Forest Department in Zambia

[21] Vinya *et al*., 2011.

[22] *Ibid.*

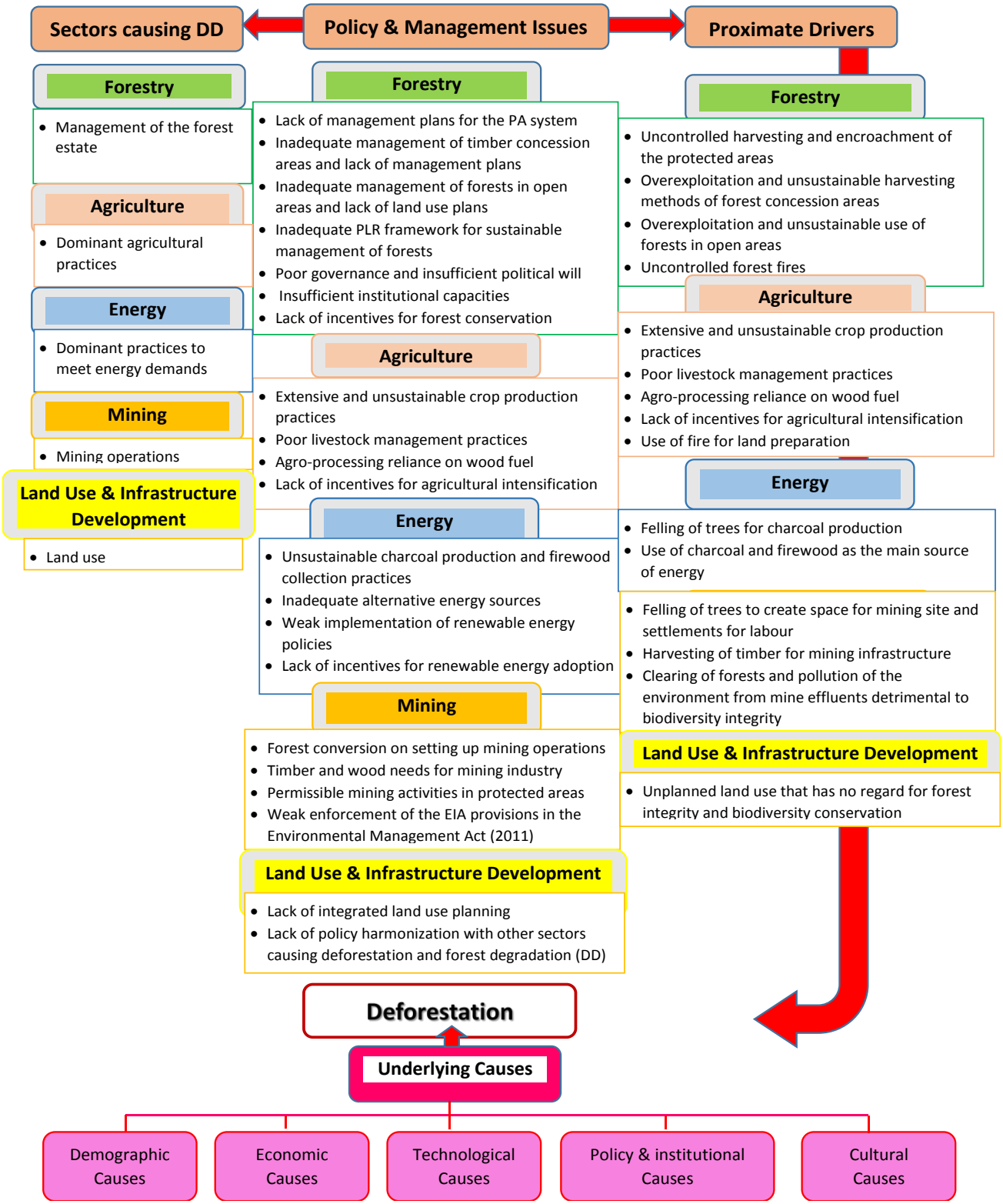

Figure 2: Proximate drivers and underlying causes of deforestation and forest degradation in Zambia

Timber extraction

Timber is extracted and used in construction and for furniture, packaging materials, joinery and curios. Unfortunately calculations of the annual loss/degradation of forests due to logging from timber harvesting are wanting in the country. This is mainly due to lack of capacity within the Forestry Department to monitor both timber off-takes in licensed concession areas and unlicensed (illegal) timber off-takes. The demand for timber has over the past few years been exacerbated by the expanding and intensifying construction activities in the country and international demand for valuable timber species existing in the country such as *Pterocarpus chrysothrix* (Mukula), *Pterocarpus angolensis* (Mukwa or Mulombe), *Guibourtia coleosperma* (Rosewood or Muzauli), *Colophospermum mopane* (Mopane), and *Baikiaea plurijuga* (Zambezi/Rhodesian teak or Mukusi).

Bush fires

The majority of late bush fires in Zambia are man-made and these mainly burn light litter biomass, such as leaves and other herbaceous materials during the dry season. It is estimated that during the first 25 years of regeneration up to 50% of the forest biomass is killed by late bush fires in Zambia[23]. The significance of the suppression of possible increased carbon stocks and sequestration through the bush fire killing of forest biomass is further highlighted by the fact that over 75% of the forest areas are burnt annually.

Mining

Studies on social impacts of mining in Zambia reveal mining effects on forests and forest livelihoods and state direct impacts of the mining industry to include, displacement of forests and customary land uses in the mining site and mining operations consumption of timber and the indirect effects of mining induced infrastructure expansion. Timber is used in the various operations of the mine, particularly in pit mining where timber is used for pit props and as rail sleepers. Employed mining labour also engages in unsustainable agricultural practices and other income-generating activities such as charcoal production. These contribute to carbon emissions through deforestation and forest degradation. Industry non-compliance with mining and environmental regulations as well as licensing conditions is significantly contributing to environmental degradation manifested in air and water pollution through chemical loading from mining effluents (OAG, 2014).

Land use and Infrastructure development

Lack of integrated land use planning remains a big challenge for Zambia with several sectors (e.g., land, forestry, agriculture, local government, tourism, urban planning, mining, etc.) executing their planning mandates in isolation of each other. This has led to haphazard and ineffective land use planning at national level resulting in unwarranted forest loss. This is further exacerbated by the fact that the current Town and Country Planning (Amendment) Act (1997) has limited scope as it does not apply to customary areas which are quite extensive. Integrated land use planning will have a strong bearing on REDD+ implementation in Zambia as it defines a hierarchy of land use rights that affect forest management. Infrastructure development especially for roads, schools, health facilities and electricity grid networks among others, are on the increase and are also expected to contribute to deforestation and forest degradation.

[23] Chidumayo, 1994; Ward *et al*., 1994; in ECZ, 2010.

3.2 Underlying causes

There are a number of main Zambian context specific categories of underlying causes that underpin or unchain the proximate drivers of deforestation and forest degradation in Zambia. These include high poverty levels, demographic factors, economic and technological constraints, policy and institutional arrangements, and environment factors (Figure 2).

Poverty levels

Poverty is identified as the highly ranked driving force behind the proximate drivers of deforestation and forest degradation. In this strategy development process, we have discovered that all issues related to inadequate alternative employment opportunities, limited income generating opportunities, marginally diversified livelihood options and limited energy sources are considered as ingredients of high poverty levels. Forests in Zambia provide socio-economic safety nets in terms of food security under unfavourable climate conditions, medicines when people are not able to afford formal hospital fees and NTFPs for income generation, food and health security.

Demographic causes

Zambia's population is growing at a rate of over 3% per annum and this places increased demand for **fuelwood by households, increased demand for agricultural land, increased demand for timber** and increased probability for bush fires. Mining and other infrastructure developments are push factors for in-migration of people to areas near the available social amenities resulting in need for settlements and agricultural land and energy sources all of which lead to forest clearing and carbon emissions.

Economic causes

The economic fiscal regime structure of Zambia requires incentives for conservation and sustainable use of forests. There are no incentives for forest products value addition. The result is a preference by community members to transform a standing forest to other economic uses perceived to be more profitable in the short term such as agriculture with fertilizer subsidies from government than forest conservation. The recent upsurge in international demand for the Mukula tree (*Pterocarpus chrysothrix*) in Zambia has seen unprecedented unsustainable extraction of this species from the forests. This provides an example of commodity prices and international market demand influencing for forest timber products and unsustainable extraction.

Policy and institutional causes

There is inadequate policy articulation and differences between policy and the complex reality of implementation. Forest management in Zambia is very weak with inadequate allocation of human and financial resources to the Forestry Department for carrying out its mandate of forest management and monitoring. The policy conflicts are best exemplified by instances of other sectors such as education and health unknowingly legitimizing illegal settlers in protected forest areas by providing education and health facilities to people who have encroached into the protected forest reserves where they are not supposed to be according to the Forest Act. The other prominent manifestation of policy inconsistencies is the issuing of mining exploration and operation licences by the Ministry of Mines, Energy and Water Development (MMEWD) in declared protected forest areas

Technological causes

Associated with agricultural expansion in Zambia are the technological practices for agricultural production that do not address long-term soil fertility constraints in the prevailing cropping systems in Zambia. As a result most farmers depend on inorganic fertilizers that deal with soil fertility for a given

season. When farmers are not able to afford fertilizers, cultivation of the same piece of land for crop production can only be sustained for a few years and then they are forced to open new lands that are more fertile, and in a lot of cases, this will be in forested areas.

Charcoal production technology currently used (earth kilns) is so highly inefficient that it requires more wood biomass per unit of charcoal produced and required for producing reasonable amounts of charcoal to make good profits. In short, the technology has both low conversion and recovery rates. In addition, the forest area where the charcoal is produced is completely devoid of any forest management to guarantee the regeneration required for sustaining the forest as a renewable energy source.

Timber is used in the various operations of the mine, particularly in pit mining where timber is used for pit props and as rail sleepers. The mining industry is not legally obliged to contribute towards sustainable management of indigenous forests nor is it obliged to establish forest plantations to meet own timber needs. However, the industry is legally obliged to conduct progressive re-vegetation on and around dump sites and tailing site facilities.

Cultural causes

The value attached to biological resources emanating from tradition and culture has implications on how the resources may be used. Biological resources since time immemorial have been used for food, shelter, beverages, fibres, tools, medicines, religious purposes and aesthetic values. In some communities biological resources are considered as God given, hence to be harvested without any hindrances. Furthermore, exploitation of these resources is driven by customs and/or tradition for basic needs and as a source of cash income. This, coupled with inadequate regulatory mechanisms, leads to over exploitation of biological resources as well as destruction of habitats which in turn causes changes in species composition.

3.3 Sectoral and policy approaches to addressing deforestation and forest degradation

The basis for identifying the appropriate options and developing strategic objectives for consideration in the development of the Zambian REDD+ strategy (from an integrated natural resources management perspective and at landscape level with a nested approach) has been derived from an analysis of the practical issues and key sectors of the Zambian economy that contribute to deforestation and forest degradation or benefit from an integrated approach such as water and wildlife.

Forestry sector

In theory, National and Local Forests are well protected. In practice, the Forestry Department, due to resource constraints is not capable of providing the day-to-day protection and management of the protected forest estate. This has rendered protected forest areas to be vulnerable to significant threats from deforestation and forest degradation. Findings from REDD+ preparedness studies and others confirm that all forests under the jurisdiction of the Forestry Department are inadequately managed, lacking any form of management plans or consistent actual practice. These problems are amplified at the lower (district) levels. For instance, holders of pitsaw or concession licenses, who by law are obliged to prepare plans of operations and annual work plans, rarely do so – and get away with it due to inadequate capacity of the Forestry Department in planning, managing and monitoring the forests in the country.

From a policy and legal perspective, it will be important for Zambia to speed up the promulgation of the recently approved Forest Policy and ratification of the Forest Bill which contain provisions for Community Forest Management (CFM), Joint Forest Management (JFM) and Private Forest Management to supplement the FD's lack of capacity to manage Zambia's protected forest estate. For timber concessions, it is important to separate the forest licensing function from the monitoring function for purposes of efficiency and transparency. To that effect, an independent timber concession inspection unit to monitor timber harvests and conveyance is recommended. Participation of communities, traditional authorities and NGO's in the management of forests is seen as a viable pathway for enhanced capacity for management, monitoring and enforcement of adherence to sustainable forest management.

Agricultural sector

Soils in Zambia are relatively inherently poor in fertility especially in the vast areas of the high rainfall zones with high acidity levels and the western and southern parts of the country with predominantly shallow sandy soils. This is further exacerbated by the dominant agricultural practices used by the farmers where fertility improvement for increased productivity is based on using soil amendments mainly in form of inorganic fertilizers that only provide fertility to the soils in a short term during the growth period of the crops to which the fertilizer has been applied. It is also common among the small-scale majority farmers with poor access to inorganic fertilizers, to sustain their productivity by clearing new forests where the soil is relatively fertile.

From a policy perspective, promotion of climate smart agricultural (CSA) practices and targeted fertilizer subsidies would help buffer small-scale farmers against the risks of climate change. Both the Fertilizer Input Support Programme (FISP) and Agroforestry should have in-built incentive measures that award adopters.

Energy sector

Biomass energy, in particular firewood and charcoal, form the largest part of Zambia's energy mix and is the dominant household energy source. The current practices for charcoal production fall short of making charcoal production sustainable in relation to forest regeneration in forest areas harvested for charcoal hence the need for sustainable charcoal production methods and arrangements. A number of development planning instruments acknowledge the importance and need for the promotion of alternative energy sources; however the efforts and impacts of a number of pilot activities in the promotion of energy efficient technologies for charcoal and firewood utilization and alternative energy sources remain inadequate. The determinants of low adoption rates for energy efficient technologies such as appropriateness of the technologies to specific socio economic circumstances need to be addressed.

From a policy point of view, the Forestry Department (FD), Ministry of Mines, Energy and Water Development (MMEWD) and Zambia Development Agency (ZDA) have overlapping mandates when it comes to charcoal. FD is responsible for licensing, enforcing production, transport and sale of charcoal, while the MMEWD has authority to monitor the levels and structure of competition and pricing within the energy sector. ZDA is also mandated to develop a rational and implementable approach to improve sustainability of biomass energy supply and raise end-use efficiencies. Despite these shared mandates, the three institutions administer projects in isolation with no collaboration towards a cross-sectoral approach. Cross-sectoral collaboration and harmonization of policies/acts among energy, water, forestry and Zambia Development Agency will be critical to remove jurisdictional ambiguities over charcoal and promote synergies.

Water sector

Water is intricately linked to all the other sectors – forestry, agriculture, energy, wildlife, land use, infrastructure development and mining. **Land** and **water** resources are essential for farming, grazing, forestry, wildlife, tourism, urban development, transport infrastructure, and other environmental functions. Wetlands, streams and rivers are important in sustaining aquatic habitat and its biodiversity which is important for livelihoods and the national economy. Removal of forest cover in the watershed increases sediment flow which affects water quality and availability for domestic and industrial uses, e.g., hydro-power generation and ecosystem services. For example, Beilfuss and Do Santos (2001)[24] revealed that the mass curve for rainfall in the Kafue catchment reported a significant increase in surface water runoff per unit rainfall from the Kafue headwaters region during the 1950s and 1960s. Changes in the pattern of runoff may be due to deforestation in the Copperbelt region (Mumeka 1986)[25]. **Watershed degradation** resulting from expanding agricultural development has been identified by Community Markets for Conservation (COMACO) as a serious threat in the Luangwa basin. Pressure to find more fertile soils has pushed farmers away from depleted, exhausted farmland into more sensitive, hilly landscapes where soil and water run-off is contributing to thousands of tons of soil loss annually. Over a 12-year period from 1989 to 2002, 21% of the forest cover across the upland watershed in Lundazi district (Luangwa watershed) was cleared.[26]

A Landscape approach (watershed level) through integrated natural resources management (as proposed in this strategy, see Section 5.1) is consistent with the Cancun Agreements to take into account the multiple functions of forests and other ecosystems. This strategy is focusing on three watersheds – the Zambezi, Kafue and Luangwa. Within these watersheds are national forest reserves, local forest reserves, national parks, game management areas, wetlands, rivers and streams, hydro-power development schemes, agricultural activities, settlements, mining and infrastructure developments. This offers an opportunity under REDD+ to address the drivers of deforestation and forest degradation in a much more comprehensive and coordinated way forcing harmonization at both policy and ground implementation levels through functional partnerships across all the relevant sectors above. Payment for Ecosystem Services (PES) will be important in fostering Community-Public-Private Partnerships (CPPPs) and incentives among sectoral (public), civil society, private and community actors to protect the headwaters of these catchments to sustain the multiple functions of the selected landscapes. Among the potential private sectors that have expressed willing ness to engage in PES schemes in Zambia include SAB-Miller/Zambia Breweries, Zambia Sugar Plc/Ilovo Sugar Limited and Lafarge. These companies depend on water from the Kafue sub-basin.

Wildlife sector

The wildlife sector is important for the tourism industry in Zambia. Zambia covers a total of 752,614 square kilometres and about 30% is reserved for wildlife. There are 20 national parks and 39 Game Management Areas (GMAs). These are areas buffering the national parks and provide important corridors and expanded habitat for wildlife and these are the areas where licensed hunting of wildlife occurs, thus

[24] Richard Beilfuss and David Do Satos (nd) working paper #2 program for the sustainable management of Cahora Bassa dam and the Lower Zambezi valley – Birdlife international.
[25] Mumeka, A, 1986. Effect of deforestation and subsistence agriculture on runoff of the Kafue river headwaters of Zambia. Hydrological Sciences Journal 31:543-554.
[26] http://fsg.afre.msu.edu/zambia/Community_Markets_for_Conservation.pdf

generating significant revenues for the country. Parks are non-contested areas and are strictly reserved for wildlife habitat. As such, national parks offer a great opportunity for reduced emissions from deforestation and forest degradation.

Like the water sector, the wildlife sector is intricately linked to all the other sectors mainly responsible for deforestation and forest degradation – forestry, agriculture, water, energy, mining, infrastructure development and land use. Removal of forests affects wildlife habitat and so does degradation of water resources. Mining and infrastructure developments affect wildlife corridors thereby impacting on wildlife movements, exposing wildlife to poaching and negatively affecting the tourism industry.

From a policy and management perspective, the wildlife sector has failed to capture the multiple benefits of parks such as outdoor recreation based on forest cover maintenance and effective water management due to a single use syndrome based on wildlife. There is lack of synergies with the other key sectors like forestry, water, energy, agriculture, mining and resettlements. Strategic partnerships with ZAWA and policy harmonization between wildlife and the other sectors would be crucial to achieve REDD+ objectives.

Mining sector

The current policy and legislative frameworks seem to put the interests of the mining industry above the environmental safeguarding legislation. For example in the land title deeds, express mention is made on the right of the state to all mineral resources that may be found under land that is on title to any individual or non-mining entity issued with a land lease title deed. The mining and minerals policy also states that mining is allowable in protected areas as long as it takes into consideration environmental mitigation measures; usually done through environmental impact assessments (EIA). There are serious loopholes in the EIA process to the extent that the assessments do not adequately provide for reducing the impact of mining on deforestation and forest degradation.

Policy implications are that EIAs and SEAs should be strictly enforced and undertaken by certified independent consultants to ensure transparency. Sensitive forests in open areas and protected forest reserves ought to be legislated as “no-go areas” for mining. REDD+ offer an opportunity to foster partnerships between the Zambia Wildlife Authority (ZAWA) and other relevant sectors.

Land use and infrastructure development

Land use planning at national and local levels remain a big challenge in Zambia with non-existent land use planning especially in the rural areas (customary lands) leading to unplanned settlements and infrastructure development that doesn’t take due consideration of forest conservation. Customary land rights, in their current form, are not secure under current legislations as they are not *de jure rights*. The legislations limit rights of use (e.g., carbon rights), rights of management, rights of exclusion and rights of alienation or transfer. There is need for formalization of integrated land use planning, secure tenure and resource rights on customary lands given that the majority of forests in Zambia occur on customary lands.

The REDD+ strategy presented in Chapter 4 below draws from the foregoing analysis on the sectoral and policy approaches to addressing deforestation and forest degradation in Zambia. The strategy includes the Vision, Goal, Core Principles, Strategic Objectives, Strategic Interventions and their brief description, Expected Results, Associated Risks and proposed Mitigation Strategies.

CHAPTER 4: THE STRATEGY

Forests are central to the achievement of a low carbon and green economy. The reduction in deforestation and forest degradation is one of the greatest challenges to sustainable development and reduction of emissions. The REDD+ strategy aims at assisting the country to reduce emissions in an effective, efficient, transparent and accountable way, and anchored on fairness and inclusiveness. Table 2 provides a comprehensive summary of the strategy.

Table 2: Vision, Goal, Principles, Strategic objectives, Strategic interventions, Expected results, Risks and Mitigation strategies

Vision	*A prosperous climate change resilient economy by 2030 anchored upon sustainable management and utilization of Zambia's natural resources towards improved livelihoods.*
Goal	*To contribute to national reductions in greenhouse gas emissions by improving forest and land management and ensure equitable sharing of both carbon and non-carbon benefits among stakeholders.*
Principles	1. ***Effectiveness:*** REDD+ activities in Zambia to reduce emissions and ensure sustainable natural resource management, improvement of rural community livelihoods and achievement of a green economy. 2. ***Efficiency:*** REDD+ programmes in Zambia to constitute long-term activities that result in optimal financial, ecological and social benefits to the key players – government, local communities, private sector and civil society; 3. ***Fairness***: REDD+ to be implemented on the basis of the principles of equality for all and human rights protection in forest management and natural resource management in general, including for women, the youth and other disadvantaged groups or individuals, local communities – all vulnerable to socio-economic and environmental change. REDD+ interventions shall ensure FPIC of all the above in any REDD+ and other large land use investments; 4. ***Transparency:*** REDD+ activities shall be undertaken openly to enable full understanding and opportunity for stakeholders to participate in decision-making and implementation, including free access to information to all stakeholders on all REDD+ interventions; 5. ***Accountability:*** REDD+ implementation shall be fully answerable to the people of Zambia and the international community in terms of relevance, process, funding, and results obtained; 6. ***Inclusiveness*****:** REDD+ implementation and decision making shall engage Zambians from diverse personal and experiential backgrounds by cultivating a culture where all citizens feel that they belong, and by fostering engagement with divergent perspectives that reflect the wide range of understanding and knowledge necessary for a vibrant REDD+ delivery; and 7. ***Sustainability***: REDD+ activities should in the long term be financed from domestically generated resources with a cost-benefit sharing framework in order to leverage performance based payments.

Strategic Objective (SO)	Strategic Intervention (SI)	Summary description of SI	Expected Results	Risks & Mitigation Strategies
Forestry: Three strategic objectives covering effective management of protected areas, open forest areas and timber concessions are presented with their strategic interventions responding to identified issues of inadequate management of National Forests, Local Forests and forests in open areas. For successful realization of the proposed objectives, management ought to be coordinated and functional implementation plans must be in place supported by capable institutions and enhanced cross-sectoral collaboration. The desired outcome is to link forest management for reduced emissions to benefit other key ecological components such as water resources, land resources, biodiversity conservation and enhanced livelihoods of communities from forest management within the selected landscapes. The recommended focal landscapes under this objective are the Zambezi, Kafue and Luangwa watershed areas whose National and Local forests as well as open areas are increasingly under threat of deforestation from competing land uses such as agriculture, energy, mining and infrastructure development which compromises the key ecosystem services that the selected watershed areas provide.				
1. *By 2030, threatened and unsustainably managed national and local forests are effectively managed and protected to reduce emissions from deforestation and forest degradation and contribute with ecosystem services across selected landscapes.*	1.1 Improving effectiveness of institutions and governance of the protected national and local forests through appropriate reforms.	This entails coordination, collaboration and harmonization of actions and policies among the forest, water, agriculture, land use, wildlife and mining sectors in: • The delineation of the watershed areas based on the ecological connectivity among forests, water resources and wildlife conservation; • Assessing the extent and scope of threats to the key National and Local Forests within the landscape; • Developing integrated natural resources management plans that optimize synergies and minimize trade-offs among the selected key ecosystem services within the respective landscape; and • Declaration of National Forests in the headwaters of each landscape as strictly protected areas by decree (Statutory Instrument).	Effective management of the protected area system and harmonized policies and legislations contributing to reduced national emissions from deforestation and forest degradation while contributing to sustainable water resources management and biodiversity conservation within the selected landscape..	1. The main risk would be delayed reforms due to lack of political will. This could be mitigated through NRCU engaging with the Zambia Parliamentary Conservation Caucus (ZPCC) to facilitate high-level lobbying and ratification of the Forest Bill by Parliament. 2. Lack of effective collaboration among the key institutions for joint action and policy reforms can be mitigated by government enforcement of the already existing intent by the three institutions (forestry, water and wildlife) to collaborate through their policy statements and enhanced by ensuring targeted funding at landscape level and coordination by one institution such as the Forestry Department.

	1.2 Enhancing participatory approaches to local forest management.	This intervention is focused on improving the management of selected local forests within the delineated watershed areas where collaborative management of Local Forests should be promoted through: • The selection of local forests in the watershed areas based on the ecological connectivity among forests, water resources and wildlife conservation; • Creation of appropriate multi-stakeholder fora and civil society involvement in forest management and governance issues; • Development of appropriate models for Community Forest Management (CFM), Joint Forest Management (JFM) and Private Forest Management (PFM) as advocated for in the new Forest Policy (2014); and • Provision of performance incentive-based payments for community members involved in the appropriate CFM and JFM models selected.	Effective forest management through incentivized collaborative approaches towards both carbon and non-carbon benefits. Enhanced capacity of FD for forest management and monitoring through partnerships with other stakeholders	Risk of delayed ratification of the Forest Bill (2014) could thwart realization of participatory approaches to forest management as the current Forest Act (1973) has no provisions for CFM, JFM and PFM. However, this could be mitigated through engagement of the ZPCC by the NRCU to facilitate high-level lobbying towards speedy ratification of the Bill by Parliament.
2. *By 2030, selected high value forests in open areas are effectively managed and monitored.*	2.1 Enhancing participatory approaches and traditional authorities' role in forest management and monitoring in high value forests in open areas.	The intervention focuses on addressing the need for enhanced management and monitoring of selected high value forests in open areas given that approximately 78% of the forests in Zambia occur on customary lands under traditional authority administration with no management regime in place. This will be achieved through: • Development of village/area level structures organized with clearly defined roles, responsibilities and benefits for community and traditional leadership participation in the management, monitoring and enforcement of the management plans of the selected high value forests in open areas; • Development of area specific management plans; and • Investing in certification schemes for sustainable natural forest management techniques for the non-woody and woody products giving the greatest financial rewards.	Enhanced capacity for monitoring and enforcement of forest management plans in open areas Enhanced compliance to planed forest management in open areas. Reduced emissions and improved biodiversity conservation and ecosystem services.	The main risk is that this intervention is not supported by the current legislation in force (Forest Act of 1973). This may be mitigated through the ratification by Parliament of the Forest Bill (2014) which promulgates devolution of management responsibilities of forests to local levels through CFM, JFM and PFM.

	2.2 Developing generic cost-benefit sharing principles for management of forests in open areas.	This intervention focuses on addressing one of the identified key determinants of success in the effective implementation of collaborative forest management in in open areas and local forests – which is the failure to develop and implement equitable cost and benefit sharing mechanisms between the state and participating communities. Benefit Distribution Systems (BDS) should provide effective incentives for actions, building support and legitimacy for collaborative sustainable management of forests in open areas leading to reductions in emissions. To achieve this improved collaboration the following are necessary: • Modification of the licensing system and/or fees within the confines of the revised Forest Bill of 2014 that makes provision for direct sharing of benefits between the government and any stakeholder from forestry products; and • Diversification of the forest products and values from the open forest area high value forests by based on a broad assessment of potential products and services with optimum benefits to the local communities (e.g. communal wildlife ranching, thatching grass, bee keeping, payments for controlled grazing, etc.).	Effective management of forests in open areas contributing to equitable sharing of both carbon and non-carbon benefits.	The inherent risk is that of "*elite capture*" where only a few people might benefit from effective management of forests in open areas leaving out the majority of community members. This could be mitigated through strict enforcement by the Forestry Department of the developed cost-benefit sharing guidelines.
3. *By 2030, all timber concession areas have management plans that are enforced and monitored with the full participation of local communities.*	3.1 Engaging traditional leaders and local communities in timber concession management.	This intervention is directed at addressing the inadequate adherence by concessionaires to concession regulations as a result of inadequate capacity for monitoring and enforcement of the regulations through; • Development of village-level structures with clearly defined roles, responsibilities and benefits for community and traditional leadership participation in the management, monitoring and enforcement of the management plans for the Concession areas.	Enhanced capacity for monitoring and enforcement of forest management plans in concession areas. Compliance to REDD+ safeguards and provisions of the advocated forest management approaches in the new Forest Bill such as: a) respect for the knowledge and rights of local communities;	Forest resources belong to the State and access is controlled by the State. Permitting systems generate no economic incentives for sustainable use and almost no incentive for communities to protect/manage forest resources. The current legislation in force (Forests Act, 1973) does not allow for the sharing of monetary benefits with communities. This could be mitigated by reform and transparency in the licensing system, ratification of the Forest

			and b) full and effective participation of stakeholders especially local communities in RDD+ related efforts..	Bill (2014) which allows for community participation in forest management and beneficiation.
	3.2 Strengthening local institutions for forest concession management and forest-based business development.	This intervention addresses the inadequate community institutions of the appropriate types and capacities capable of managing natural forests to encourage broad-based sustainable management of forest concessions through: • Capacity building and provision of access to resources for developing community-based entrepreneurs capable of managing natural forests as a business; and • Promotion of value addition cottage industries within the vicinity of concession areas.	Empowered local institutions assisting in the long term management and monitoring of forest concession operations and operating own forest business enterprises. Improved livelihoods of local communities.	The main risk is lack of political will to empower local institutions. This could be mitigated through awareness building among politicians on the important role of local institutions in sustainable forest concession management and the contribution forests can make towards improved community livelihoods and poverty reduction.
	3.3 Creating an independent monitoring unit for timber concession operations.	Currently, the Forestry Department issues forest concession licenses and monitors operations, albeit, with constrained human and logistical resources leading to increased illegal offtakes and leakages in financial returns to the state. To improve transparency, accountability and effective concession management will require: • Establishment of an independent timber concession inspectorate unit outside the Forestry Department to ensure accountability and transparency in timber concession operations.	Transparent forest concession licensing system contributing to good forest governance. Enhanced contribution of forest concession generated funds to national economy and local livelihoods.	The main risk is that the proposed timber inspectorate unit may not be acceptable at political level due to limited financial resources to create a new institution. As a mitigation measure, the NRCU and the ZPCC to lobby at high level (parliament) for creation of an independent timber inspectorate unit. Alternatively, a well-established natural resources *NGO network* such as the CBNRM Forum could be engaged to take on such a function with minimal financial needs. The Forestry Department should also be convinced that this is necessary for enhancing good forest governance assuring accountability and transparency.

Strategic Objective (SO)	Strategic Intervention (SI)	Summary description of SI	Expected Results	Risks & Mitigation Strategies
Agriculture: The objectives and interventions in the Agriculture sector are focused on promoting agricultural production intensification to reduce the need for expansion of agricultural areas to improve productivity while at the same time capturing the synergies among food security, adaptation and mitigation of emissions from agricultural practices. The target for this approach is farmers surrounding the selected focal landscapes where the proposed forestry interventions in the forestry sector above are to be implemented.				
4. *By 2030, good agricultural practices that mitigate carbon emissions adopted*	4.1 Promotion of climate smart agricultural practices related to production.	This intervention addresses the need for agricultural intensification leading to reduced frequency of clearance of forests for increased agricultural productivity through: • The collaboration and coordination between the Forestry Department and the Department of Agriculture staff being trained in farming systems diagnosis for selecting area specific agricultural intensification practices; • The Forestry Department playing a critical role in the establishment of community nurseries and conducting extension services for appropriate on-farm agroforestry tree species and technologies for agricultural intensification; and • Implementing appropriate CSA practices demonstrations to improve adoption in the target areas.	Improved adoption of agricultural practices that reduce deforestation, reduce greenhouse gas emissions and contribute to increased farm household incomes.	The main risk is low adoption of CSA among farmers, perceived as a new technology with unclear results. This could be mitigated through farmer awareness campaigns, subsidized starter packages for CSA through the Fertilizer Input Support Programme (FISP) and on CSA practices.
	4.2 Provision of performance-based incentives for climate smart agricultural practices that mitigate carbon emissions.	Performance based incentives to farmers are necessary during the gestation period before the full economic and environmental benefits from the CSA practices such as conservation farming and agroforestry are realized in order to promote wide adoption of CSA practices. Performance-based incentives could include subsidized fertilizer, zero tax rates on farm equipment and inclusion of starter packs of agroforestry seed in the Farmer Input Support Programme (FSIP) and National Tree Planting Programme (NTPP). This will be achieved through: • Forestry Department and Department of Agriculture collaboratively lobbying for support programmes such as the FSIP and the NTPP to direct resources under these programmes among others to provide performance based incentives to farmers who adopt CSA practices; and	Increased adoption of CSA practices across the country contributing to reduced national emissions from agriculture, improved food security, farm household incomes and livelihoods.	The risk could be lack of financial resources by government to expand the FISP and NTPP to accommodate agroforestry and other requirements. This could be mitigated through partnerships with the private sector, e.g., tobacco companies to generate the required extra resources.

		• Development of indicators for measuring performance to determine incentives to be given to deserving CSA practicing farmers.		
	4.3 Promotion of good agricultural practices related to reduced emissions from agro-processing dependent on use of wood fuel from indigenous forests	To reduce the wood fuel pressure on natural forests for the processing of produce especially tobacco and fish, the main intervention would involve: • Establishment of fuel woodlots to carter for energy needs in agro-processing; • Making it mandatory for those involved in tobacco and fish processing to establish woodlots; • Providing a price premium mechanism and marketing preference for the sale of products processed from sustainably managed woodlots.	Relieved pressure on wood fuel demand from natural forests thus contributing to reduced national emissions from deforestation and forest degradation and enhanced forest carbon stocks.	The main risk could be farmer perception as to how long it takes to grow trees resulting in low adoption of fuel woodlots. This could be mitigated through farmer awareness campaigns on the economic and environmental advantages and benefits of fuel woodlots.

Strategic Objective (SO)	**Strategic Intervention (SI)**	**Summary description of SI**	**Expected Results**	**Risks & Mitigation Strategies**
Energy: Issues on energy as related to deforestation and forest degradation point towards the need for efficient and sustainable wood fuel production technologies and efficient utilization of wood fuel coupled with use of alternative energy sources. The sustainable wood fuel production should be focused in heavily deforested districts within and surrounding selected focal landscapes. On the demand side, the promotion of alternative energy sources is an option that requires FD collaboration with the energy sector. Based on the energy policy of 2008, a number of measures are spelled out for the realization of the reduction on dependency on biomass energy to other high efficient and affordable energy sources.				
5. *By 2030, regulated production of wood fuel (charcoal & firewood) and its improved utilization in place.*	5.1 Enhancing models for sustainable and regulated wood fuel production.	Underlying this strategic intervention is the need to make the sustainable charcoal production option fit into the desired outcomes of a REDD+ strategy that addresses both emissions reduction and economic development, through: (i) contribution to employment generation; (ii) maintenance and increased forest cover; and (iii) reduction of carbon dioxide emissions from the production process. The intervention will be achieved through an approach that focuses on interlinked sub-interventions along the charcoal value chain as follows: • Designation or certification of charcoal production areas with clear and enforceable management plans and secure land tenure and/or administration; • Improvement of charcoal production methods by building	Mitigation of GHG emissions from carbonization processes through improved production efficiency and enhanced carbon stock preservation in charcoal producing areas that are regulated through the coupe-shelterwood system.	There is an inherent risk of low adoption of improved and efficient charcoal production technologies due to high cost in comparison to the Business As Usual (BAU) scenario. This could be mitigated through deliberate subsidies by Government for improved and efficient charcoal production technologies.

		on what is already known and practiced in the country such as the application of the coupe-shelterbelt system for wood harvesting, promotion of the Casamance kiln which is an improvement over the traditional earth kiln to reduce emissions and increase charcoal yield compared to the current situation; • Capacity building through the training of charcoal producers and facilitation of local people or communities to have and exercise control over production areas through participation in monitoring and reporting about charcoal production data, biomass and carbon removal, regeneration that is transparent and easily verifiable, and provision of incentives/benefits to the land managers; • Putting in place an incentive system such as a premium price for charcoal and briquettes bought by the retailers from the designated certified areas; and • Lowering taxes/levies for the wholesalers and retailers participating in the regulated value chain.		
	5.2 Promotion of energy-efficient wood fuel utilization technologies.	This intervention will build on the on-going efforts observed on the promotion of improved stoves with higher energy efficiency and requiring reduced biomass that are being tested by a number of organizations in the country but with limited success due to inadequate diagnosis of targeted areas' socio economic circumstances and introduction of unsuitable types. This intervention will require the following approach: • Diagnosis of the best bet energy efficient technologies based on the socio-economic and biophysical conditions in the selected target areas; • Development of the appropriate type of energy efficient stoves supported by the analysis from the diagnosis above; • Promotion of appropriate improved firewood and charcoal stoves through demonstrations;	Mitigation of GHG emissions from combustion of charcoal and firewood in traditional cooking stoves and improved livelihoods.	Improved wood fuel utilization technologies could lead to more people switching to using wood fuel and thus exacerbating deforestation and forest degradation. This could be mitigated through promotion of affordable alternative renewable energy sources such as solar, biogas, Liquefied Petroleum Gas (LPG) and wind backed by detailed diagnosis of the socio-economic circumstances in the targeted areas.

		• Promoting other energy efficient provision technologies such as briquetting and pelleting technologies to enhance the improved stoves' efficiency; and • Promoting use of alternative sources of biomass other than wood such as agricultural waste, e.g., maize and groundnut husks, etc. in the briquetting and pelleting production of solid fuel.		
6. *By 2020, appropriate and affordable alternative energy sources widely adopted.*	6.1 Promotion of alternative renewable energy sources.	The strategic objective focuses on diversifying energy sources from firewood and charcoal with the aim of improving energy efficiency and effectiveness, reduce emission of greenhouse gases and contributing to the mitigation of environmental degradation resulting from wanton cutting of trees for charcoal production and firewood for household energy. This intervention will be achieved through: • Diagnosis of the targeted areas' specific potential for developing the appropriate energy saving technologies ranging from the harnessing of solar, biogas, wind, geothermal, LPG to mini-hydro schemes; • Developing models for the promotion of the appropriate technology based on its technical requirements and the local socio-economic circumstances of the targeted areas; and • Promotion of appropriate alternative sources through smart partnerships with technology development entities to facilitate wider adoption.	Contribution to national development, improved livelihoods and reduced net emissions from deforestation and forest degradation.	There is a risk of low adoption of alternative renewable energy sources due to high cost of the technologies. This could be mitigated through deliberate subsidies by Government on alternative renewable technologies and through smart partnerships with the private sector.
	6.2 Promotion of smart incentives for alternative energy sources adoption.	Smart incentives for alternative energy sources primarily refer to incentives targeting energy consumers but must also address the "bad" sources of energy contributing to deforestation and forest degradation principally along the charcoal value chain. For consumers, incentives could include: • Introduction of low to zero tax rates on alternative energy technologies; and For bad producers/ retailers: • high tax rates/levies for non-green and uncertified wood fuel.	Reduced national emissions from deforestation and forest degradation, biodiversity conservation and improved livelihoods.	The risk could be that the alternative sources are more expensive than the BAU sources and are culturally unacceptable such as LPG. Initial mitigation measures would entail public awareness raising and subsidies towards adoption of alternative renewable sources as an incentive followed by development and enforcement of a renewable energy policy with clear incentives.

Strategic Objective (SO)	Strategic Intervention (SI)	Summary description of SI	Expected Results	Risks & Mitigation Strategies
Mining: The importance of mining to the country's economy and the legislative status governing the sector places it in a relatively advantageous position against other sectors. Strategically, the approach aims to ensure that the on-going and future threat of mining as a driver of deforestation and forest degradation is addressed through legislative reforms restricting where mining can take place in light of the sector's contribution to deforestation and forest degradation. The targets for the interventions in this sector are national**.**				
7. *By 2020, threatened and sensitive protected areas legislated as "no-go areas" for mining and infrastructure development.*	7.1 Enforcing the Environmental Management Act (2011) to protect threatened and sensitive protected areas (PAs).	This intervention addresses the need for ensuring maximum protection of the protected areas. . This will be done through: • Developing guidelines and designation of protection status of PA systems classification using the IUCN PA categories on a differentiated scale of protection. This would facilitate rationalization of Zambia's PA system to have classes of sensitive areas that should be strictly protected; and • Lobbying for the provision in the EMA restricting any anthropogenic activities in classified sensitive IUCN category 1 areas such as headwater protection forests, National Parks, key wetlands and high value conservation forests, etc.	Protected areas fully protected and contribute to reduced national emissions from deforestation and forest degradation as well as biodiversity conservation and ecosystem services. Rationalized national PA system mitigating potential land use conflicts and contributing to good forest governance	There is the risk of lack of political will to make protected areas "no-go-areas" for mining especially given the high lobbying power of the mining industry. This could be mitigated through raising awareness among politicians on the important role of biodiversity conservation and other ecosystem services provided by protected areas and rationalization of the PA system.
	7.2 Harmonizing existing legislation in order to address overlapping concession/ licensing systems.	Concession/licensing systems are administered under various legislations such as land, agriculture, forestry and mining. The Forestry Department, National Heritage Commission (NHC), Zambia Wildlife Authority (ZAWA), Zambia Environmental Management Agency (ZEMA), Water Resources Management Authority (WRMA) and the Department of Energy and Water Affairs all have jurisdiction to manage overlapping areas where forests are located. This segregated management of the various pieces of legislation by various government agencies with overlapping mandates is one of the causes of a fragmented approach to effective management of the environment. The intervention will involve: • Identification of overlaps in mandates (opportunities for synergy); and • Identification of gaps in mandates (areas for strengthening); and • Development of mechanisms for collaboration and harmonization including clear roles and responsibilities.	Harmonized approaches towards effective management of Zambia's forests and PA system contributing to good forest governance and cost-effectiveness as well as reduced national GHG emissions.	There is the risk of the NIMBY (Not In My Backyard) syndrome – where the various government agencies would want to stick to their own individual legislative mandates thus resisting harmonization with other legislations. This could be mitigated through strong political will and guidance as well as awareness raising among technocrats on the multiple functions of forest ecosystems and value to their respective mandates as well as cost-effectiveness of harmonization.

	7.3 Developing guidelines for PA classification.	Using the IUCN PA categories on differentiated scale of protection, this would facilitate rationalization of Zambia's PA system and mitigate against "protecting everything" or "protecting nothing".	Rationalized national PA system mitigating potential land use conflicts and contributing to good forest governance.	Lack of political will in support of rationa-lization of Zambia's PA system. This could be mitigated through awareness raising among politicians on the significance of a rationalized PA system and contribution towards conservation of forest carbon stocks.
8. *By 2025, mining industry contributing to management of surrounding indigenous forests and establishment of forest plantations for own timber needs.*	8.1 Encouraging the mining industry to invest in forest plantation establishment to meet own wood needs.	Currently, the mining industry is dependent on indigenous forests for its timber and other wood needs. Timber is mainly used as pit-props. Firewood is also used in making red bricks for construction of workers' housing. All these contribute to forest degradation. The industry could grow forest plantations to meet its own timber and fuelwood needs. To reinforce this requirement, the following measure needs to be taken: • Lobbying for the amendment of the Mining Act or the Environmental Management Act, whichever is more appropriate, to include a provision for compelling the mining companies to invest in their own forest plantations or sustainable management of an existing local forest in degraded areas close to the mining facility for the provision of timber for own use.	This would contribute to reduced national emissions from forest degradation and to enhanced forest carbon stocks.	The risk is that the mining industry may be unwilling to invest in forest plantations. This could be mitigated through tax incentives to the industry in order to attract their participation as well as penalties for non-compliance.
	8.2 Enhancing the Mining industry compliance to Strategic Environmental Assessment	This intervention is focused on addressing the observed loopholes in the EIA process to the extent that the assessments do not adequately provide for reducing the impact of mining on deforestation and forest degradation. To seal the loopholes the following should be done: • Enforce the use of Strategic Environment Assessment instead of the EIA to compel developers to look beyond their immediate areas of operation to catchment areas for environmental mitigation actions and compliance; • Reinforce the SEA process to make the SEA undertaking not to be under the direct control of the developer to avoid manipulation	Mining industry compliance to social and environmental safeguards	The main risk is weak enforcement of the EIA/SEA provisions within the EMA (2011). This could be mitigated through improved capacity at ZEMA to undertake EIA/SEA or alternatively and even better, engage an independent firm to train and certify independent consultants to undertake EIAs/SEAs in order to ensure transparency and accountability.

		of the scope of mitigation measures by the industry; and • Capacity building of ZEMA and selected FD staff with requisite SEA methodological knowledge and resources for effective monitoring of the environmental compliance of the consultancy companies conducting SEA and eventual compliance of the mining industries to the implementation of the mitigation measures.		

Strategic Objective (SO)	**Strategic Intervention (SI)**	**Summary description of SI**	**Expected Results**	**Risks & Mitigation Strategies**
Land use and Infrastructure: The contribution of competing land uses and infrastructural development to deforestation and forest degradation stems from inadequate land use planning. There is no effective system for land use planning and land use zoning based on land suitability at any level in Zambia. The lack of clear definition of relative authorities between government and traditional authorities (chiefs) renders land use planning and zoning problematic. The strategic objectives and interventions therefore attempt to provide mechanisms that empower local communities through enhanced land and resource rights and improving land use planning compatible with sustainable forest management. The interventions under this sector will be initially targeted within the districts in the selected focal landscapes.				
9. By 2025, land and resource rights on customary land legislated and secured.	9.1 Developing integrated land use plans that are compatible with sustainable management of forests to guide infrastructural development and developing mechanisms that ensure long term ownership and usufruct rights to local communities.	This intervention focuses on removing the barriers to land use planning and encouraging more secure land tenure for those communities who would like to protect forests in open areas under the traditional authority jurisdiction. The intervention is anticipated to be augmented by the 2009 Urban and Regional Planning Bill that promulgates spatial, aesthetic, economic and social development of urban and rural areas through Integrated Development Plans (IDPs). This intervention will be achieved through the following measures: • Develop systems of multi-stakeholder land use analysis and planning and consensus building; • Conduct analyses of the ecological sustainability of the known and foreseen land use systems; • Economic analysis of agricultural/ land use systems to identify sustainable systems that are economically attractive and convince decision-makers and authorities of the importance of stopping encroachment	Land use plans that are compatible with sustainable forest management and other competing land uses such as infrastructure development. Clarification of land use rights by many players that affect forest management. Measures that ensure/ improve land security and resource rights rather than tenure reform, which is much more difficult to achieve in a relatively short period.	The risk in how to reach consensus on the land use zoning under competing land uses. The mitigation measure would be the results of a well-designed and executed ecological and economic analysis of the key area specific land use options with the highest returns to the majority in the community.

		• Legislative reforms to make land use planning an effective legal instrument for conservation; • Develop land use planning and zoning systems; • Develop guidelines for appropriate land use zoning at the district level; and • Enforcement of zoning provisions and land use restrictions.		
	9.2 Supporting efforts towards ratification of the Customary Land Bill, Forest Bill and Urban and Regional Planning Bill.	The Customary Land Bill (2014) promulgates formal recognition of customary land tenure and usufruct rights. However, this bill has been in draft form for more than two years. Its ratification would facilitate security of land tenure and resource rights on customary lands. Similarly, the Forest Bill (2014) promulgates participatory processes and BDSs that are fair to all players including local communities. The Urban and Regional Planning Bill would allow for integrated land use planning on customary lands. Currently, there is no law that facilitates IDPs on customary lands. This intervention could be achieved through concerted lobbying efforts by the NRCU to get the bills ratified by Parliament.	*De jure* community land and resource rights on customary lands.	The main risk could be lack of political will resulting in continued delays to ratify the Customary Land Bill, Forest Bill, and Regional and Urban Planning Bill. The National REDD+ Coordination Unit (NRCU) to engage with the ZPCC, local development partners and civil society (e.g., the ZCCN and ZCBNRMF) to facilitate speedy ratification of the Bills by Parliament.

Strategic Objective (SO)	**Strategic Intervention (SI)**	**Summary description of SI**	**Expected Results**	**Risks & Mitigation Strategies**
Capacity Development: REDD+ design and implementation is a complex undertaking that requires a significant amount of time and investments in building the required skills and knowledge of the various players including REDD+ governance issues (safeguards, stakeholder engagement and participation), REDD+ implementation (accessing finance, financial management, benefit sharing and technology applications) and tracking REDD+ performance (MRV, FREL/FRL, setting up REDD registries, etc.). Therefore, the Strategic Objective and Interventions attempt to target the perceived key knowledge and skills gaps as well as institutional readiness of the various key players anticipated to play a key role in the strategy implementation from REDD+ governance, implementation and tracking REDD+.				
10. By 2020, relevant institutions capacitated to enable them to plan, manage, implement and monitor REDD+ programme activities.	10.1 Developing institutional and stakeholder capacities to implement and monitor REDD+.	Based on the proposed institutional arrangements of the Strategy, the capacity building should focus on: a) Forestry Department – growth and yield modelling, analysis of digital data from satellite images and land use/land cover (LULCCF) change mapping for National Forest Monitoring System (NFMS) and inventories; establishment of a functioning quality assurance and quality control for LULUCF reporting; b) NRCU – resource mobilization, policy advocacy;	Various key players capacitated to effectively implement and monitor REDD+ in Zambia.	The main risk would be lack of adequate financial resources to conduct the capacity building. This could be mitigated through Government commitment to fund capacity building as a core national programme towards sustainable management of natural resources by increasing national budget allocations towards the

		c) ZEMA – quality assurance and control, SIS registry maintenance and environmental information archiving, and upward reporting; d) Department of Agriculture – Climate Smart Agricultural (CSA) practices, technologies and extension; e) Department of Energy – sustainable and renewable energy production and utilization technologies, extension; f) Local Government, ZAWA, Forestry Department, Department of Energy, NHC, WRMA – multiple functions of forest ecosystems, community engagement and beneficiation; g) Civil Society – policy analysis and advocacy, scaling up of CSA and sustainable energy technologies as well as SFM practices; h) Traditional Authorities – land rights, participatory decision-making and land administration; i) PDCCs, DDCCs, ADCs – Integrated land use planning, safeguards, monitoring and financial management; and j) Local Communities – CSA practices and implementation, sustainable energy production and utilization technologies, financial management and benefit sharing, and community rights.		natural resource sector. Such effort could be augmented by NRCU efforts to leverage strategic funding at both bilateral and multilateral level as well as from private and innovative sources.
	10.2 Developing REDD+ benefit sharing models.	Without clear benefits to the players, REDD+ implementation is compromised hence the importance of building capacity in developing equitable BDS for REDD+. This falls within the ambit of the NRCU. REDD+ benefits incentivize long term participation of multiple players in REDD+ activities. Equitable and results-based BDS flow from the Cancun Agreements and are intended to provide safeguards to protect community rights, contribute to poverty reduction and sustainable development. BDS also provide the basis for effective implementation and permanence by incentivizing activities that contribute to carbon sequestration, reduced emissions and improved rural livelihoods. As such, BDS models ought to: involve	Clear BDS among all key players including their roles and responsibilities (results-based), and amenable to clear MRV and information systems that allow for assessment of benefits and reporting to the international community. The Safeguards Registry capacitated on information collection and reporting (monitoring).	Elite capture could be a risk to an equitable BDS. To mitigate this, put in place BDSs that are compatible with MRV reporting system at global level as Zambia would be obliged to monitor its BDS and report upwards accordingly.

		all players – government, local communities, land owners, private entities, etc., in forest management decision-making; costs and benefits assessments; access to information and avoidance of "elite capture". These elements would be the focus of capacity building on BDS involving all key players.		
	10.3 Developing MRV and Safeguards Information Systems for REDD+ programme in Zambia.	The MRV reporting falls under the responsibility of the Forestry Department. The department will require some capacity building in using a combination of remote sensing and ground-based forest carbon inventory assessment. The proposed NGO to be recruited by tender will be responsible for collecting and reporting information on safeguards to ZEMA and the Forestry Department. The staff of all three institutions will have to be trained on how to correctly collect and report information on MRV and archiving.	Functional MRV and SIS at national level drawing from the sub-national level.	Risk could be lack of funding to source expertise to develop the MRV and SIS. This could be mitigated through government commitment to ensure the MRV and SIS are in place at beginning of implementation phase and through NRCU mobilizing resources from bilateral and/or multilateral sources.

CHAPTER 5: IMPLEMENTATION OF REDD+ IN ZAMBIA

5.1 Implementation Approach

The implementation approach for the REDD+ activities is underpinned by the premise of the nationally endorsed and desired need for the activities to contribute to the triple function of mitigation, adaptation to climate change impacts and national development goals.

REDD+ implementation will be focused on tackling different drivers of deforestation in both the forestry and other identified key sectors in particular agriculture, water, wildlife, energy, mining and land use. This national REDD+ strategy will be implemented through a landscape approach at watershed level. The identified focal landscapes are: a) Zambezi watershed; b) Kafue watershed; and Luangwa watershed (Figure 3):

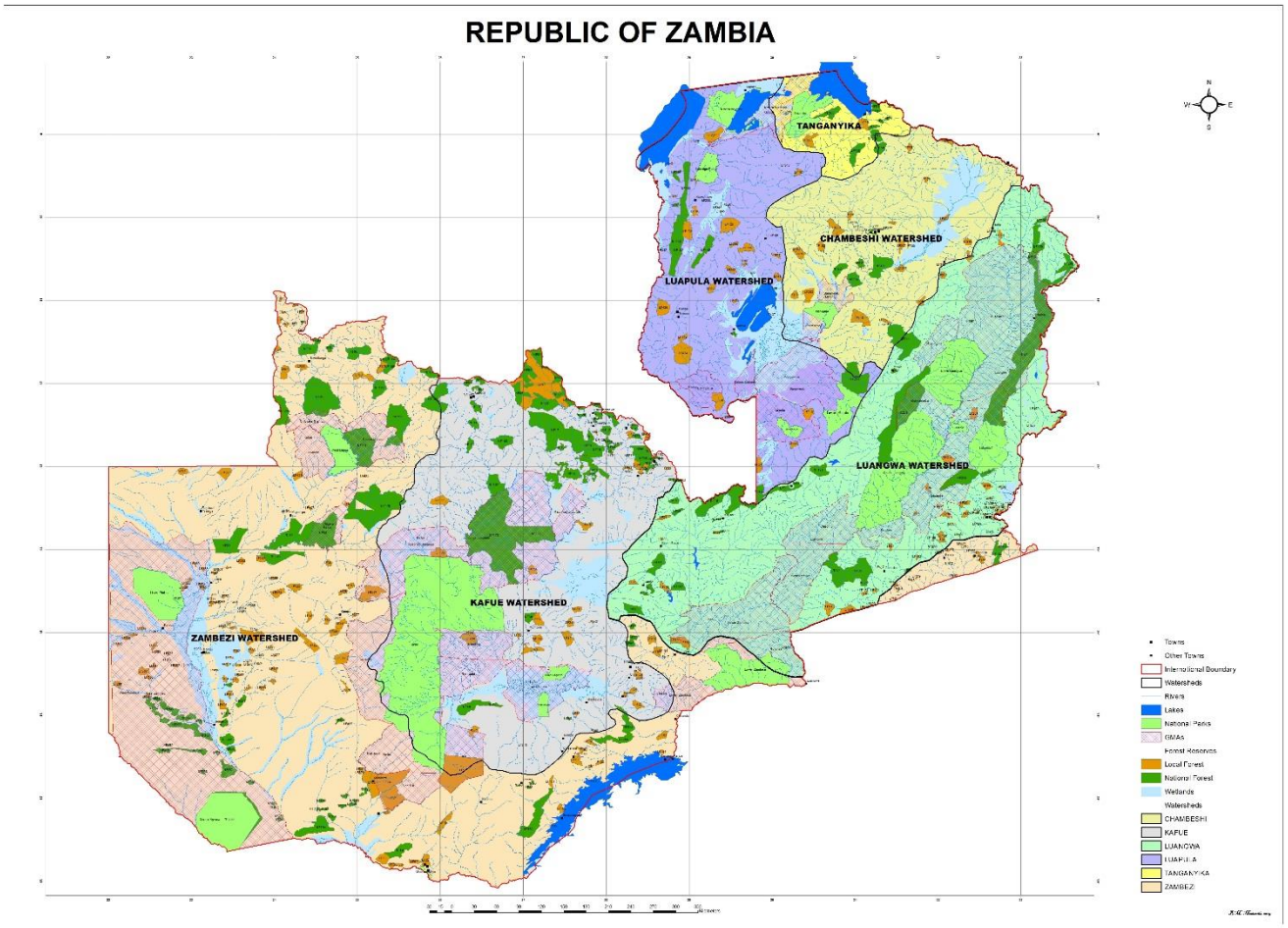

Figure 3: Priority focal landscapes for REDD+ implementation in Zambia (source: this study)

Nested within these focal landscapes are protected forest areas (national and local forests), open areas, national parks and game management areas, major wetlands and rivers, agricultural and mining activities, infrastructure developments, human settlements, traditional authorities and at jurisdictional level – Provincial Development Coordinating Committees (PDCCs), District Development Coordinating Committees (DDCCs) and Area Development Committees (ADCs). Table 3 provides a summary of the nested characteristics of each of the selected focal landscapes.

For instance, the three focal landscapes have a total of approximately 29 million ha of forest consisting of national and local forests, national parks and game management areas (this is not including forests in open areas); 83 designated wetlands including six (6) ramsar sites (Barotse floodplain, Bangweulu swamp, Busanga swamp, Luangwa floodplain, Lukanga swamp and Kafue flats); both subsistence and commercial agricultural activities including sugarcane plantations and tobacco schemes; mining activities mainly based on copper, cobalt, uranium and gemstones; and eight (8) hydro-power stations (Table 3).

Table 3: Nested attributes of the selected focal landscapes

KEY ATTRIBUTES	FOCAL LANDSCAPE			
	Zambezi watershed No. and Est. total area (ha)	**Kafue Watershed No. and Est. total area (ha)**	**Luangwa watershed No. and Est. total area (ha)**	**Total Area (ha)**
National forests	73 (2,306,975)	67 (1,829,003)	31 (1,427,492)	171 (5,563,470)
Local forests	49 (934,464)	37 (543,393)	68 (227,178)	154 (1,705,035)
National parks	6 (1,420,794)	3 (2,232,082)	7 (1,711,971)	16 (5,364,847)
Game Mgmt. Areas	13 (7,795,622)	11 (3,394,910)	11 (5,115,435)	35 (16,305,967)
Sub-total Area (ha)	**12,457,855**	**7,999,388**	**8,482,076**	**28,939,319**
Designated wetlands (includes rivers, swamps, dambos, etc.)	43 (2,104,634) Includes the Zambezi Headwaters	31(1,793,089) Includes the Kafue, Lamba and Lusitu Headwaters	19 (140,389) Includes the Mkushi Headwaters	83 (4,038,112)
Agricultural activities	Smallholder cassava, sorghum, tobacco and livestock based system practising slush and burn agriculture and use of wood for fish processing and tobacco curing.	Commercial sugar plantations, extensive smallholder and commercial maize and livestock based system practising clearcutting of trees for farm sites and use of wood for tobacco processing.	Key extensive smallholder farming area of Zambia with highest diversity of crops (maize, cotton, tobacco, groundnuts) and livestock practising clearcutting of trees for farm sites and use of wood for tobacco curing.	-
Mining activities	Copper, cobalt and uranium mining and extensive explorations	Key Copper and gemstone mining area of the country	Small scale mining of gemstones	-
Traditional authorities	Well organised traditional authority at village and chiefdom levels with a King in western part of the watershed.	Well organised traditional authority at chiefdom level	Well organised traditional authority at village and chiefdom levels with two paramount Chiefs in the eastern part of the watershed.	-
Large infrastructure developments	Mines; Hydropower stations: Kariba, Victoria Falls, Batoka Gorge, Kabompo Gorge and Zengamina (at Kalene Hills); road networks.	Mines; Hydropower stations: Itezi-tezhi and Kafue Gorge; Sugarcane plantations; road networks	Agro-processing industries developments on going, Mulungushi and Mita hills Dams, Pia-Manzi hydropower station; road networks.	-
Key threats to forests, biodiversity and other ecosystem services	• Intensified mining • Agricultural expansion • Projected increase in settlements from in-migration due to mining • Intensive dependence on unregulated wood and NWFP extraction for livelihoods • High poverty levels	• Intensified mining • Increased demand for industrial and road infrastructure • Urbanization (population pressure) and charcoal demand • Relative high competing demands for water abstraction	• Continued watershed degradation due to agricultural expansion as main source of livelihoods • Continued river siltation due to watershed degradation • Intensified charcoal production • High poverty levels	-

Source: this study using various sources.

This approach takes into account all land uses in a holistic way and works to lessen the competition for natural resources among different sectors. The approach ensures that the best possible balance is achieved among a range of different development objectives, including climate change mitigation and adaptation, environmental and biodiversity conservation, enhanced economic productivity (e.g., from agriculture, mining, infrastructure development, tourism, etc.) and improved livelihoods. By adopting a watershed-based landscape approach we aim to capture multiple objectives based on the multi-functionality of the priority focal landscapes identified (as shown in Table 3), combining natural resource management with environmental and livelihood considerations, placing people and their institutions as an integral part of the system rather than as external agents operating within a landscape. To operationalize the integrated landscape approach the following overarching considerations and guiding principles are highlighted[27].

5.1.1 Overarching considerations

1. Landscapes are human constructs and include the physical and biological attributes of an area together with the institutions and people who influence the area and the cultural and spiritual values of the area.
2. The optimal balance between the objectives of carbon emission reduction, productivity enhancement and livelihood improvement will best be met at the landscape scale by carefully mapping the key ecosystem and human well-being connectivity within the selected landscape.
3. Landscapes evolve over time and the objective of carbon emissions reduction activities will not be to maintain the status quo but rather to ensure the continued and growing supply of goods and services while mitigating carbon emissions.
4. The extent and limits of a landscape will be defined in terms of the strategic and management objectives that are the aim of the carbon emission reduction intervention.

The principles guiding the approach include:

1. *Legal and policy frameworks must enable landscape-scale carbon emissions reduction initiatives. Gaps in policy and especially legislation that will impede the successful and effective implementation of the strategic objectives will need to be addressed. In particular, it will be important to facilitate the ratification of the Customary Land Bill (2014) and Forest Bill (2014) both of which promulgate community land tenure and meaningful participation in sustainable management of forests as well as equitable beneficiation, respectively.*
2. *Stakeholder platforms will be needed to enable governmental, non-governmental and civil society actors to negotiate and take decisions at a landscape scale. This will ensure that the upstream carbon offset initiatives' effects do not necessarily cause negative impacts for the downstream populations. The PDCCs, DDCCs and ADCs within the focal landscape would be better placed to play that role.*
3. *The interests of all actors, especially the inhabitants of the landscape must be assured. Carbon offset interventions will need a construct of carbon emissions structures that are anchored in mainstream legally recognized structures at the local level for which redress systems are clear to all actors. For this to happen, ZEMA will need to be decentralized to the district level or delegate the responsibility to DDCCs and/or ADCs and train them on the redress mechanism application.*
4. *The capacity of institutions operating within the landscape will need to be strengthened especially the local community and traditional authorities, PDCCs, DDCCs and ADCs. In particular, capacity building on integrated natural resource management planning, SIS data collection and financial management.*

[27] Adapted from the Sangha Guidelines for Landscape Approaches to Conservation and Development in the Congo Basin Forests.

5. *The integrity and resilience of ecological systems within the focal landscape will be essential components of the landscape approach. For example, carbon emission reduction initiatives in selected forest landscapes must contribute to enhancing the ecological integrity of land resources, water resources, wildlife resources, agricultural productivity and biodiversity to which the forest is intricately linked at the ecological level. Zambia aims to address UNFCCC safeguards through the existing PLR framework (and improvements to it where there are gaps using the CAST) and build an SIS.* Therefore, established systems, processes and procedures will be used that have been put into place to meet Zambia's international obligations and existing policy commitments. The national UNFCCC SIS REDD+ will comprise two key components:
   a) *a set of policies, laws and regulations through which safeguards are addressed and respected; and*
   b) *a safeguard information system (SIS), as a systematic approach for collecting and providing information on how UNFCCC safeguards are being addressed and respected throughout REDD+ implementation.*
6. *Environmental, social technological and economic changes will present new opportunities and challenges for landscapes and hence the need to embed experiential learning and adaptive management based on evidence-based lessons learned. Lessons from Section 2.1.3 will be important.*

5.2 Institutional Arrangements

REDD+: A Multi-Sectoral Programme

REDD+ is a mechanism that intends to enhance the value of standing forests and incentivize sustainable forest management through a multi-stakeholder approach and a green development perspective. Following the conclusion of the REDD+ Strategy preparation, there is need to outline both the institutional arrangements and structures needed to implement the strategy with the full participation of all stakeholders. As the REDD+ Programme is a multi-stakeholder and multi-sectoral based programme, there will be challenges in implementation of the strategy. The implementation of the strategy requires institutional arrangements for implementation that are multi-sectoral and multi-layered but working in harmony to achieve the overall programme objective of reducing emissions through a verifiable measurement of reduction in emissions commensurate with reductions in the rates of deforestation and forest degradation. Because it is multi-sectoral in nature, the Programme will have structures to be responsible for multi-sectoral policy coordination to ensure harmony and an enabling environment for REDD + implementation. However, such institutional arrangements should not lead to new structures but should instead be imbedded in existing structures of Government in line with the Paris Declaration on Aid Effectiveness. This will lead not only to cost effectiveness but also to better coordination of programme implementation.

The proposed institutional arrangements include government and traditional institutions working side by side with donors, private sector, NGOs, CSOs and local communities in the implementation, monitoring, evaluation and reporting during implementation of the REDD+ Programme. It is important that arrangements at the sectoral coordination level and implementation level of the REDD+ Programme are sound and sustainable and that they are integrated with on-going activities in the country.

5.2.1 Coordination

National Committee of Permanent Secretaries

At the apex, REDD+ will be overseen by a National Committee of Permanent Secretaries (NCPS) from relevant ministries whose role will be to provide policy guidance, review programme progress and challenges, approve annual budgets and ensure synergy in donor support to the national climate change programme (Figure 4). The NCPS is an institution of the GRZ that was created to oversee financing on climate change at national level. It is currently responsible for the National Climate Change Fund under the Green Climate Fund financing mechanism for climate change mitigation and adaptation at national level. An important function of the NCPS is to follow up on all policy and legislative matters that need to conclude or be enacted to facilitate the smooth implementation of the national climate change programme.

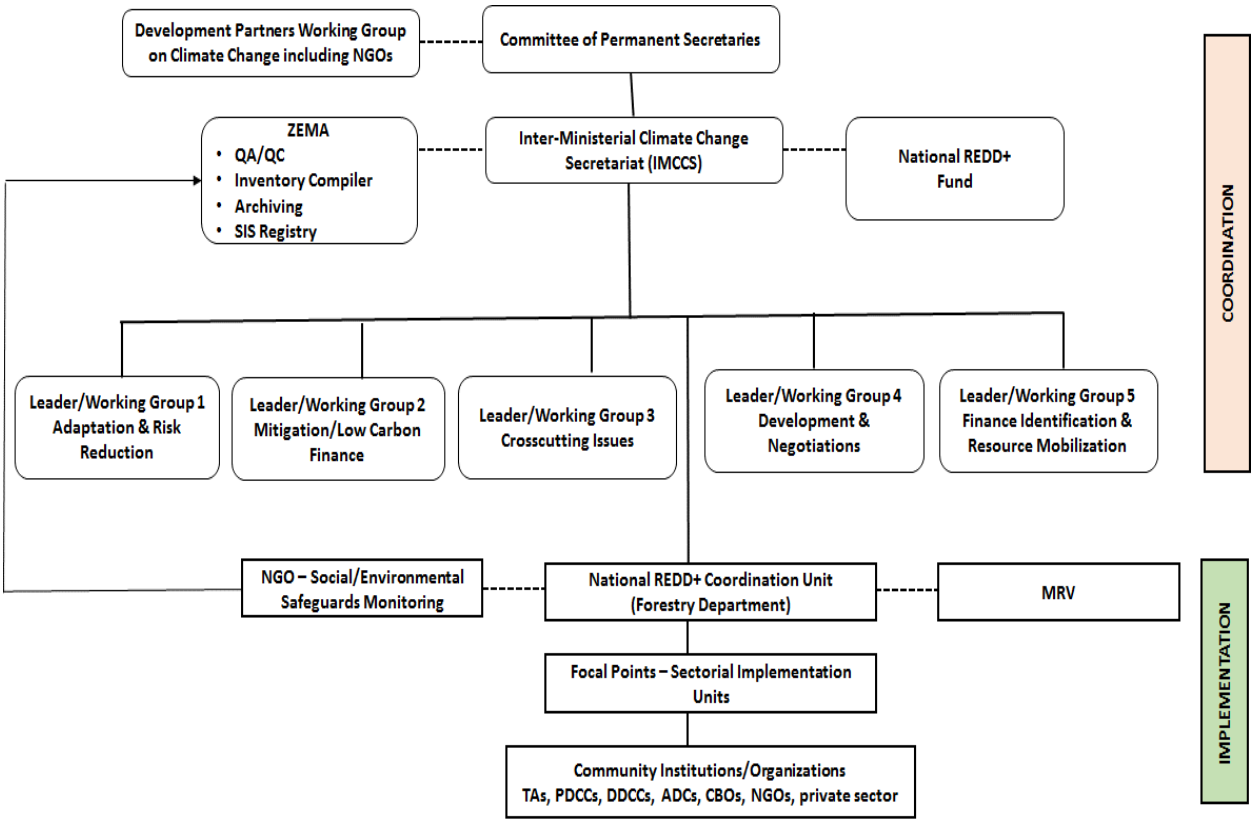

Figure 4: Institutional arrangements for REDD+ implementation in Zambia

The NCPS is chaired by the Permanent Secretary of the Ministry of Finance and National Planning (MoFNP). Its membership includes Permanent Secretaries from: the Ministry of Lands, Natural Resources and Environmental Protection (MLNREP), Ministry of Agriculture and Livestock (MAL); Ministry of Mines, Energy and Water Development (MMEWD); Ministry of Local Government and Housing (MLGH); and Ministry of Commerce and Industry (MCI). Currently, representation on the NCPS does not include members from private sector and civil society and that has to change to ensure transparency at all levels

of decision making. The NCPS will meet at least twice a year to transact its business. Its meetings will maintain records which will include its main decisions and directives on the implementation of the National Climate Change and REDD+ Programmes.

Inter- Ministerial Climate Change Secretariat (IMCCS)

There is already a functioning IMCC Secretariat housed in the Ministry of Finance and National Planning (MoFNP) with five technical experts as leaders of Working Groups on Adaptation & Risk Reduction, Mitigation/Low Carbon Finance, Crosscutting Issues, Policy Development & Negotiations, and Finance & Resource Mobilization. The IMCCS will be the Secretariat of the NCPS (Figure 4) and will provide it with regular reports regarding progress in the implementation of the REDD+ Programme highlighting achievements, challenges and actions needed to address the challenges. In addition, updates on issues related to progress in policy and legal reforms needed for REDD+ programme implementation will be prepared by the IMCC Secretariat. It is important that the leaders of the Working Groups who will constitute the Secretariat are competent experts in the fields their Working Groups will deal with.

Development Partner Working Group

There will also be a Development Partner Working Group (Figure 4) providing high level policy advice and support to resource mobilization efforts composed primarily of UNDP and FAO, bilateral donors, as well as NGO, CSO and private sector representatives. This Working Group will be critical in providing information to the NCPS on developments in aid architecture and how that could impact on the REDD+ Programme and how the programme could relate and interface with other donor-funded programmes and projects under the environment and climate change agenda.

5.2.2 Implementation

Forestry Department

As the REDD+ Programme aims at reducing carbon emissions by reducing the rate of deforestation and forest degradation, the forests will be the fulcrum of the programme. Therefore, it follows that the Forestry Department will play a pivotal role not only in programme implementation but also in the monitoring, evaluation and reporting of programme implementation. The Forestry Department will head and constitute the National REDD+ Coordination Unit (NRCU) which will have the overall responsibility for programme implementation coordination (Figure 4) working closely with the Sector Focal Points who will be responsible for implementation of programme activities at the Sector/Department level. The core functions of the NRCU include planning, preparation of annual work plans and budgets, financial management, procurement of goods and services, co-ordination, supervision, monitoring, continuous evaluation of the programme and reporting. These functions of the Forestry Department at the national level will be replicated at the provincial and district levels as the department already has functioning though under-resourced offices at these levels.

An important aspect of the programme implementation function will be the Measurement, Reporting and Verification (MRV) for REDD+ which will be consistent with the agreed Green House Gas (GHG) National Inventory System of the Government of the Republic of Zambia. The lead institutions for the five sectors identified as sources of GHG emissions, have been agreed by Government through the mandated GHG reporting body, the Zambia Environmental Management Agency (ZEMA). The lead institution for Land

Use, Land Use Change and Forestry (LULUCF) has been designated as the Forestry Department in the Ministry of Lands, Natural Resources and Environmental Protection. Under the proposed structure, the Forestry Department (FD) will be responsible for compiling information for LULUCF. An important responsibility for FD will be to ensure adherence to Good Practice Guidance (GPG) from the IPCC on elements such as transparency, accuracy, completeness, comparability and consistency. The FD will compile the LULUC/REDD+ GHG report in collaboration with aligned institutions.

Sectoral Level

At the sectoral level, the NRCU will work through the Focal Points (Figure 4) in the Ministries of Agriculture, Energy and Mines, Local Government, Commerce & Industry for the day-to-day supervision and monitoring of on-going activities as they relate and affect these sectors. It is important that each of the sector ministries constitutes a programme implementation unit in their ministries and give the units sufficient space and authority to implement the activities of the programme. The Focal Points should be staff with sufficient authority to take responsibility for the programme activities. This arrangement will be replicated at the district level where the sectors are represented. Guidelines on operational procedures and processes involved in the implementation of the REDD+ Programme will be prepared to facilitate smooth programme implementation.

The Focal Points will liaise with the NRCU in preparation of budgets and Annual Work Plans and will report to the NRCU progress in programme implementation and challenges faced at the sectoral level. The Focal Points will also provide information on developments in the sector that may impact on the implementation of the programme.

Community Level

While the implementation of the REDD+ will be led and guided by Government institutions, at the ground and field level, it will be the local communities through traditional leaders and village committees who will be the implementers (Figure 4). The 2014 Forest Bill recognizes carbon as a tradable commodity. It also provides for important social and environmental safeguards by promoting community participation in forest management through CFM, JFM and Private Forest Management (PFM). This development requires that institutions at the community level are prepared and capacitated to take on these responsibilities. The bill is therefore compliant with the aims and objectives of the REDD+ strategy which provides for the participation of local communities in the management of forest resources to reduce deforestation and forest degradation.

The District Forest Officers working through the District Development Committees and the District Councils will lead the implementation of the REDD+ programme by providing technical support and guidance through extension activities. The District Forestry Officers will support the work of the local and village committees to achieve the objectives of sustainable forest management. It has been shown that the participation of local communities is an important aspect in fire management in forests in India and Mexico. Fire management constitutes the single most important activity in promoting regeneration and stand vitality in the management of Miombo woodlands in Zambia. Awareness campaigns and training in fire management techniques will be an important activity in the implementation of the REDD+ programme.

However, the sustained participation of local communities in sustainable forest management will be dependent on the implementation of benefit sharing mechanisms that can incentivize local communities. Integrating climate change objectives in community-based forest management programmes creates additional benefits and livelihood opportunities. The success of the proposed CFM, JFM and PFM as envisaged in the Forest Bill 2014, is dependent on the extent to which equitable benefit sharing in forest resource management will be realized.

Social and Environmental Safeguards and SIS

As part of the implementation process and to ensure best practices, there will be an SIS housed at ZEMA which is already mandated by legislation to provide state-of-the art environmental reporting at national level and keep an environmental information registry. The REDD+ will build on this mandate by embedding the SIS into the existing environmental information system and registry at ZEMA. While ZEMA will be responsible for maintaining the SIS and reporting, the actual monitoring and collection of information on safeguards will be undertaken by an NGO which will be recruited through an open tender (Figure 4). An independent NGO shall ensure transparency in safeguards monitoring, data collection and reporting. It will report directly to ZEMA and liaise closely with the NRCU. The NGO shall also work closely with the sectorial implementation units and community-level institutions in executing its mandate. The formulation of the Social and Environmental Safeguards (SES) system for Zambia is elaborated in Section 5.4 below.

Measurement, Reporting and Verification (MRV)

The institutional arrangements for Measuring, Reporting and Verification (MRV) for REDD+ will be consistent with the Green House Gas (GHG) National Inventory System of the Government of the Republic of Zambia. This is elaborated under Section 5.6.3 of the Strategy. Figure 8 under the same Section illustrates the functional relationship of the lead institutions for the five sectors that have been agreed by the Government through the mandated GHG reporting body, the Zambia Environmental Management Agency (ZEMA). The lead institution for Land Use, Land Use Change and Forestry (LULUCF) has been designated as the Forestry Department. Under these institutional arrangements, the Forestry Department will be responsible for compiling information for LULUCF and thus will need to establish a functioning QA/QC system for LULUCF reporting. Some of this information will be compiled in house while some will be compiled from aligned departments and institutions such as the National Remote Sensing Centre (NRSC), Survey Department and the Department of Energy. The Forestry Department will be responsible for coordinating GHG inventory planning, assigning responsibility to aligned institutions. An important responsibility for the Forestry Department in this regard is to ensure adherence to Good Practice Guidance (GPG) from the IPCC on elements such as transparency, accuracy, completeness, comparability and consistency.

ZEMA will complete an independent QA/QC analysis. The LULUCF report will be consistent (as determined by the UNFCCC reporting requirements for REDD+) with REDD GHG reporting for Zambia. The LULU /REDD+ GHG report will be compiled by the Forestry Department as the NRCU and aligned institutions as demonstrated by Figure 8 under Section 5.6.3.

5.3 Potential Sources of Financing and Fund Architecture

Potential sources of financing for REDD+ activities in Zambia include domestic, private, bilateral and multilateral donors. While some of the funding from private sources and carbon markets may go directly to projects, the rest of both domestic and international financing could be blended into a National REDD+ Fund (Figure 5). This is later elaborated under Section 5.3.4 below.

5.3.1 Domestic sources

To guarantee sustainability of donor funded programmes, there is an increasing need for sourcing financial needs for REDD+ Programmes from domestic sources. Such sources in Zambia could include Government budgetary allocations, the carbon tax, and capitalized environmental funds. Another important source of finance could be through Public-Private Partnerships combining public resources with private sector resources. There are also financial resources that can be secured through the voluntary carbon market.

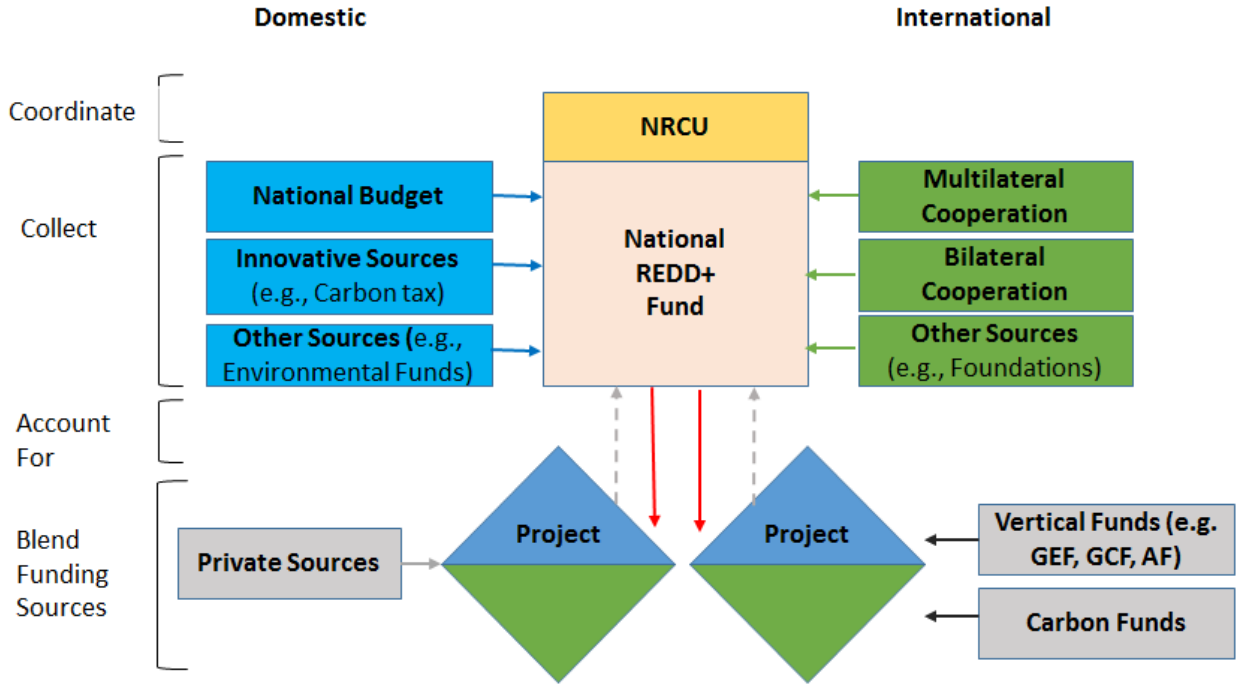

Figure 5: Potential sources of financing for REDD+ activities in Zambia

The carbon tax which is levied on all motor vehicles every year could be a significant innovative source of domestic financing for REDD+ activities (Figure 5). The Road Transport and Safety Agency (RTSA) estimated the total number of motor vehicles in Zambia in 2010 was 329,000. Light vehicles are levied ZMW 100 (US$ 17) while heavy duty vehicles are levied ZMW 200 (US$ 34) per year. Assuming a 10% increase in the total number of vehicles every year, by 2015 Zambia will have a total of 529,858 motor vehicles. At an average of ZMW 150 per vehicle as carbon tax levy, this translates into a total of ZMW 79,478,700 or US$ 13,246,450 in carbon tax revenue alone. This is quite significant for investment programming that could be used to leverage results-based payments in the country.

Among the capitalized and functional environmental funds that could be a major source of domestic financing for REDD+ activities include:

a) Environmental Protection Fund (EPF) under Mines – As at April 2012, about half the mining companies had contributed US$ 11,562,406 to the Fund (OAG, 2014). Mining Companies are not complying with the EPF's regulations in that the majority are not paying the stipulated contributions. With strict enforcement of the EPF regulations by the Mine Safety Department, this fund is capable of generating between US$ 40-75 million per year;
b) Community Fund under the Wildlife Act (1998); and
c) Civil Society Environmental Fund supported by bilateral donors locally and managed by an independent external fund manager.

The Environmental Fund established under the Environmental Management Act (2011) is not yet functional.

5.3.2 Multilateral and bilateral sources

The REDD+ financing arrangements are rooted in the principles regarding global efforts to address the challenges posed by Climate Change and international agreements on the establishment of the REDD+ as a financing mechanism to reduce emissions and global warming. Its main sources of finance are therefore through multilateral and bilateral sources as well private sector sources. Multilateral financial institutions have been allocated resources to be used for stand-alone REDD+ programmes as well as for mainstreaming such programmes in most of the sectoral programmes at the country level. At the multilateral level, some industrialized countries have prioritized REDD+ within their aid programmes first as a contribution to global efforts to reduce emissions but also, as a way to provide incentives for their private sector to invest in emission reducing projects and activities in developing countries, to gain carbon credits to meet the requirements in their countries. However each donor agency has its own rules and procedures for accessing resources by developing countries. The Issues and Options report to this strategy[28] describes in detail various funding sources at multilateral and bilateral levels. Among these include the Forest Carbon Partnership Facility (FCPF), Green Climate Fund, Adaptation Fund and BioCarbon Fund as multilateral sources (Figure 5), and the Germany International Climate Initiative, the UK International Climate Initiative, Japan Fast-Start Finance as some of the bilateral sources. At regional level, the African Development Bank (AfDB) also administers climate change funds to which Zambia is eligible such as the Africa Climate Change Fund (ACCF) and Climate Investment Funds (CIF).

5.3.3 Private sources

International private sector REDD+ financing sources include foreign direct investment (FDI), non-profit funding from large conservation NGOs and philanthropic sources as well as individuals and carbon markets (both regulated and voluntary carbon markets) (Figure 5). Among the key philanthropic sources include a number of foundations mostly interested in "impact investments". For example, MAVA Foundation, Ford Foundation, Bill & Melinda Gates Foundation, Packard Foundation, etc.

28 Matakala, P.W., M. Kokwe and J. Statz. 2014. Issues and Options Report – Towards a REDD+ Strategy for Zambia. UN-REDD Zambia Programme.

5.3.4 Fund architecture

Recently, Zambia benefited from the Green Climate Fund through the Ministry of Finance and National Planning (MoFNP) and the IMCCS is in the process of establishing a National Climate Change Fund with two funding windows- one on mitigation and the other on adaptation. After discussions with IMCCS, and as shown in Figure 5; a National REDD+ Fund is proposed that is ring-fenced as a "window" within the National Climate Change Fund to finance REDD+ activities at national level. The National REDD+ Coordination Unit (NRCU) will be responsible for REDD+ funding allocation and advise the NCPS and IMCCS accordingly on its decisions.

Since the IMCCS is still in the process of developing a financial framework for the National Climate Change Fund in which the REDD+ Fund will be a special window, the structure of the REDD+ Fund and its governance has yet to be determined along the broader framework of the national climate change financing framework. Procedures including requirements and conditions for the use of the REDD+ Fund resources will need to be prepared along the broader national climate change financing framework requirements. However, it is envisaged that an Account for the REDD+ Fund will be opened and resources received from all different sources as shown in Figure 5 will be held in that Account. Funds to support programme activities at both the national, sectoral and sub-national levels will be transferred to Special Accounts to be opened for that purpose. Guidelines and procedures will be provided on the operation of the Special Accounts.

As a special "window" within the National Climate Change Fund, the REDD+ Fund will be able to:

a) Attract and collect sources of funds and direct the funds towards REDD+ activities that promote national priorities as presented in Chapter 4;
b) Blend "finance from public, private, multilateral and bilateral sources to maximize Zambia's ability to advance REDD+ priorities;
c) Facilitate coordination of country-wide REDD+ activities to ensure that REDD+ priorities are effectively implemented; and
d) Strengthen capacities for national ownership and management of REDD+ finance, including for "direct access" to funds. This will bolster the fiduciary capacity of the IMCCS and NRCU to absorb and manage different types of finance.

5.4 Formulation of a Social and Environmental Safeguards (SES) system for Zambia

To fully respect the country's legal, institutional and compliance frameworks and in order to operationalize international safeguards at the national level, a national level safeguard system will be formulated for Zambia. This national Social and Environmental Safeguard (SES) system will be rooted in Zambia's existing legal framework (national policies, laws and regulations that define and regulate the effective implementation and compliance of the safeguards), the country's institutional framework (existing procedures for implementing and enforcing the legal framework), and an outline of the compliance framework (with a monitoring and information system; grievance and redress mechanisms; and noncompliance mechanisms).

Zambia's national REDD+ safeguard system can then serve as a cross-sectoral framework for environmental and social performance across all land-based sectors - forestry, agriculture, mining, infrastructure development and domestic energy. It will also ensure that REDD+ is in line with High Level

Forums on Aid Effectiveness (especially those in Paris and Accra) that have placed considerable emphasis on the need for countries to develop their own national, cross-sectoral safeguard systems.

It needs to be ensured that Zambia's country-level REDD+ safeguard system is developed and implemented efficiently and that duplication of efforts are avoided. Therefore, established systems, processes and procedures will be used that have been put into place to meet Zambia's international obligations and existing policy commitments.

The national REDD+ SES system for Zambia will comprise two key components:

1. a set of policies, laws and regulations through which safeguards are addressed and respected and
2. a social and environmental safeguard information system (SESIS), as a systematic approach for collecting and providing information on how REDD+ safeguards are being addressed and respected throughout REDD+ implementation.

For this, the UN-REDD Programme has developed the Country Approach to Safeguards Tool (CAST). It provides Zambian stakeholders with an interactive instrument to plan the national SES system based on existing national approaches to safeguards. The application of CAST tool will support Zambia's planning efforts to make sure that REDD+ safeguards get respected. Ultimately, the application of CAST will make REDD+ activities more responsive to the relevant UNFCCC decisions.

Typically, CAST analysis is done in five steps (Figure 6):

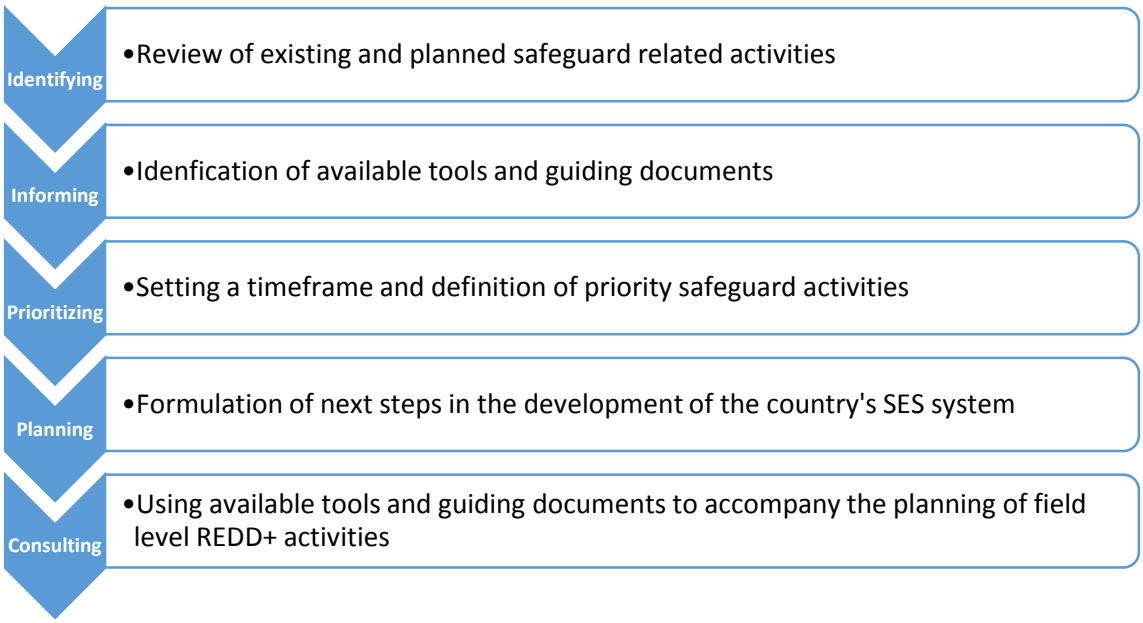

Figure 6: Steps involved in a CAST analysis

CAST is designed to cover the full scope of REDD+ safeguards and SIS in the country, rather than limiting the process to UN-REDD Programme supported activities. The CAST shall be applied as part of a multi-stakeholder exercise involving key stakeholders representing a range of institutions and sectors.

In designing REDD+ Safeguards Information System (SIS) for Zambia it will be important to ensure that it builds on existing systems and country experiences. During the readiness phase a REDD+ wiki was

developed for information sharing and for facilitating stakeholder discussions. This will form one of the SIS platforms in the implementation phase. Other platforms to build on will include:

- An independent NGO to be recruited by tender (see Section 5.2) shall be responsible for monitoring safeguards implementation at national level and reporting to ZEMA;
- ZEMA is mandated under the Environmental Management Act (Part III, section 20) to collect and publicize information on the quality of the environment including any significant adverse effects that have been caused or are likely to be caused. It is also mandated to report on all international agreements to which Zambia is a party and on their domestic implementation. This means there is already a registry existing within ZEMA on environmental information archiving and reporting upon which REDD+ shall build on for its SIS;
- In addition to ZEMA, on-ground safeguards information collection could be undertaken by the various sectors (e.g., local government, energy, forestry, agriculture, commerce and industry) through their sectorial implementation units on various REDD+ interventions respective to their sectors; the jurisdictional administrations like PDCCs, DDCCs and ADCs; and
- The SIS will also build upon ongoing baseline project experiences:

    - The Lower Zambezi REDD+ Project developed by BioCarbon Partners;
    - USAID/Zambia Support to the Zambia UN-REDD Program (2013-2018) through the CIFOR operated project in Nyimba district (Eastern Zambia) to establish protocols on MRV implementation on various land designations in the district;
    - The Finnish-funded project "Innovative Decentralized Programme on Integrated Forest and other Natural Resources Management in Zambia" with three relevant components on Local NRM and income generation; District, chiefdom and community development; and Research and development;
    - WB-funded Pilot Programme on Climate Resilience (PPCR) which seeks to promote private sector investment in climate change adaptation in a range of economic sectors (agriculture, water and energy) within the Barotse and Kafue sub-basins;
    - UNDP/GEF LDCF I Project *Adaptation to the effects of drought and climate change in Agro-ecological Regions I and II* – whose objective is to develop the adaptive capacity of subsistence farmers and rural communities to withstand climate change in Agro-ecological Regions I and II of Zambia;
    - LECB EU-UNDP Climate Change Capacity Building Programme - The objective of the Low Emission Capacity Building Project in Zambia is to develop the capacities (institutional, financial, human, research) required for articulation of a low carbon, climate resilient development pathway;
    - Etc.

Table 4 summarizes results of a preliminary (not exhaustive) assessment of matching UNFCC REDD+ safeguards to existing relevant PLR and conventions to which Zambia is a party highlighting Zambia's readiness to address the UNFCCC safeguards. Detailed analysis will be conducted in the next phase.

Table 4: Zambia's readiness to address UNFCCC safeguards (*cont…..*)

UNFCCC Safeguard	Existing Relevant PLR and Conventions/Agreements
1. Consistency with the objectives of national forest programmes and relevant international conventions and agreements	1.1 At national level: the strategic objectives on forestry in this strategy are in line with the programmes contained in the Zambia Forest Action Plan (ZFAP, 1998-2018), Zambia's overarching framework for forest management. They are also in line with the National Biodiversity Strategy and Action Plan (NBSAP, 1995); the NAPA, 2007; NCCRS, 2011; Sixth National Development Plan (2011-2015) and Decentralization Policy Implementation Plan (2009-2013). 1.2 At regional level: the strategic objectives are consistent with the African Convention on the Conservation of Nature and Natural Resources and at sub-regional level: with the SADC Protocols on Forests, Water, Wildlife, Fisheries, Agriculture, Energy and Trade. 1.3 At international level: the strategic objectives are consistent with international conventions to which Zambia is signatory: UNCBD, UNCCD, UNFCCC, CITES and Convention on Wetlands of International Importance especially as Waterfowl Habitat (RAMSAR Conventions).
2. Transparent and effective national forest governance structures	2.1 The draft Forest Policy (2010) and Forest Bill (2014), currently earmarked to be ratified within the first quarter of 2015, promulgate transparent and improved forest governance through promotion of Community Forest Management (CFM), Joint Forest Management (JFM) and Private Forest Management (PFM) with a strong involvement of traditional authorities in forest decision-making particularly on customary lands. They also promulgate creation of an equitable benefit sharing system within the forestry sector. However, while carbon is recognized as a forest product in both policy and legislation, both instruments have yet to clarify carbon rights and ownership within the context of CFM, JFM and PFM. 2.2 As part of forest and climate change governance in Zambia the government has established an Inter-Ministerial Climate Change Secretariat to coordinate all climate change actions at national level and a REDD+ Coordination Unit with the Forestry Department to oversee REDD+ implementation. 2.3 Forestry Department has established a decentralized NFMS with 10 laboratories at provincial level across the country which are manned by groups of trained cross-sectoral technicians from forestry, agriculture and planning sectors providing a decentralized hub of MRV expertise. This local expertise will provide near real-time spatial data on deforestation and forest degradation. The NFMS is linked to a web portal for easy reporting and transparency purposes. This innovative approach is in-line with the decentralization policy of the Government of Zambia. 2.4 At sub-regional level (SADC), Zambia has ratified the Protocol Against Corruption (2001) and at national level Zambia has established an Anti-Corruption Commission, an independent body to investigate corruption and prosecute offenders. 2.5 REDD+ to reinforce the roles of Provincial Development Coordinating Committees (PDCC)s, District Development Coordinating Committees (DDCCs) and Area Development Committees (ADCs) as effective implementers/coordinators of REDD+ activities at subnational level. This is in line with Zambia's Decentralization Policy. 2.6 Zambia to consider setting up an independent body to certify consultants undertaking SEAs and EIAs to safeguard against conflict of interest on the part of development proponents hiring and paying own consultants to undertake SEAs and EIAs. 2.7 Zambia to consider establishing an independent Timber Inspection Unit to monitor timber concession license compliance and timber conveyance. 2.8 Zambia to consider contracting (by open tender) an independent body to manage the Safeguards Information System to be developed and be responsible for reporting.

Table 4: Zambia's readiness to address UNFCCC safeguards (….*cont.*)

UNFCCC Safeguard	Existing Relevant PLR and Conventions/Agreements
3. Respect for the knowledge and rights of indigenous peoples and members of local communities	3.1 Both the Environmental Management Act (2011) and draft Forest Bill (2014) recognize the importance of indigenous knowledge and rights of local communities in the sustainable management of Zambia's natural resources. Important forest-based indigenous knowledge systems with wider application include: herbal medicines; wild foods; uses of timber; use of thatch grass and other grasses, i.e. bamboo, reeds and papyrus, handicrafts and cultural uses in traditional ceremonies, and respect for burial sites. The promotion of CFM, JFM and PFM in the Forest Bill is a reflection of the importance the Zambian government attaches to the knowledge and rights of local communities. 3.2 Enacted in 1989, the National Heritage Conservation Act provides for the conservation of ancient, cultural and natural heritage, relics and other objects of aesthetic, historical, pre-historical, archaeological or scientific interest. 3.3 At sub-regional level (SADC), Zambia has ratified the Protocol on Culture, Information and Sport (2001) which recognizes respect for indigenous and local community rights and cultures.
4. Full and effective participation of stakeholders especially indigenous peoples and local communities	4.1 The National REDD+ Coordination Unit (NRCU) has developed a Stakeholder Analysis and Engagement Plan (SAEP) to ensure that all relevant stakeholders including local communities are effectively involved in all phases of REDD+ development in the country. This has involved province-wide stakeholder consultation meetings and key sector stakeholder consultation workshops. The SAEP builds upon policy provisions on stakeholder participation reflected in the National Policy on Environment, the draft Climate Change Policy, the National Biodiversity Strategy and Action Plan, the draft Forest Policy and the Decentralization Policy Implementation Plan. 4.2 The CFM, JFM and PFM models promulgated in the draft Forest Policy (2010) and Forest Bill (2014) as well as the EIA provisions in the Environmental Management Act (2011) are supposed to take into account: • The social economic impact of the project, such as resettlement of affected people; • Socio-economic and cultural considerations such as effects on generation or reduction of employment in the area, social cohesion or resettlement, local economic impacts; and • Effect on land uses and land potential in the project area and surrounding areas. 4.3 Zambia to use the REDD+ process to develop specific FPIC guidelines for REDD+ project proponents, whether private or public, on how to operationalize FPIC principles in their initiatives. Zambia to use the REDD+ process to develop specific FPIC guidelines for REDD+ project proponents, whether private or public, on how to operationalize FPIC principles in their initiatives. 4.4 Building upon the experiences with the Benefit Distribution System (BDS) in the wildlife sector, Zambia to use the REDD+ process to develop a BDS that is fair and equitable to all stakeholders in order incentivize their effective participation in REDD+ activities.
5. Consistency with the conservation of natural forests and biological diversity	5.1 The strategic objectives of this Strategy are all intended to promote conservation of forests and biological diversity through reduced emissions from sectors considered as key drivers of deforestation and forest degradation: Agriculture, Energy, Forestry, Mining, Land use and Infrastructure development. 5.2 As signatory to the UNCBD, Zambia's strategic objectives are consistent with its National Biodiversity Strategy and Action Plan (NBSAP).
6. Actions to address the risks of reversals	6.1 Zambia's Environmental Management Act (2011) already provides a comprehensive set of provisions for social and environmental safeguards. This includes clauses on EIAs and SEAs, public redress mechanism and the right to sue. However, enforcement of the Act is weak. Strictly enforcing the EMA (2011) with its clauses for SEA, EIA, public consultation and redress mechanisms, will be important, also to build the required capacities amongst national players to implement the safeguard system required under REDD+.
7. Actions to reduce displacement of emissions	7.1 Zambia to promote non-carbon benefits as short-term incentives to reduce displacement of emissions 7.2 Zambia to develop benefit sharing guidelines under REDD+

5.5 Setting up Forest Reference Emission Levels (FRELs)/Forest Reference Levels (FRLs)

Zambia is still in the process of completing the ILUA II forest inventory and has yet to generate activity data on deforestation and forest degradation as well as complete the land cover mapping. Hence, it is not possible at this point to set up the FRELs/FRLs. However, development of Forest Reference Emission Levels or Forest Reference Levels (FRELs/FRLs) in Zambia will be guided by the following principles:

1. Constructed to meet both national and international objectives;
2. Consistent with the national GHG inventory;
3. Consistent with UNFCCC guidance;
4. Consistent with the National Forest Monitoring System (NFMS);
5. Consistent with the national REDD+ strategy;
6. Take a stepwise approach, allowing improvements over time; and
7. Enable subnational activities and programmes.

5.5.1 Meeting national and international objectives

FRELs/FRLs will be developed such that they are useful for domestic purposes, for example to measure the impact of policies and measures taken. In addition, Zambia intends to voluntarily submit a FREL/FRL to the UNFCCC, as a benchmark for assessing its performance in implementing REDD+ activities, thereby contributing to global mitigation efforts. It also may construct such reference levels to access climate finance.

5.5.2 Consistency with the national GHG inventory

Data used to construct the FREL will be consistent with national GHG inventory data submitted to the UNFCCC through Zambia's National Communications and Biennial Update Reports, to the extent possible. Where there are any differences these must be justified.

5.5.3 Consistent with UNFCCC guidance

FREL/FRLs will be based on UNFCCC guidance provided through Decisions of the Conference of the Parties29. This includes the following:

1. Expressed in tons of carbon dioxide equivalent per year;
2. Based on historical data, but may be adjusted for national circumstances;
3. Use transparent, complete, consistent and accurate information;
4. Include significant activities and pools; and
5. Use a forest definition consistent with that used in the national GHG inventory and reporting to other international organizations.

5.5.4 Consistency with National Forest Monitoring Systems

FREL/FRLs will use information from the Forestry Department's land use/land cover (LULC) assessment as a basis for the activity data needed to build FREL/FRLs (Figure 2). Measurement of forest to non-forest (deforestation) and non-forest to forests (afforestation or reforestation) will therefore be spatially

29 Relevant decisions include 4/CP.15, 12/CP.17, and 13/CP.19.

explicit. Estimations of degradation (and/or enhancement in forests remaining forests) will require further exploration, data and methods to estimate such emissions/removals.

Data for Zambia's National Forest Inventory is collected through the Integrated Land Use Assessment (ILUA) Project**.** ILUA provides useful statistical estimates of volume and biomass for major forest types (and associated pools) and other land uses at the provincial level across variations in forest canopy cover caused by disturbances, degradation, and ecological conditions. Information from ILUA can therefore provide Tier 2 and 3 emission factors for forest lands and can be used in Zambia's development of FREL/FRLs (Figure 7).

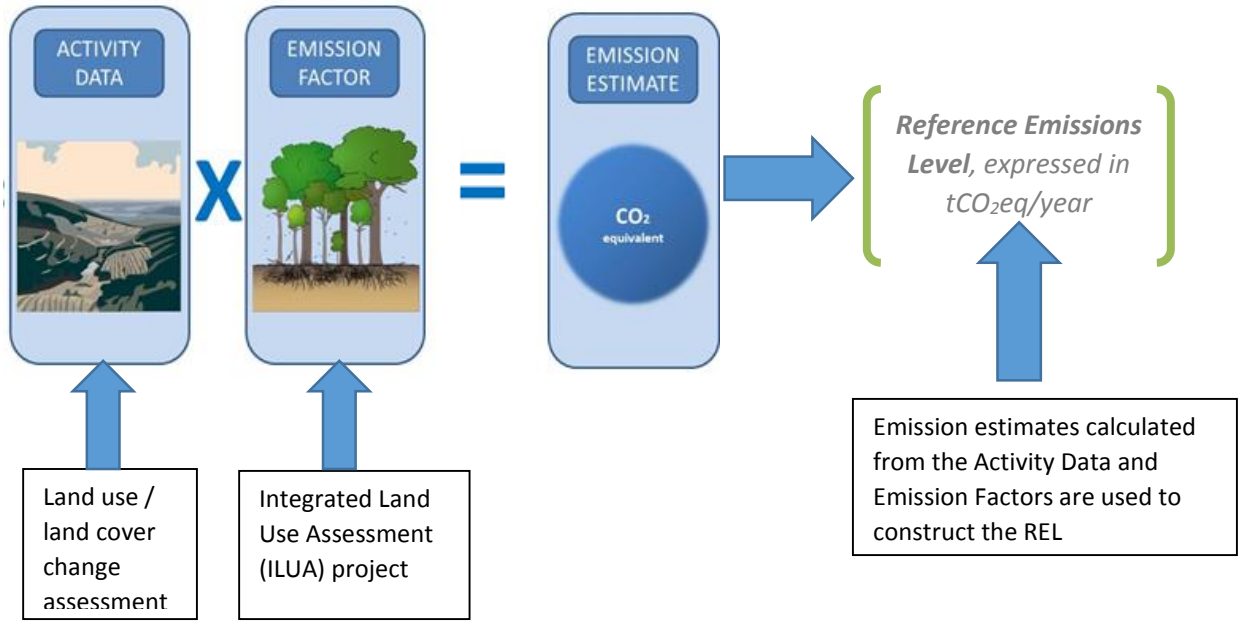

Figure 7: Building blocks for a Forest Reference Emissions Level

5.5.5 Consistent with the national REDD+ strategy

FREL/FRLs will be constructed to measure the performance and implementation of the national REDD+ strategy. In other words, there will be a linkage between the activities chosen for inclusion in FREL/FRLs and those planned for implementation within this strategy document, to the extent there is sufficiently complete and accurate data to include such activities into FREL/FRLs.

5.5.6 Taking a stepwise approach

Zambia intends to take a stepwise approach to the development of FREL/FRLs that allows for continual improvement, while using the best available data at the time of construction of each FREL/FRL. This principle recognizes that Zambia is likely to improve data and methods for estimating emissions and removals from forest-related activities over time and may therefore add additional activities and pools, or improve on its methodologies to predict future emissions.

For example, Zambia's preliminary or first FREL may include deforestation only; use a single conservative emission factor and a historical average. However, as data and methods improve, deforestation data may change, degradation may be included, emission factors may be further stratified by forest type of canopy

cover, or a change from a historical average to a projected or modelled FREL/FRL approach may be considered.

5.5.7 Enable subnational activities and programmes

Zambia may begin implementing activities at a subnational level, and for this reason will allow for the construction of subnational FREL/FRLs as an interim measure. Such subnational FREL/FRLs, however, will be subject to national guidance on the use of data, methods, their construction and provision of information in order to ensure transparency, consistency and compatibility with national level approaches. Such guidance will be determined by the Government of Zambia.

5.5.8 Institutional arrangements

The following institutions will be responsible for the construction of the national FREL:

1. The Forestry Department will provide all data used in the construction of the FREL (e.g. activity data and emission factors); and
2. The Forestry Department in collaboration with the National REDD+ Coordination Unit (NRCU) will be responsible for the construction of the FREL and its improvement over time.

At sub national level, the following institutions shall be responsible for the construction of the FREL:

1. The Forestry Department shall provide oversight to ensure that all constructions of FRELs at subnational level are consistent with national guidelines;
2. The Forestry Department will be responsible for the construction of the FREL on behalf of local communities as a special consideration;
3. All FRELs developed by third parties will have to be reviewed and approved by the Forestry Department in collaboration with the National REDD+ Coordination Unit.

5.6 National Forest Monitoring Systems (NFMS)

Under decisions from the UNFCCC on modalities for REDD+, countries are requested to develop robust and transparent National Forest Monitoring Systems (NFMS) using a combination of remote sensing and ground-based forest carbon inventory (decisions 1/CP.16, para 71(c)). Decision 4/CP.15 elaborates that the NFMS should be guided by the IPCC and provide transparent and consistent Measurement, Reporting and Verification of anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks for REDD+ activities.

5.6.1 Zambia's National Forest Monitoring System

Zambia's work on NFMS for REDD+ has focused on the development of a decentralized NFMS. This has required extensive in-country capacity building and infrastructure development. Ten provincial forest monitoring laboratories have been established and equipped with tools for forest monitoring. These provincial laboratories are operated by a group of trained cross-sectoral technicians from forestry, agriculture and planning sectors providing a decentralized hub of MRV expertise. The laboratories will provide near real-time spatial data on deforestation and forest degradation which can be relayed to the central national forest monitoring laboratory (through the NFMS web portal) to inform national reporting. All bi-annual Activity Data will be displayed on the portal which will also integrate previously disparate spatial information on tenure, infrastructure, and the environment. The NFMS web portal also integrates the latest results from the Zambian Integrated Land Use Assessment and a REDD+ wiki which can be used for stakeholder discussion.

5.6.2 Zambia National Forest Inventory (ILUA II)

The development of the NFMS in Zambia is closely aligned with the Zambian National Forest Inventory (NFI), the Integrated Land Use Assessment phase II (ILUA II). ILUA II is implemented through the country's Forestry Department, with technical assistance provided by FAO and financial assistance from the Government of Finland. With over 4 000 sampling sites across Zambia, ILUA II is assessing forests and integrated land-use practices in order to provide new qualitative and quantitative information on the state, use, management and trends of these resources. ILUA II will provide technically sound information on the physical characteristics of forests, as well as the socio-economic conditions of forest communities living in and around these forests. With technical support from FAO, the information collected in ILUA II will satisfy local, national, regional and international reporting requirements, and will facilitate improved decision making at all levels.

The UN-REDD and ILUA II programmes are technically synchronized so ILUA II feeds into the national MRV system. For example, ILUA II is measuring carbon pools as identified by the Intergovernmental Panel on Climate Change (IPCC) such as aboveground biomass, coarse woody debris, fine litter, and soil organic carbon. Information on these carbon pools for different forest types subject to different degrees of deforestation, degradation and different land uses will be a crucial input into Zambia's carbon stock calculations and the construction of Emission Factors for MRV reporting.

5.6.3 Institutional arrangement for MRV and GHG reporting

The institutional arrangement for Measurement Reporting and Verification (MRV) for REDD+ will be consistent with the agreed Green House Gas (GHG) National Inventory System of the Government of the Republic of Zambia (GRZ). Figure 8 shows the institutional arrangement for GHG Inventory in Zambia.

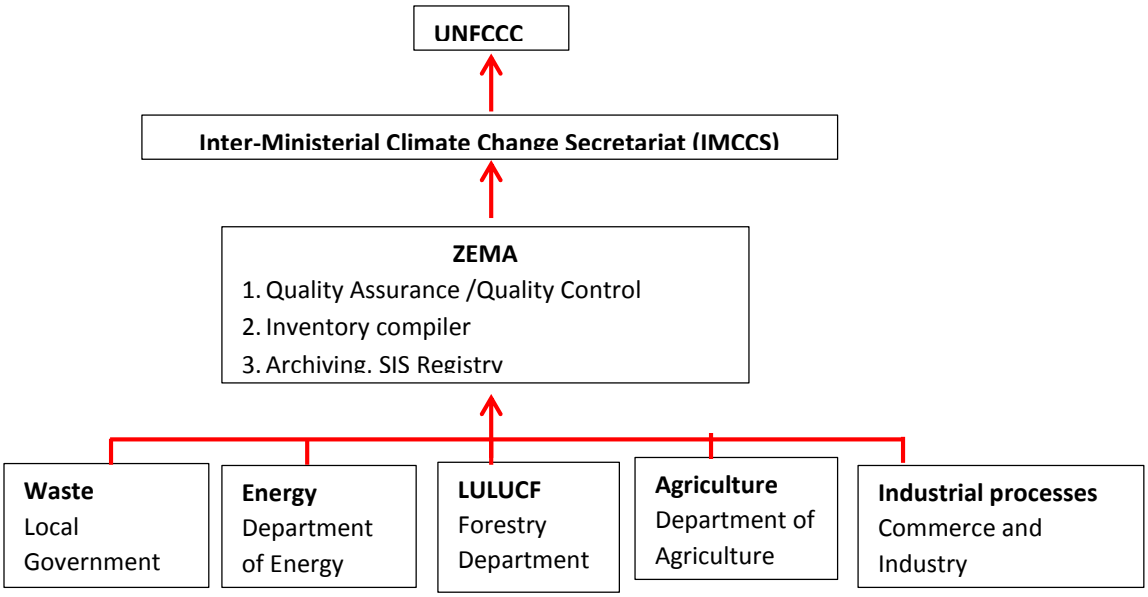

Figure 8: Institutional arrangement for GHG Inventory in Zambia

As noted above, lead institutions for the five sectors have been agreed by the GRZ through the mandated GHG reporting body, the Zambia Environmental Management Agency (ZEMA). The lead institution for Land Use, Land Use Change and Forestry (LULUCF) has been designated as the Forestry Department (FD), of the Ministry of Lands, Natural Resources and Environmental Protection (MLNREP). Under this structure, FD will be responsible for compiling information for LULUCF and thus will need to establish a functioning QA/QC system for LULUCF reporting. Some of this information will be compiled in-house and other information will need to be compiled from aligned departments and institutions such as the National Remote Sensing Centre (NRSC), Survey Department, and the Department of Energy. FD will be responsible for coordinating GHG inventory planning, assigning responsibility to aligned institutions for contributing source data, and compilation of a LULUCF GHG report. An important responsibility for FD is to ensure adherence to Good Practice Guidance (GPG) from the IPCC on elements such as transparency, accuracy, completeness, comparability and consistency.

ZEMA will complete an independent QA/QC analysis. The LULUCF report will be consistent (as determined by the UNFCCC reporting requirements for REDD+) with REDD+ GHG reporting for Zambia. The LULUCF/REDD+ GHG report will be compiled by FD and aligned institutes as shown in Figure 9 below.

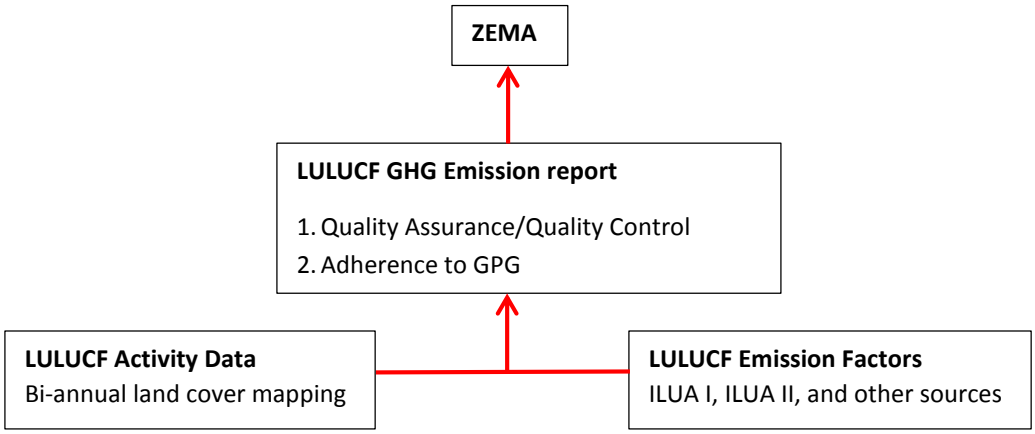

Figure 9: Compilation of the LULUCF/REDD+ GHG report

As shown above important sources of information for LULUCF Activity Data is the ongoing land cover mapping exercise that is a collaborative undertaking among UN-REDD, the Regional Centre for Mapping Resources for Development (RCMRD), FD, NRSC, and the Survey Department. The remote sensing capacity built as part of this collaboration will be used in the future for bi-annual land cover mapping that will provide Activity Data updates every two years. The current National Forest Inventory (NFI), Integrated Land Use Assessment Phase II (ILUA II), and the previous NFI, ILUA I, are important sources of LULUCF Emission Factors. Information on some Emission Factors is also in other government departments. For example, information on fuelwood use (including charcoal use) is routinely collected by the Department of Energy. Other Emission Factors can be derived from Zambian research institutions such as Zambia Agriculture Research Institute (ZARI), Copperbelt University (CBU) and the University of Zambia (UNZA).

CHAPTER 6: NEXT STEPS

This strategy highlights key strategic objectives and interventions that need to be implemented in order to achieve the triple function of REDD+, i.e.: mitigation; adaptation to climate change impacts; and national development goals. Along this path are urgent issues that Zambia needs to address in relation to REDD+ governance, implementation and tracking. In order to transit to the next phase. First, the NRCU needs to seek political commitment to ensure that the policy and legislative environment as well as proposed institutional arrangements are conducive by:

a) NRCU lobbying governmental reform and efforts toward fast ratification of three key bills: Forest Bill, Customary Land Bill, Urban and Regional Planning Bill – all of which are critical to the successful achievement of the objectives and strategic interventions of this strategy;

b) NRCU lobbying for the application of the Carbon Tax to REDD+ and sustainable environmental management

c) NRCU lobbying for new structures/bodies (e.g., independent timber inspectorate unit) and roles of PDCCS, DDCCs, ADCs and Traditional Authorities in REDD+ implementation and clarify NRCU linkages/relationships with the IMCCS – all to assure transparency and accountability;

d) NRCU lobbying for and raising awareness on key issues such as SFM, PAs, local empowerment and decentralization, financial incentives and BDS and FPIC to ensure political will is strengthened; and secondly

At a practical level:

e) Define and assign specific tasks to various institutions/government entities (key stakeholders) to facilitate the coordination/implementation of REDD+;

f) Ensure adequate funding and financial incentives (multilateral and bilateral funding, government subsidies, tax incentives, e.g., for green technologies and obtaining energy from renewable sources)

g) Develop guidelines on FPIC benefit sharing from the beginning to avoid ambiguities and promote transparency and accountability;

h) Develop relevant REDD+ systems: MRV, SIS, SES;

i) Capacity building – gradually develop institutional and stakeholder capacities to implement and monitor REDD+; and

j) Define environmental criteria and tasks (e.g., farmers should use degraded lands to establish wood fuel plantations, mining companies are responsible for re-vegetation of earmarked restoration sites); enforce these tasks and link non-compliance to punitive measures.

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