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## CROSS RIVER STATE

## REDD+ STRATEGY

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November 2017

## EXECUTIVE SUMMARY

Deforestation and forest degradation account for approximately 17% of global carbon emissions, more than the entire global transportation sector and second only to the energy sector. Stabilizing global average temperatures within two degrees Celsius to constrain the impacts of climate change within limits that society will reasonably be able to tolerate requires reducing emissions from the forest sector, in addition to other mitigation actions. Parties to the United Nations Framework Convention on Climate Change (UNFCCC) have responded by developing a mechanism on Reducing Emissions from Deforestation and forest Degradation (REDD+) includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks. It creates a financial value for the carbon stored in forests by offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. A National REDD+ Strategy is part of the requirements in order to operationalize REDD+ mechanism.

Nigeria's deforestation rate, estimated at 3.7%, is one of the highest in the world. Land-use change and forestry sector is a high net source of GHG emissions in Nigeria, accounting for 40% of the country's total GHG emissions in the year 2000, mainly due to losses of forest and other woody biomass stocks especially as a result of agricultural extensification (subsistence and commercial), logging and timber extraction, wood fuels consumption, infrastructure development, bush burning, mining/quarrying, oil spillage, rapid urbanization, droughts, and soil erosion.

Nigeria is increasingly aware of the issue of deforestation and forest degradation – and the overall degradation of the natural ecological and forest resource base – and how it impacts the nation's economic development. As part of efforts to address the deforestation and forest degradation challenge, and following extensive stakeholder consultation, Nigeria formally requested membership of the UN-REDD Programme at the end of 2009. By September 2012 a full national programme support from the United Nations through the Food and Agriculture Organisation (FAO), United Nations Environment Programme (UNEP), and United Nations Development Programme (UNDP) amounting to US\$4 million was granted to the country to support the REDD+ readiness efforts.

The goal of REDD+ readiness in Nigeria is to enable Nigeria to contribute to climate change mitigation through improved forest conservation and enhancing sustainable community livelihoods. Nigeria's Federal Ministry of Environment put this programme in place and selected Cross River State as a pilot State because the State has more than 50% of Nigeria's remaining forests, demonstrated political willingness and boasts of success stories in community based forestry as example of good practice in forest governance. This dual REDD+ approach of advancing REDD+ in a selected state that will serve as model for the rest of the states, while federal government provides the policy and institutional framing should provide lessons for other countries – especially those with large surfaces or complex REDD+ challenges.

Like the rest of Nigeria, CRS also has a relatively high level of deforestation and forest degradation. Although the CRS government responded by declaring a moratorium on timber extraction in 2008 and still in force, the rate of forest loss has more than doubled since then owing to the inability to address other key drivers and poor enforcement of the moratorium. To help address the deforestation and forest

degradation challenge, and find alternatives to logging and identify management options to reduce forest loss, the Governor of CRS launched REDD+ to explore the potential of climate change finance mechanisms to further protect the forests, with a priority focus on enhancing the livelihoods of forest-dependent communities and rural dwellers.

Therefore, as part of REDD+ readiness, CRS is submitting this strategy following the submission of Nigeria's Nationally Determined Contribution (NDC), which commits Nigeria to 20 per cent unconditional and 45 per cent conditional Greenhouse Gases (GHGs) emission reduction post 2020. The REDD+ sectors in this Strategy include agriculture and energy and it is determined that Nigeria REDD+ Strategy will contribute to Nigeria's overall contribution as the NDC states the importance of climate smart agriculture, halting deforestation and degradation and energy efficiency. As a pilot, Cross River State's REDD+ Strategy is intended to inform the national strategy and serve as a model for other states – a platform for learning and structural planning for REDD+ readiness and implementation in other parts of Nigeria.

The REDD+ process strengthened institutions and processes that enabled robust stakeholder participation and technical input towards developing this strategy. To align the strategy to issues and options relevant for addressing drivers in CRS, strategy is further informed by a number of studies developed through iterations and consultations with groups and individuals as well as literature reviews and desk work undertaken at various junctures between 2013-2015 to understand the context of REDD+ in Nigeria and CRS, analysis of drivers, appreciation of governance systems and issues, work on safeguards and multiple benefits. Finally, the Federal Ministry of Environment (FMEEnv)/Cross River State REDD+ Unit and UNDP, commissioned further analytic and consultative work in 2015-2016 under the theme – *“Development of the Integrated Analyses for a REDD+ Strategy in Nigeria with a Focus on Cross River State”* These included:

- a) Finance, Incentives and Benefit Sharing;
- b) Natural Resource Management and Sustainable Forest Management;
- c) Assessment of Policy, Legal and Regulatory (PLR) Enabling Environment;
- d) Cost Benefit Analysis of REDD+ Strategy Options;
- e) Private Sector Engagement and Roles; and
- f) Knowledge Management and Products.

Forests are central to the achievement of a low carbon and green economy. The CRS REDD+ strategy aims at assisting the State to reduce emissions in an effective, efficient, transparent and accountable way, and anchored on fairness, inclusiveness and sustainability. It presents the vision, mission, goals, guiding principles and scope for implementing REDD+ in CRS.

Specifically, the short-term goal (2017-2019) includes the strategic improvement of institutions and governance systems, as well as of spatial plans and the investment environment, in order to fulfill Cross River State's commitment to reduce greenhouse gas emissions while maintaining economic growth. Then, the medium-term goal (2017-2025) focuses on the implementation of governance systems in line with policies, measures and procedures developed by relevant institutions of CRS, and their application to the spatial and financial mechanisms developed and established in the previous phase, to achieve the targeted 20 percent reduction in emissions by 2025. Finally, the long-term goal (2017-2030) will ensure

that Cross River State's forests and land areas become a net carbon sink by 2030 as a result of the implementation of appropriate policies and measures for sustaining economic and ecosystem service functions of forests and contribution to Nigeria's Nationally Determined Contribution (NDC) to climate change mitigation and adaptation.

To achieve these goals, the Strategy focuses the Scope of REDD+ programme in Cross River State on all REDD+ activities including decreasing emissions from forest degradation; and preserving and accumulating carbon stocks through forest conservation, sustainable management of forests, and restoration of degraded forest areas.

The Strategy identifies four strategic objectives with corresponding strategic interventions to achieve each of the four objectives. The four strategic objectives are on:

- 1) Emission Reductions from subsistence, small scale and commercial agriculture;
- 2) Reducing emissions and forest loss from National Parks, Forest Reserves and Community Forestry;
- 3) Reducing emissions and deforestation from energy supply systems, especially wood fuel based energy systems by 20% by 2030; and
- 4) Preventing clearance of High Carbon Stock and High Conservation Value Forests in mining, quarrying and infrastructure development programmes.

To address the major drivers and achieve the strategic objectives, the strategy proposed several intricately linked strategic interventions including promoting Climate Smart Agriculture (CSA), enabling efficient use of land through integrated land use planning and management especially with regards to commercial agriculture and large scale farming for cash crops, providing incentives or ecosystem service payments to enable farmers (both commercial and small scale) to maintain forested lands, improving management of protected areas, and encouraging efficient and sustainable wood fuel production and consumption technologies.

The implementation approach for the REDD+ activities in CRS 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 (as promulgated under Nationally Determined Contribution of Nigeria - NDC) and CRS development goals currently being articulated under the State's draft 30-Year Growth and Development Strategy. The CRS Strategy will form the basis of the development of proposals, investment plans and implementation plans going forward in order to define what output, activities and budgets are required for specific outcomes. In terms of scale, appropriate REDD+ activities shall be implemented across all agro-ecological zones of CRS – Rainforest, Montane forest, Savannah and Mangrove/swamp and will encompass the full scope of REDD+ as listed in this Strategy.

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## LIST OF ACRONYMS AND ABBREVIATIONS

ACCF	Africa Climate Change Fund
AD	Activity Data
ADF	African Development Fund
AEZ	Agro-Ecological Zones
AF	Agroforestry
AFB	Adaptation Fund Board
AfDB-G	Africa Development Bank Group
APP	Agricultural Promotion Policy
AMV	African Mining Vision
ANR	Assisted Natural Regeneration
BAU	Business as Usual
BDCP	Bio-resources Development and Conservation Programme
BDS	Benefit Distribution System
CA	Conservation Agriculture
CBFM	Community Based Forest Management
CBMM	Community Based Mangrove Management
CBNRM	Community Based Natural Resource Management
CBO	Community Based Organization
CBR+	Community Based REDD+
CEAFM	Community Based Ecosystems Approach to Fisheries Management
CERED	Centre for Environmental Research, Education and Development
CF	Community Forest
CFM	Community Forest Management
CI	Conservation International
CIFOR	Centre for International Forestry Research
CO <sub>2</sub>	Carbon Dioxide
COP	Conference of the Parties
CPPP	Community Public Private Partnership
CRS	Cross River State

CRNP	Cross River National Park
CRSFC	Cross River State Forestry Commission
CSA	Climate Smart Agriculture
CSO	Civil Society Organization
CSPO	Certified Sustainable Palm Oil
DB	Doing Business
DRR	Disaster Risk Reduction
EBID	ECOWAS Bank for Investment and Development
EC	The European Commission
EF	Emission Factor
EIA	Environmental Impact Assessment
EPRF	Environmental Protection Rehabilitation Fund
ERDF	ECOWAS Regional Development Fund
ERIB	ECOWAS Regional Investment Bank
ESA	Environment and Social Assessment
ESMF	Environmental and Social Management Framework
ETF	Ecological Trust Fund
EU	European Union
EWS	Early Warning Systems
FAO	Food and Agriculture Organization of the United Nations
FRA	Forest Resource Assessment
FCPF	Forest Carbon Partnership Facility
FD	Forestry Department
FDI	Foreign Direct Investment
FGN	Federal Government of Nigeria
FI	Forest Inventory
FIP	Forest Investment Programme
FLR	Forested Landscape Restoration
FMA	Federal Ministry of Agriculture
FMC	Forest Management Committee
FMEEnv	Federal Ministry of Environment
FPIC	Free, Prior and Informed Consent



FR	Forest Reserve
FRL	Forest Reference Level
FREL	Forest Reference Emission Level
FRN	Federal Republic of Nigeria
FSC	Forest Stewardship Council
FTF	Forestry Trust Fund
GCCA	Global Climate Change Alliance
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GFI	Global Forest Initiative
GGWSAP	Great Green Wall for the Sahara and Sahel Initiative National Strategic Action Plan
GHG	Green House Gas
GIS	Geographical Information System
GNI	Gross National Income
GPG	Good Practice Guidance
GR	Game Reserve
GRM	Grievance Redress Mechanism
GVA	Gross Value Added
HCV	High Conservation Value
HCVF	High Conservation Value Forest
HFC	Healing Forest Conservancy
I & O	Issues and Options
INDC	Intended Nationally Determined Contribution
ICS	Improved Cooking Stove
IFAD	International Fund for Agricultural Development
IFCI	International Forest Carbon Initiative
IFI	International Financing Institution
ILO	International Labour Organization
INDC	Intended Nationally Determined Contribution
INDPA	Indonesia National Development Planning Agency
IPCC	Inter-governmental Panel on Climate Change

IUCN	International Union for the Conservation of Nature
JFM	Joint Forest Management
Km/s	Kilometre/s
LGA	Local Government Areas
LPG	Liquefied Petroleum Gas
LUA	Land Use Act
LULUCF	Land Use, Land Use Change and Forestry
MCCF	Ministry of Climate Change and Forestry (CRS)
MEnv	Ministry of Environment (CRS)
MDA	Ministry, Department, Agency
MLNREP	Ministry of Lands, Natural Resources and Environmental Protection
MRV	Measurement, Reporting and Verification
NBSAP	National Biodiversity Strategy and Action Plan
NACC	Nigerian Alliance for Clean Cookstoves
NAPA	National Adaptation Programme of Action on Climate Change
NCCP	National Climate Change Policy
NDC	Nationally Determined Contribution
NF	National Forest
NFDP	National Forest Development Programme
NFF	National Forest Fund
NFI	National Forest Inventory
NFMS	National Forest Monitoring System
NFP	National Forest Programme
NGO	Non-Governmental Organization
NP	National Park
NPD	National Programme Document: Nigeria's REDD+ Readiness Programme 2012-2014
NASRDA	National Space Research and Development Agency
NSWG	National Safeguards Working Group
NTC	National Technical Committee
NTF	Nigeria Trust Fund
NTFP	Non-Timber Forest Product
NWFP	Non-Wood Forest Product

OA	Open Area
ODA	Overseas Development Assistance
PA	Protected Area
PAMs	Policies and Measures
P&C	Principles and Criteria
PES	Payment for Ecosystem Services
PFM	Participatory Forest Management
PGA	Participatory Governance Assessment
PLR	Policy, Legal and Regulatory
PPCR	Pilot Programme for Climate Resilience
PPP	Public Private Partnership
PPPF	Public Private Partnership Fund
RCU	REDD+ Coordination Unit
REDD+	Reducing Emissions from Deforestation and Forest Degradation, and the Conservation of Forest Carbon Stocks, Sustainable Management of Forests, and Enhancement of Forest Carbon Stocks
REL	Reference Emission Level
RL	Reference Level
R-PP	Readiness Preparation Proposal
SEA	Strategic Environmental Assessment
SES	Social and Environmental Safeguards
SESA	Strategic Environmental and Social Assessment
SGP	Small Grants Programme
SIS	Safeguard Information Systems
SMF	Sustainable Management of Forests
SNR	Strict Nature Reserve
SO	Strategic Objective
SREP	Scaling Up Renewable Energy Programme in Low Income Countries
SMF	Sustainable Management of Forests
TOR	Terms of Reference
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme

UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VER	Verified Emission Reduction
WB	World Bank
WG	Working Group
WRI	World Resources Institute
WS	Wildlife Sanctuary
WWF	World Wide Fund for Nature

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# CHAPTER 1: INTRODUCTION

## 1.1 What is REDD+?

Deforestation and forest degradation account for approximately 17 per cent of carbon emissions, more than the entire global transportation sector and second only to the energy sector. In order to constrain the impacts of climate change within limits that society will reasonably be able to tolerate, global average temperatures must be stabilized within two degrees Celsius. This will be practically impossible to achieve without reducing emissions from the forest sector, in addition to other mitigation actions.

Reducing emissions from deforestation and forest degradation (REDD+) is a mechanism developed by Parties to the United Nations Framework Convention on Climate Change (UNFCCC). It creates a financial value for the carbon stored in forests by offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. Developing countries would receive results-based payments for results-based actions. REDD+ goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks. The REDD+ process follows a rule book set by the UNFCCC and cited in a number of Decisions including Decision 2/CP.13, Decision 1/CP.16 (paragraphs 68-79) – the Warsaw Framework, and most recently Article 5 in the Paris Agreement. A National REDD+ Strategy is part of the requirements in order to operationalize REDD+ mechanism.

## 1.2 Why REDD+ in Nigeria?

Nigeria's forests, extending over 6,993,000 hectares (7.7% of total land area), have been rapidly declining over the past few decades primarily due to agricultural extensification (subsistence and commercial) logging and timber extraction (mostly unregulated wood fuels consumption and infrastructure development (UN-REDD, 2015). Aikhionbare (2015) has also cited additional causes of deforestation in Nigeria: bush burning; oil spillage leading to loss of 10% of the mangrove forests in the Niger Delta; rapid urbanization (indirect cause); droughts and soil erosion. The current national deforestation rate, estimated at 3.7%, is one of the highest in the world. Nigeria's most recent National Communication<sup>1</sup> notes that the land-use change and forestry sector is a high net source of GHG emissions in Nigeria, accounting for 40% of the country's total GHG emissions in the year 2000, mainly due to losses of forest and other woody biomass stocks.

Nigeria is increasingly aware of the issue of deforestation and forest degradation – and the overall degradation of the natural ecological and forest resource base – and how it impacts the livelihoods and economic development in the mid and long terms. An ambitious nationwide presidential initiative on afforestation/reforestation, with the use of indigenous tree species and the involvement of rural communities, was launched in 2009 to simultaneously regain forest cover and improve community livelihoods across the country (FRN, 2011).

Cross River State (CRS), located in south-east part of the Country has more than 50% of Nigeria's remaining tropical high forests (See Figure 1). However, with a relatively high level of deforestation and forest degradation, a two-year moratorium on timber extraction was declared in 2008, which is now

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<sup>1</sup> <http://unfccc.int/resource/docs/natc/nganc2.pdf>

extended indefinitely. To address the deforestation and forest degradation challenge, and find alternatives to logging and forest degradation, the Governor of CRS launched REDD+ to explore the potential of climate change finance mechanisms to further protect the forests, with a priority focus on enhancing the livelihoods of forest-dependent communities and rural dwellers (NPD, 2011). The state-level leadership in addressing deforestation and forest degradation has triggered and sustained the interest and active engagement of Nigeria in REDD+, from Cross River State up to the Federal Government, and then increasingly to other states.



**Data sources:**

Tree cover: Hansen, M. C., P. V. Potapov, R. Moore, M. Hancher, S. A. Turubanova, A. Tyukavina, D. Thau, S. V. Stehman, S. J. Goetz, T. R. Loveland, A. Kommareddy, A. Egorov, L. Chini, C. O. Justice, and J. R. G. Townshend, 2013. "High-Resolution Global Maps of 21st-Century Forest Cover Change." *Science* 342 (15 November): 850–53. Data available online from: <http://earthenginepartners.appspot.com/science-2013-global-forest>.

**Figure 1:** Territorial map of Nigeria showing location of Cross River State and tree cover nationally in 2000 (UN-REDD, 2017)

### 1.3 The evolution of REDD+ In Nigeria

In 2009, Nigeria and CRS requested support of the UN-REDD Programme<sup>2</sup> to develop and advance REDD+ in the country. The UN-REDD Programme provided intensive policy, technical and planning support from 2010-2012, which resulted in a national programme document (NPD) for REDD+ which drew from the *Nigeria REDD+ Readiness Preparation Proposal*) and had the following outcomes;

1. Improved institutional and technical capacity at the national level
2. Institutional & technical capacity for REDD+ in Cross River State strengthened
3. REDD+ readiness activities on-going in Cross River State

The NPD was the result of extensive stakeholder consultations, technical analyses, UN advisory missions and field surveys, and was approved by the UN-REDD Policy Board – after due international reviews – in 2012, with a financial allocation of US\$ 4 million for the period 2012-2015<sup>3</sup>. It was envisaged that the Nigeria REDD+ Readiness Programme would follow a two-track approach to achieve REDD+ readiness in Nigeria, based on: (i) the development of institutional and technical capacities at Federal level, and (ii) carrying out intense institutional, strategy-building and demonstration activities in Cross River State.


Being a vast country with a federal structure and complex challenges to address deforestation. Nigeria also submitted in 2009 a request for membership to the FCPF, in order to broaden the international partnership and support for REDD+ Nigeria as well as consolidate federal-level REDD+ readiness and to expand the lessons from Cross River State to other interested states in the federation. Over time and with additional funds, the expectation is that at least two more states will join a full-fledged REDD+ readiness process in 2017.

This document is the Cross River State REDD+ Strategy. CRS is submitting this strategy following the submission of Nigeria's Intended Nationally Determined Contribution (INDC) to the UNFCCC in 2015<sup>4</sup>. The INDC commits Nigeria to 20 per cent unconditional and 45 per cent conditional Greenhouse Gases (GHGs) emission reduction post 2020 – a fair and meaningful contribution to address climate change (Republic of Nigeria, 2015). Nigeria followed up with a Nationally Determined Contribution (NDC) submitted in 2017 reiterating these mitigation objectives. Under a business-as-usual growth scenario, consistent with strong economic growth of 5% per year, Nigeria's emissions are expected to grow to around 900 million tonnes per year in 2030, which translates to around 3.4 tonnes per person. The national mitigation measures described are economic wide energy efficiency, efficient gas power stations, ending gas flares, climate smart agriculture and renewable energy. The REDD+ sectors in this Strategy include agriculture and energy and it is determined that Nigeria REDD+ Strategy will contribute to Nigeria's overall contribution as the NDC states the importance of climate smart agriculture, halting deforestation and degradation and energy efficiency.

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<sup>2</sup> <http://www.un-redd.org/>

<sup>3</sup> In the last quarter of 2014, the Programme Steering Committee (PSC) approved a no-cost extension, from the original end date of February 28, 2015 to December 31, 2016

<sup>4</sup> According to Article 4 paragraph 2 of the  Paris Agreement, each Party shall prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions. Nigeria's NDC can be downloaded here

[http://www4.unfccc.int/ndcregistry/PublishedDocuments/Nigeria%20First/Approved%20Nigeria's%20INDC\\_271115.pdf](http://www4.unfccc.int/ndcregistry/PublishedDocuments/Nigeria%20First/Approved%20Nigeria's%20INDC_271115.pdf)



As a pilot, Cross River State's REDD+ Strategy is intended to inform the national strategy and serve as a model for other states – a platform for learning and structural planning for REDD+ preparedness and implementation in other parts of Nigeria. Two other states are already planning for REDD+ preparedness and implementation with the Forest Carbon Partnership Facility's (FCPF) support. These include Ondo and Nasarawa States.

With funding from the UN-REDD National Programme, a Cross River State-based structure for implementation of REDD+ was put in place, the CRS REDD+ Unit, and a number of studies developed through consultations with groups and individuals as well as literature reviews and desk work were undertaken at various junctures between 2103-2015 including:

- a) A preliminary assessment of the context of REDD+ in Nigeria and Cross River State;
- b) Study on the drivers of deforestation and forest degradation in Cross River State;
- c) Draft Participatory Governance Assessment for REDD+ and Natural Resource Management in Nigeria;
- d) Risk-Benefit Analysis of REDD+ related Policies and Measures in Cross River State; and
- e) Using spatial analysis to explore multiple benefits from REDD+ in Cross River State, Nigeria.

The Federal Ministry of Environment (FMEnv)/Cross River State REDD+ Unit and UNDP, commissioned further analytic and consultative work in 2015-2016 under the theme – *“Development of the Integrated Analyses for a REDD+ Strategy in Nigeria with a Focus on Cross River State”* These included:

- g) Finance, Incentives and Benefit Sharing;
- h) Natural Resource Management and Sustainable Forest Management;
- i) Assessment of Policy, Legal and Regulatory (PLR) Enabling Environment;
- j) Cost Benefit Analysis of REDD+ Strategy Options;
- k) Private Sector Engagement and Roles; and
- l) Knowledge Management and Products.

The results from the above analytic works and those from past studies were used to develop an “Issues and Options” report which was subjected to stakeholder validations both at federal and CRS levels. This REDD+ Strategy for CRS derives primarily from these processes consultative and analytical processes from 2014-2017.

## CHAPTER 2: SITUATION ANALYSIS

### 2.1 The Baseline

#### 2.1.1 Demography, location and social context

Nigeria is Africa's most populous nation with an estimated population of about 179 million and located between latitude 4° and 14° north of the equator and longitudes 3° and 14° east of the Greenwich Meridian (Adewale, 2011). The country lies entirely within the tropical zone. It occupies about 910,770 km<sup>2</sup> (about 3% of Africa's landscape) (FAO, 2015). The country is bounded by the Atlantic Ocean in the South, the Republic of Benin to the West, the Republic of Cameroon to the East and the Republic of Niger and Chad to the North. It is endowed with a wide spectrum of ecological biomes ranging from the 857 kms stretch coastal marine ecosystem in the south, through a belt of the Guinean Rainforest zone, an extensive Guinea Savanna woodland, the Sudan Savanna grassland and a dry Sahel scrubland threatened with the fast expanding influence of the Sahara desert in the north (Adewale, 2011). The country's two main river systems, the Benue and the Niger and their associated tributaries, form a huge network of hydrological systems and wetlands.

The country has a broad spectrum of socio-cultural diversity comprising about 250 ethnic groups spread across the 774 Local Government Areas (LGAs) in 36 States and a Federal Capital Territory located in Abuja in the central part. According to the United Nations, at 5.5 children per woman, Nigeria has one of the highest growth and fertility rates in the world<sup>5</sup>. By 2050 the population is projected to reach 398 million and to grow to between 505 million and 1.03 billion people in 2100, up from 33 million people in 1950.

#### 2.1.2 The socio-economic landscape

The outlook for Nigeria is both challenging and promising. While the political economy of the country is increasingly investor-friendly, the state of the country's infrastructural development still needs attention. Nigeria rates far better than most sub-Saharan African countries in terms of business constraints with a GNI per capita of US\$ 2,950 (World Bank, 2016 – Box 1). The main challenges lie in electricity supply, access to private finance and transportation and infrastructural and institutional inefficiencies.

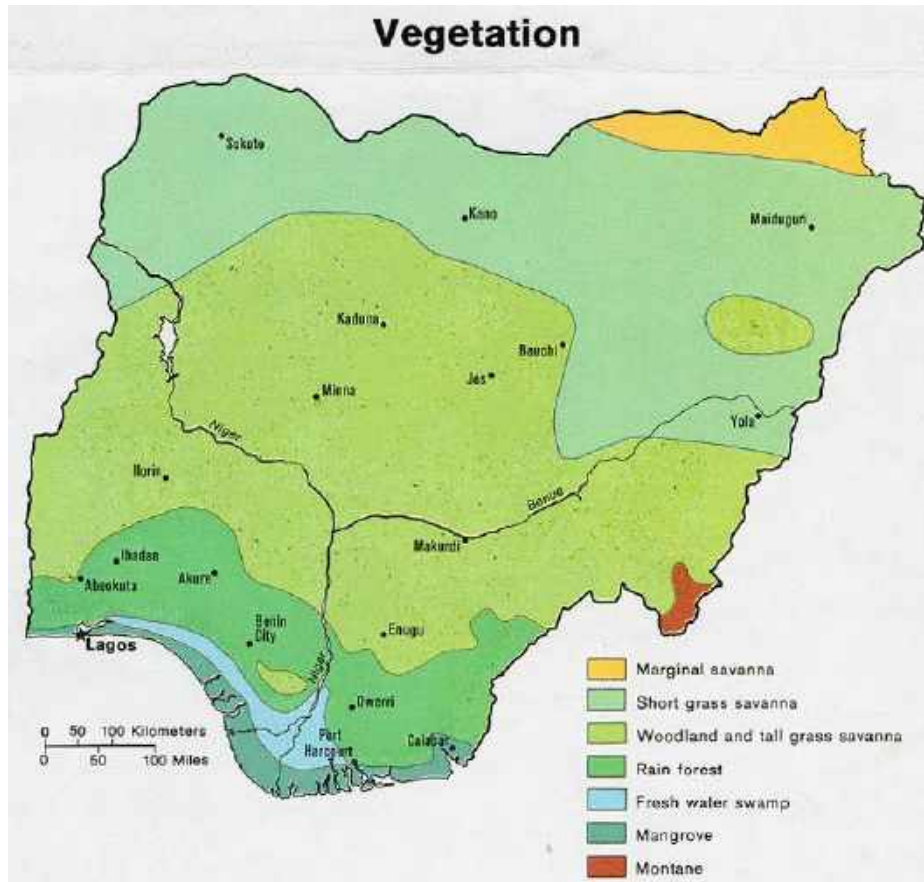
The energy sector is the driving force of Nigerian economy. The country is the largest oil-producing country in Africa. However, this sector, being the nerve centre of the economy, has witnessed many challenges that precipitated a series of reforms - mainly regulatory - leading the country into economic recession. While the country has great potential to increase oil production and thrive even at the current global low oil prices, it is not possible to do so due to protracted and violent local conflicts in the north where most of the oil reserves are. Other sectors like real estate, infrastructure and construction have great potential and current government policies promote private sector investment. However, Nigeria has yet to come out of recession for these sectors to boom and has seen a decline in mining and utilities over the last decade though it started off initially from a very high base where mining and utilities contributed 44% of GDP (Bhorat et al. 2016).

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<sup>5</sup> reference: <https://www.naij.com/535169-world-2050-nigeria-ranked-fourth-new-un-report.html>

### 2.1.3 Forest resources of Nigeria and contribution to the national economy

Nigeria contains a rich series of climatic and vegetation zones across landscapes (Figure 2), resulting in diverse range of habitats, from desert zones in the northeast to rain forests, mangroves, swamp forests along the south coast, tropical high forests (montane) and savannah woodlands. According to the latest assessment by FAO (2015), Nigeria's forests and woodlands currently cover about 6,993,000 hectares (7.7% of total land area). The country is endowed with rich biodiversity – some 4,600 plant, 839 bird and 274 mammal species. The Gulf of Guinea's forests stretch into southern Nigeria: these forests are recognized as a global biodiversity hotspot.



**Figure 2: Vegetation Zones of Nigeria**

The forestry sector plays an important role in the Nigerian economy in the provision of goods and ecosystems services, and contributes to the sustainability of the environment. The sector offers opportunities for sustainable livelihoods and poverty eradication in the country, particularly in rural areas where the majority of the people live. Forestry products contribute between about 0.41 % to the total Gross Domestic Product at 2013 basic price (FRN, 2014), or 2.4% as reported in Nigeria's Country Report for Nigeria for the Forest Resource Assessment (FRA) Report (2015).

Forests in Nigeria are estimated to provide employment for over two million people, through supply of fuel wood and poles, while more than 80,000 people work in the log processing industries, especially in the southern part of the country (FAO 2015). Most of the forest goods are traded in the informal sectors and not properly accounted for in the national accounting system. The intangible environmental, social and cultural services provided by the sector are also not reckoned in the accounting system. The sector

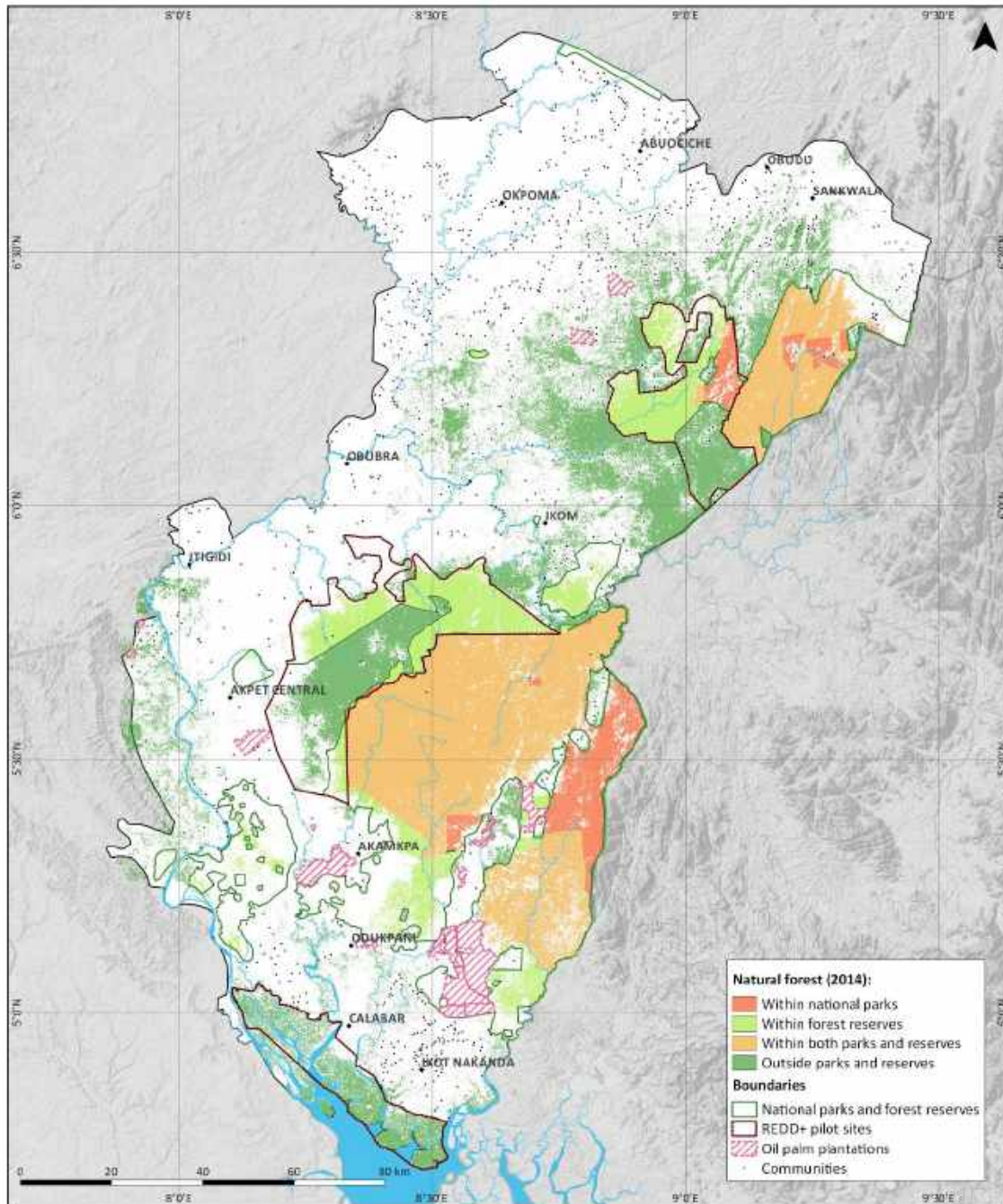
plays a major role in the rural economy through the provision of Non-Timber Forest Products (NTFPs) and also accounts for a high proportion of domestic energy (over 70% of the energy needs in the rural areas), forest source foods and medicines to the rural population (and increasingly the urban population). Fuelwood accounts for over 50% of overall energy consumption in the country and is the dominant source of energy in the domestic sector (FGN, 2015).

The Forest Definition for Nigeria is a minimum 15% canopy cover; a minimum area of 0.5 ha; and a minimum of 3 m in height. Forest management regimes in Nigeria comprise Forest Reserves (FRs), National Parks (NPs), Game Reserves (GRs) and Wildlife Sanctuaries (WSs), Strict Nature Reserves (SNRs), Plantations and Community Forests (CFs)/Open Areas (OAs). Table 1 provides more details. Figure 3 show forest management regimes and tenure types in Cross River State. NPs and CFs are managed by the Federal Government. All other designations are managed by the States. With the exception of NPs, the management effectiveness of the rest is quite weak (NPD, 2011). This is compounded by inadequate human and financial resources to execute enforcement and administrative mandates and lack of community and other stakeholder participation in the management of the forest resources (UN-REDD, 2016a).

**Table 1:** Forest Management Regimes in Nigeria and their Management Effectiveness

Management Regime	Description of Management	Conservation Status and Management Effectiveness
Forest Reserves (FRs)	About 445 gazetted reserves (~29% of forest cover). Established for the supply of timber. Collection of NTFPs is permitted as well as hunting.	Variable, majority are heavily degraded with no management plans, and ineffective protection.
National Parks (NPs)	There are 7 of these (~28% of forest cover). Established for the protection of biodiversity and tourism. No hunting or collection of NTFPs allowed.	Relatively well managed compared to forest reserves.
Game Reserves (GRs) and Wildlife Sanctuaries (WSs)	There are 23 of these. Established for the sustainable management of wildlife with controlled hunting. No timber extraction permitted.	Mostly degraded with no management plans and ineffective protection.
Strict Nature Reserves (SNRs)	There are 8 of these. Strict protection with no use of any type allowed other than scientific research.	Most are small (between 19 and 460 ha), and degraded with ineffective protection.
Plantations	Often within FRs. Planted forests, mostly exotics, e.g., teak, <i>Gmelina</i> , rubber, etc.	Variable, most are without management plans.
Community Forests (CF)/ Open Areas	Depends upon community bye-laws. Most allow all uses including timber extraction and clearing for farmland but some have controlled use of some forest products.	Variable mostly degraded except in the more inaccessible parts of the country.

Source: FRN, 2012



**Data sources:**

*Natural forest mask:* NASRDA and FAO on behalf of the UN-REDD Programme (2015) Study on the Drivers of Deforestation and Forest Degradation in Cross River State. Natural forest is a combination of the 'Montane forest', 'Tropical High Forest', 'Open forest' and 'Mangrove' classes in the 13 class dataset derived from satellite imagery.

*Cross River State, national park, forest reserve, plantation and REDD+ pilot site boundaries:* Cross River State Forestry Commission and Flasse Consulting (2002) Cross River State Community Forestry Project: Rapid Appraisal of Forest Resources from Remotely Sensed Data. Submitted to ERM – Environmental Resources Management and DFID – Department for International Development

**Figure 3: Natural forests in CRS and location of oil palm plantations (UN-REDD, 2017)**

## 2.2 Forest type, cover and change in Cross River State

Cross River State (CRS), located in southeast Nigeria, is one of the 36 states of Nigeria. It has a population of 3.34 million people and with a total land area of 21,461.28 km<sup>2</sup>. The State is home to one of the largest contiguous fragments of natural forest in the country (Mfon et al. 2014) and CRS contains much of Nigeria's remaining standing forest.

The ecological zones of Cross River State include lowland rainforest, freshwater swamp forest, mangrove vegetation, coastal vegetation, montane vegetation, savannah-like vegetation and wetlands. Although significant areas have been converted to farmlands, and natural forests have been disturbed by human activities, forests still cover extensive areas in the centre, north and east.

According to the assessment of drivers of deforestation carried out by National Space Research and Development Agency (NASRDA) and FAO under the auspices of the UN-REDD Programme in 2015 (UN-REDD, 2015), the largest area of forest in the analysis of land-use change is tropical high forest, with evergreen tree species and a canopy averaging 40-60 metres in height. Montane vegetation is predominant in the northeastern parts of the State, with the highest peak in the Sankwala Mountains reaching about 1,819 m above sea level. A wide belt of freshwater swamp forest occurs to the north of the mangrove vegetation zone. This forest type is flooded during the wet season but the flood recedes during the dry season. Original swamp forest remains mainly on alluvial sites along the major rivers - Cross, Calabar and Great Kwa - but much of this vegetation type has been converted for other uses such as agriculture. Mangroves can be found along the coast and in the estuary of the Cross River. Other wetlands are found at the Cross River Estuary and the Cross River Flood Plains at Obubra, as well as scattered backswamps and flood plains. Savannah-like vegetation occurs in the central and northern areas of the State (NASRDA and FAO 2015).

The largest areas of forest in the State fall within the Cross River National Park (CRNP), a protected area established by the Federal Government of Nigeria. Cross River State's 14 forest reserves, which are gazetted lands held by the State government for conservation and the production of forest resources, cover more than 2,700 km<sup>2</sup> though the majority have experienced significant deforestation (UN-REDD, 2015). Concessions to plantation and agricultural companies make up a relatively small proportion of the land area in Cross River State.

All lands outside these categories are managed communities or under private tenure (although few communities have formal title to these lands). For example, the drivers of deforestation study data shows that more than 40% of the State's natural forests are outside of forests reserves, the National Park and plantation/agricultural concessions (UN-REDD 2015). 18 community forest management initiatives in Cross River State, covering approximately 600 km<sup>2</sup> are reported. In order to develop this trend, six data points were used to plot the forest cover over a period of 38 years (see Table 2). The data points were derived from past studies in CRS as well as other data points derived from the results of this study.

**Table 2:** Forest Cover in Cross River State from 1978 to 2014

Study	Year	Forest Cover (ha)
FORMECU (Forestry Monitoring, Evaluation Coordination Unit) <sup>6</sup>	1978	968,200
FORMECU	1995	842,000
National Space Research and Development Agency (NASRDA) and FAO	2000	849,485
Cross River State Community Forestry Project Rapid Appraisal of Forest Resources from Remotely Sensed Data <sup>7</sup>	2002	772,961
NASRDA and FAO	2007	809,578
NASRDA and FAO	2014	642,195

Source: UN-REDD, 2015.

## 2.3 Social and Environmental Value and Benefits of Forests in CRS.

Forests are an important asset for Cross River State's economy. Previous estimates made by the Cross River Forestry Commission (CRSFC) on the total potential value of tariffs for timber extraction in the State's standing tropical high forest areas at the time (excluding the Cross River National Park) were N5.6 billion (US\$0.25 billion; based on December 1993 prices) (UN-REDD, 2017). However, due to high deforestation rates leading to rapid decline in forest cover in recent decades, a moratorium on timber extraction was declared in 2008 and is now extended indefinitely. Forests in Nigeria are estimated to provide employment for over two million people, through supply of fuel wood and poles, while more than 80,000 people work in the log processing industries, especially in the southern part of the country (FAO 2015). The socio-economic values of the forests in the Cross River State go beyond timber production, to the diverse array of non-timber forest products (NTFPs) and other services that forests offer.

The following section provides excerpts from the report on social and environmental benefits provided by the forest in the State, including ecosystem services (UN-REDD, 2017). These can be described as follows;

### 2.3.1 Non-Timber Forest Products

In Cross River State, more than 700 different NTFPs have been identified, with harvesting of over half of these (430 species) recorded within the State. For instance, in the 1990s, there were reported to be over 50 million matured large stems and 30 million small stems of rattan canes growing in the State, and over

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<sup>6</sup> Assessment of land use and vegetation changes in Nigeria between 1976-1993/95 by Geomatics International Incorporated (1995) (FORMECU);

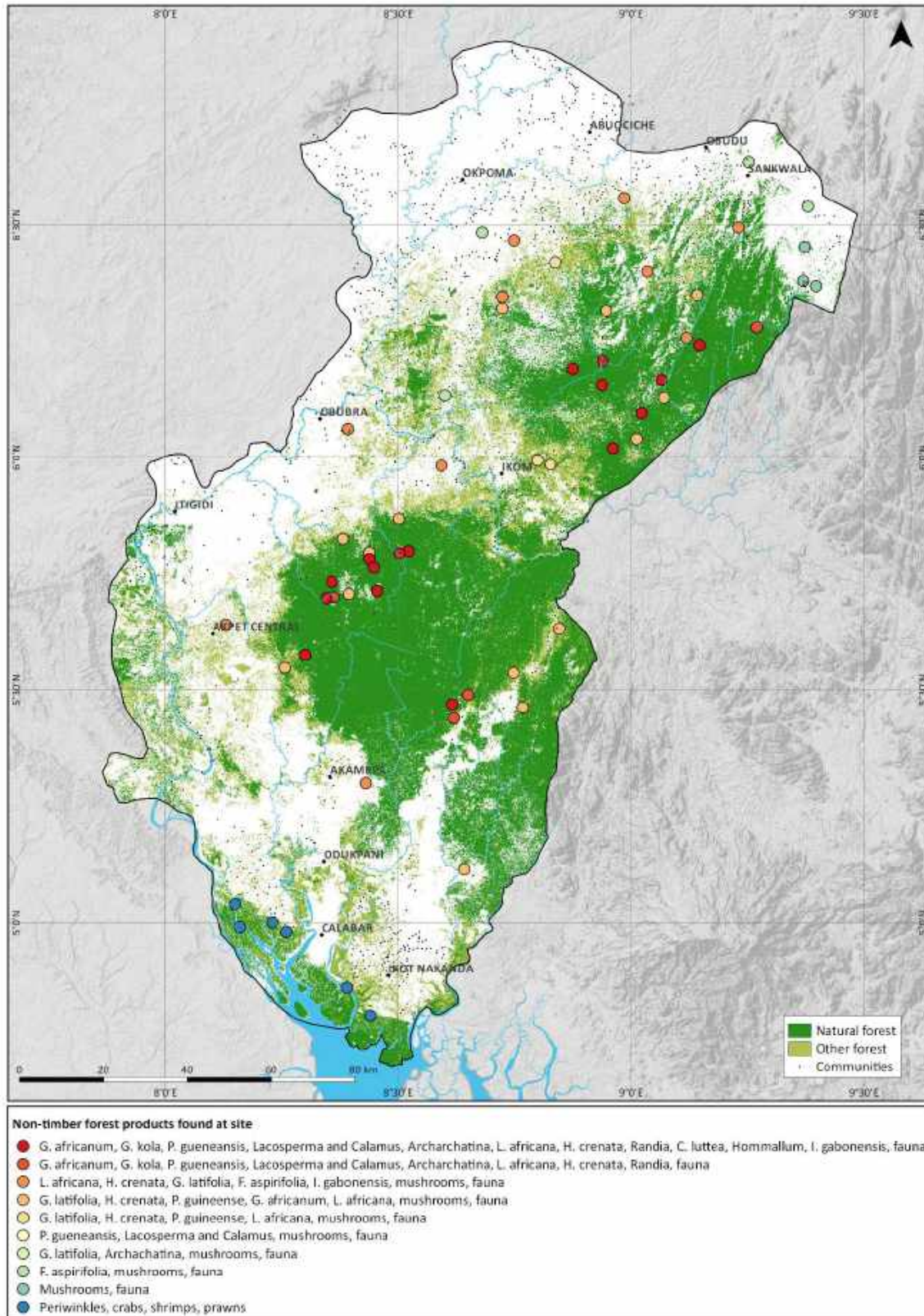
<sup>7</sup> Cross River State Community Forestry Project's Rapid Appraisal of Forest Resources from Remotely Sensed Data conducted by Flasse Consulting (2002), supported by the U.K. Department for International Development (DFID)

2.5 million stands of bush mango (Dunn et al. 1994, in Mfon et al. 2014). Some of the most valuable forest products found in the State's forests include:

- *Gnetum africanum*, a leafy vegetable known locally as afang'afang', which is a vegetable contributing widely to the livelihoods of people across the Nigerian rainforest.
- The leaves, fruits and kernels of *Elaeis guineensis* (oil palm) are all widely used and valued both as a food source and for its medicinal properties.
- The sap of *Raphia hookeri* is often distilled for alcoholic 'gin'.
- *Garcinia* spp. and *Randia* spp have antibacterial properties and are used as chewing sticks for oral hygiene throughout southern Nigeria.
- Giant land snails (*Archachantina marginata*) are widely collected for food.
- Of the many medicinal plants found in the State's forests, *Drypetes flouribondafloribonda* is used in the treatment of heart diseases, and *Enantia chlorenta* and *Morinda lucida* for the treatment of malaria and/or fever (Adebayo and Krettli 2011).
- Bush meat, an NTFP harvested which provides valuable protein and income. A variety of mammals, reptiles and birds are harvested for meat including *Antherurus africanus* (Porcupine) and *Tregelaphus scriptus* (Antelope). The wild meat is consumed locally or traded in rural and urban markets. Demand for bushmeat has grown in recent decades and high rates of harvesting negatively affect food security as well as biodiversity.

Sites in the forest inventory conducted in Cross River State in 2015-2016 which include records of key NTFP species (such as gnetum, mushrooms and fauna) are found scattered across the State, in all forest types – these sites are within the National Park and more remote forest areas, as well as in open forest and savannah areas in the north. See Figure 4.





**Figure 4: Distribution of Non-Timber Forest Products (UN-REDD, 2017)**

### 2.3.2 Mangrove ecosystem

Mangroves are often rich in biodiversity and provide ecosystem goods and services such as fisheries production, shoreline stabilisation, and nutrient and sediment trapping. Additionally, they have high carbon storage and sequestration potential, making them important coastal forest ecosystems to consider in national REDD+ strategies, even if their area is low relative to other forest types.

The mangrove ecosystems to the south of the State also offer great value to coastal communities, such as those in Calabar Municipality, Calabar South, Odukpani, Akpabio and New Bakassi Local Government Areas (Nwosu and Holzlohner 2016). Mangrove forests provide a varied and abundant supply of food for communities and a source of income through fisheries. Some important species caught for consumption and trade in local markets include the Bonga fish (*Ethmalosa fimbriata*) and the estuarine shrimp (*Nemmatopalaemon hastatus*). Forest inventory data for NTFP species in the mangrove area of the State includes records for periwinkles, crabs, prawns and shrimp.

Mangroves also contribute to the fisheries production through the transfer of nutrients to the estuary and coastal waters. Many species of commercially traded marine organisms depend on mangroves for at least part of their life cycle serving as a feeding and nursery ground for coastal fish species. In terms of NTFPs, mangrove forests are also a rich source of wood supply for various domestic and industrial purposes, including for processing of fish and shrimps, as well as building materials and energy needs.

### 2.3.3 Fuelwood

The State's forests are also a source of fuelwood, and use of this resource has grown from 50 million m<sup>3</sup>/year in 1990 up to 70 million m<sup>3</sup>/year. The increase in consumption can be attributed mainly to population growth; however, the lack of affordable alternatives, especially for the poorest consumer is also a contributing factor (UN-REDD, 2016a). The majority of households in the State depend on wood for energy (for cooking and lighting), with some 64.4% of communities using fuelwood as a primary source of energy. It is estimated that some communities such as the Buanchor community use as much as 19.760 kg fuelwood per household per annum, while other communities are shown to use between 2.6kg (e.g. in New and Old Ekuri) and 10.4kg (Esuk Idebe) per household per annum (UN-REDD, 2016a). In addition to domestic energy use, the 2015 study on drivers of deforestation and forest degradation found that fuelwood is used for preserving and processing agricultural produce, such as cassava flour (NASRDA and FAO 2015).

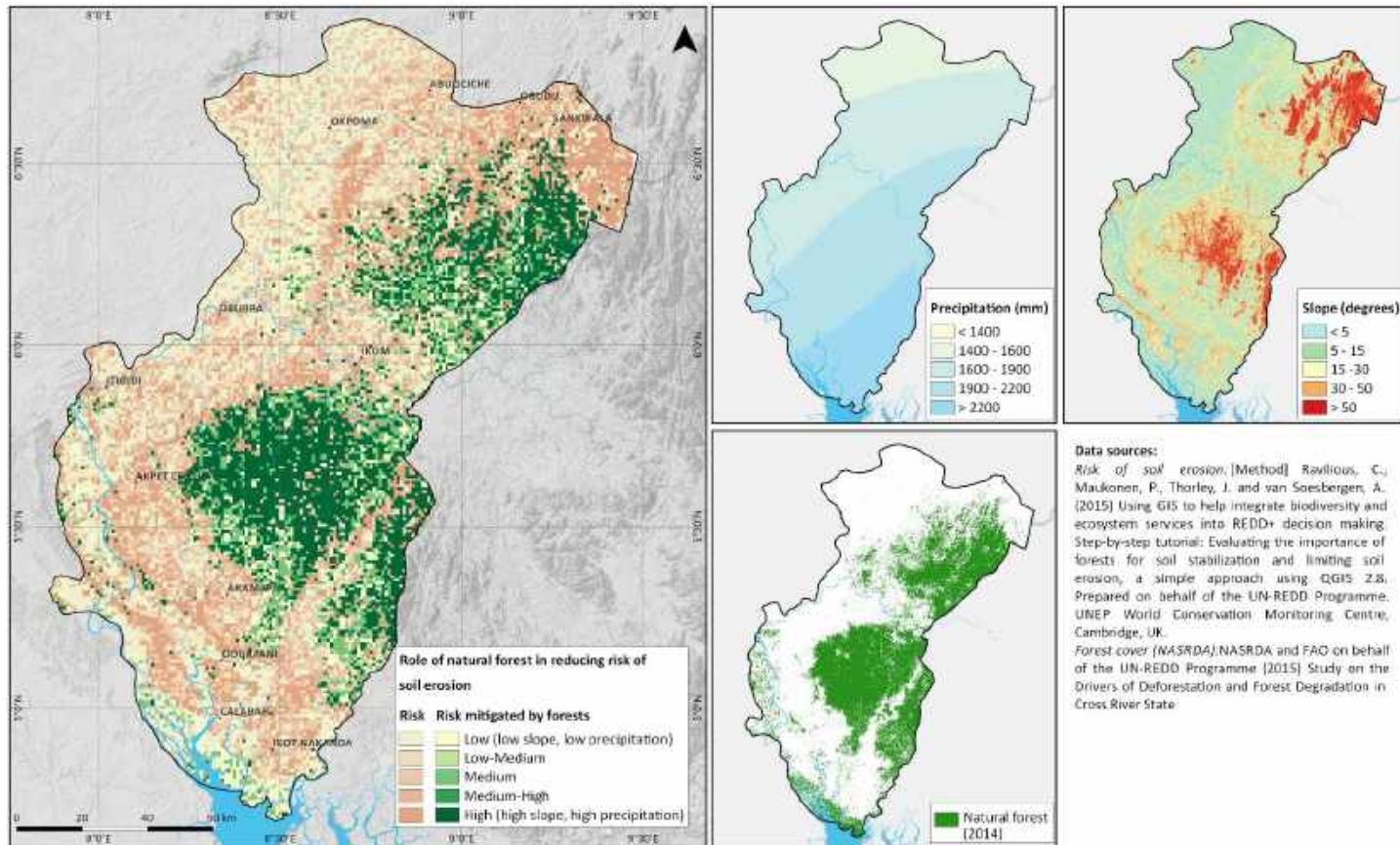
The contribution NTFPs make to rural livelihoods depends on variables such as the availability of forest resources and access to markets, as well as socio-economic factors like wealth and gender (Malleson et al. 2014). Income generated from NTFPs are particularly relevant for remote communities and poorer households, who depend on these resources to a much greater degree due to lack of opportunities for alternative income generation. NTFPs also provide societal groups that are more marginalized with an opportunity to earn money (Offiong and Ita 2013, Malleson et al. 2014). The importance of income generated from NTFPs reflects the timing and flow of this income, with much NTFPs collection and processing following seasonal variations, and acting an economic buffer for rural communities by supplementing other incomes sources like farming. NTFPs thus make a significant contribution to the resilience of rural forest dwellers' livelihoods in the face of economic and climatic uncertainty (Malleson et al. 2014).

### 2.3.4 Soil erosion control

Soil erosion control was identified in consultation with stakeholder groups as an important benefit of retaining and restoring forest through REDD+ in Cross River State (Nkor et al. Forestry Commission. 2015). Forests can help to prevent soil erosion, particularly on slopes, with the physical structure of the forest intercepting rain, reducing its impact on topsoils and slowing runoff, well as through the roots stabilizing the soil. In deforested or degraded forest landscapes the land may be less able to absorb and hold water, resulting in increased run-off after heavy rains, and consequent problems of erosion and sedimentation, downstream flood risk and water shortages at other times of the year. Higher soil sediment loads carried by runoff can also reduce downstream water quality.

The role of forest in reducing erosion is most critical where high rainfall combines with steep slopes to increase erosion risk within catchments. Analysis in Cross River State combined two layers: slope grade and rainfall patterns (See Figure 5). It indicates that tropical high forest and montane forests play a greater role in controlling soil erosion risk than other types of forest.

The areas without forest cover in the north-east and south of the State have a higher risk of soil erosion. REDD+ actions that are carefully designed and targeted may help contribute to soil erosion control in these areas. Further analyses of deforested or degraded areas in catchments where erosion risk is high may help to identify potential locations for forest restoration with additional benefits for the stabilization of soils.



**Figure 5: Risk of Soil Erosion (UN-REDD, 2017)**

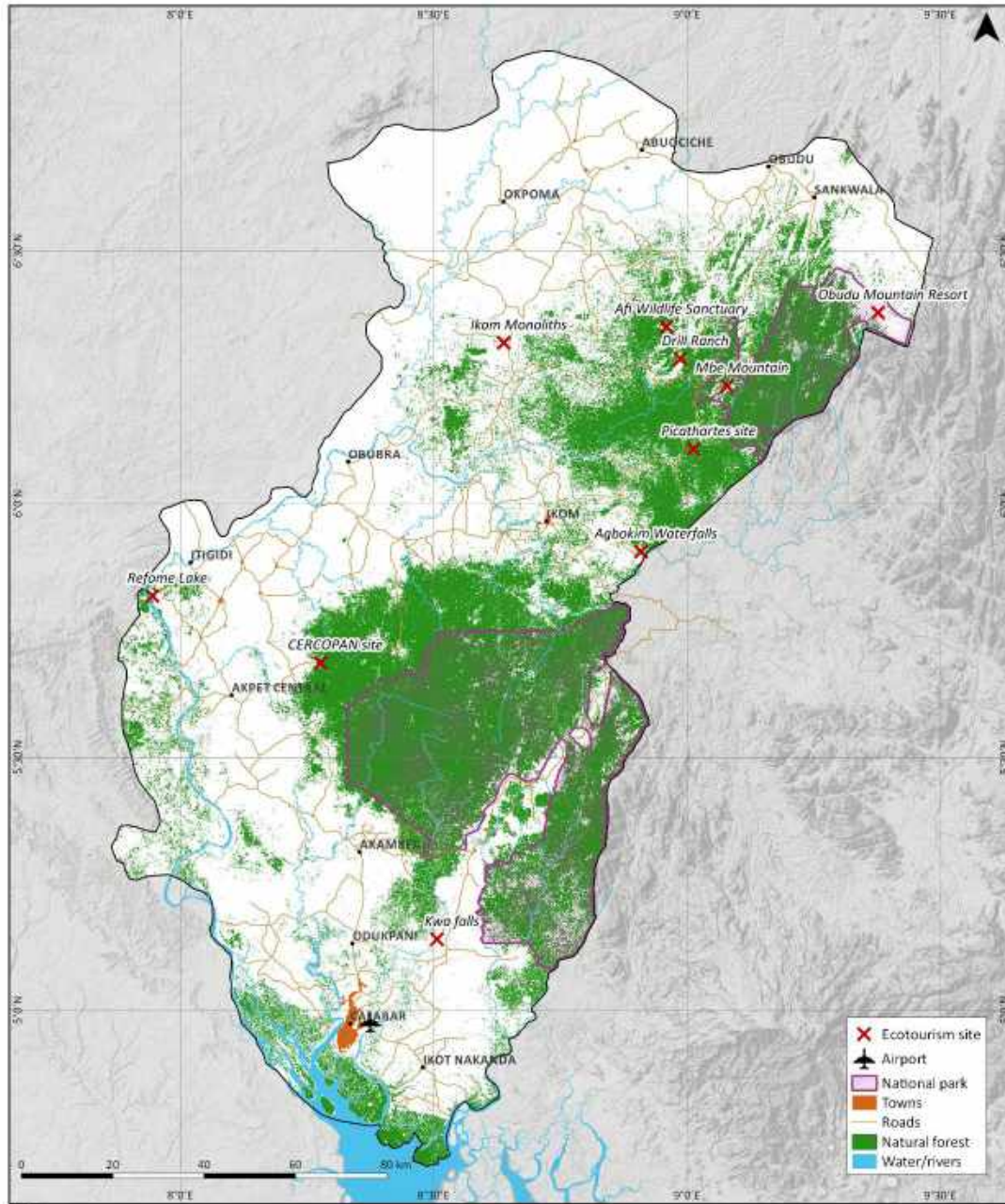
### 2.3.5 Biodiversity

The Cross River State National Park, established in 1991 contains high levels of diversity and endemism (Wildlife Conservation Society (WCS) 2016a). It has two divisions, Oban and Okwangwo, which are separated by the Cross River valley. The whole Park covers more than 3,600km<sup>2</sup>, and the Oban division has the largest area of closed-canopy rainforest in Nigeria. The area is a biodiversity hotspot with species such as the Cross River gorilla (*Gorilla gorilla diehli*), found mainly in the Okwangko division, as well as Nigeria-Cameroon chimpanzee (*Pan troglodytes ellioti*), drill (*Mandrillus leucophaeus*), Preuss's red colobus monkey (*Procolobus preussi*), leopard (*Panthera pardus*), forest elephant (*Loxodonta cyclotis*) and the grey-necked Picathartes or rockfowl (*Picathartes oreas*). The Oban division is one of the most ornithologically diverse sites in the country and may be the richest site in Africa for butterflies. However, hunting, illegal logging and other pressures threaten the Park's biodiversity (WCS 2016b; WCS 2016c).

There are 22 primate species, including threatened and endangered species such as the Cross River Gorilla, Drill and Preuss's Guenon monkey. The gorillas live in forests along the Nigeria-Cameroon border.

Locally collected data from 1998-2008, provided by WCS , show clusters of gorilla nest sites in four main areas in and around the Obudu division of the National Park. Figure 7 in Chapter 3 shows conversion of forests to other land uses (2000-2014) and indicates that these forest areas are being fragmented, and connectivity between the nest sites and other forest patches is being lost.

Besides being a supplier of a vast amount of natural products, forests and their associated biodiversity also have the potential to successfully contribute, through ecotourism, to the sustainable development of the tourism industry. In 2008, an estimated 284,000 tourists visited Cross River State, while expenditure receipts amounted to N22.9 billion (US\$176 million) (Ajake 2016). In Nigeria, and in Cross River State in particular, development of this industry has been a priority for government (See Figure 6). Funding improvements to resorts and tourist sites, such as Agobokim waterfalls, the Monolith sites and the Cross River National Park, has allowed the State to position itself as a major tourist destination in Nigeria, as has investment in and development of cultural celebrations such as the Calabar Carnival . This is reflected in the increased number of tourists visiting Cross River State - from 2,210 people between October and December 2000 to about 8,162 tourists between October and December 2009, visiting from both outside and around the country.



**Data sources:**  
*Natural forest mask:* NASRDA and FAO on behalf of the UN-REDD Programme (2015) Study on the Drivers of Deforestation and Forest Degradation in Cross River State. Natural forest is a combination of the 'Montane forest', 'Tropical High Forest', 'Open forest' and 'Mangrove' classes in the 13 class dataset derived from satellite imagery.  
*Ecotourism sites:* Geographical coordinates of important ecotourism sites compiled by Cross River State and UNEP-WCMC.

**Figure 6: Ecotourism sites (UN-REDD, 2017)**

## 2.4 Land management practices in support of REDD+ implementation in CRS

Land management practices in Cross River State that have relevance to REDD+ implementation include: National Parks (NP); Forest Reserves (FR); Community Based Natural Resource Management (CBNRM) (including participatory forest management, community based ecosystems approach to fisheries management and community based mangroves management); Agroforestry; Commercial agriculture, Forested Landscape Restoration (FLR); Certification of forest products and tree crops (e.g., palm oil, cocoa, bananas, timber etc.). Other practices such as energy-related interventions, green mining, enforcement of Environment and Social Assessment (ESA) provisions in infrastructure development are also included under the land management practices that contribute to forest management.

The following section details some of these land uses and land management practices currently in place. An analysis of the status and experiences to date of these provide the basis upon which the Strategic Interventions described in Chapter 4 were determined.

### 2.4.1 National Parks

National Parks in Nigeria are gazetted by Federal law and as such their existence are not contestable. They offer a great opportunity for conservation of carbon stocks and significantly contribute to the enhancement of other ecological services such as surface and ground water conservation, soil fertility enhancement, pollination and control of soil erosion. From a policy perspective, the fact that National Parks are under Federal rather than State jurisdiction, reduces the decision-making powers of the States over National Parks. The National Park system of Nigeria comprises seven (7) National Parks<sup>8</sup> located in all the major ecological zones covering a total land area of 22,206 km<sup>2</sup> (see Figure 3). It is noteworthy that of all the ecological zones in Nigeria, only the marine ecological system does not have a land area designated as either National Park or Forest Reserve.

Cross River National Park (CRNP) with a land area of 3,640 km<sup>2</sup> is the third largest park in Nigeria after Gashaka-Gumti (6,731 km<sup>2</sup>) and Kainji Lake National Parks (5,382 km<sup>2</sup>). CRNP consists of two divisions: the Oban Division covering an area of approximately 3,000 km<sup>2</sup> of lowland rainforest which is the largest area of closed-canopy rainforest in Nigeria and is contiguous with Korup National Park in Cameroon; while the Okavango Division covers an area of 640 km<sup>2</sup> (WCS Nigeria, 2015).

The key threats to the National Park system include: poaching and illegal logging stemming from insufficient protection of the park environment due to inadequate resources and the weak capacities of the park management institutions to ward-off the conventional drivers of deforestation caused by encroachment for agricultural expansion, and over-harvesting of resources (WCS Nigeria, 2015; UN-REDD, 2016a).

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<sup>8</sup> The national parks include: Chad Basin National Park (2,258 km<sup>2</sup>); Kainji Lake National Park (5,382 km<sup>2</sup>); Kumuku National Park (1,121 km<sup>2</sup>); Gashaka-Gumti National Park (6,731 km<sup>2</sup>); Cross River National Park (3,640 km<sup>2</sup>); Okomu National Park (202 km<sup>2</sup>); and Old Oyo National Park (2,512 km<sup>2</sup>).

## 2.4.2 Forest reserves

Forest reserves are legally backed up by state government legislation for both protection/conservation and production objectives (UN-REDD, 2016a) where timber harvesting is allowed under the single tree permit or concession license. Nigeria has 445 forest reserves, under varied management regimes and effectiveness. The National Programme Document (2011) described the different forest management regimes and their management effectiveness in Nigeria (Table 1). Forest Reserves (FRs) and other forest management regimes including Game Reserves (GRs), Strict Nature Reserves (SNRs), Community Forests (CFs) and Plantations, were found to be poorly management, heavily degraded and generally without management plans with the exception of National Parks (NPD-PP, 2011). This is mainly attributed to inadequate capacities (human and financial) at both federal and state levels to effectively plan and manage the forest estates.

Cross River State has 14 forest reserves covering a total area of 2,751 km<sup>2</sup> of gazetted land held by the State Government for the conservation and sustainable management and production of forest resources. However, in recent years, the FRs in CRS have undergone significant deforestation and forest degradation. Nine of the 14 FRs had lost more than 50 percent of the original forest cover by 2001, with three of them having lost 100 percent of the forest cover (Ikome fuel wood Forest Reserve, Gaba -Yala Forest Reserve and Yache -Yala Forest Reserve (UN-REDD, 2016a).

The main threats to Forest Reserves include subsistence and commercial agriculture, fuelwood collection (firewood and charcoal), over-harvesting of timber (illegal), forest fires, settlements and infrastructure development. Due to poor implementation, the moratorium on timber has not slowed down the rate of deforestation, rather it has increased between 2007 and 2014 (UN-REDD, 2015). In addition, the moratorium has alienated communities from their rights of benefiting from forest resources utilization (UN-REDD, 2016a). With increasing population growth and urbanization, resource utilization pressures have continued to result in forest conversion leading to deforestation and forest degradation in the long term.

The absence of forest management plans for both forest reserves and community forests also implies that there is no deliberate forest fire management and controls in place. However, according to the latest statistics (FAO, 2015), the trend of total forest area burned annually in Nigeria has been decreasing – from 47,000 ha in 2003 to 5,000 ha in 2012 (Table 3). This is a remarkable improvement mainly attributed to government efforts at both federal and state levels to encourage early burning especially in agricultural lands (during the months when forest biomass fuels are not too dry to avoid spread into forest areas). With this control in bush burning, forest fire is considerably prevented.

Most of the uncontrolled fires emanate from charcoal kilns and from agricultural fields where fires are used as part of land preparation. They are also used in hunting to scare animals in one particular direction where poachers would be waiting to shoot and kill the animals. Forest degradation through late forest fires can still be abated through effective forest management and planning. Uncontrolled late fires destroy biodiversity upon which local communities depend for their livelihoods – a critical component of non-carbon benefits under REDD+ important for community adaptive capacity and resilience to climate change. Late fires, which occur in the driest months of the year, also destroy forest regeneration thus degrading forest areas on a wide scale and over a long term.



**Table 3:** Trend in total forest area burned from 2003 to 2012 showing a decrease over the years

AREA (1,000 HA)	YEAR									
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Land Area Burned	8228	7821	7226	7222	8897	4492	5113	4444	3664	3103
Total Forest Area Burned	47.0	7.0	7.0	10.0	26.0	9.0	22.0	6.0	10.0	5.0

Source: (FAO, 2015)

### 2.4.3 Community based natural resource management (CBNRM)

Community Based Natural Resource Management (CBNRM) is an economic incentive-based natural resource management approach which provides both lessons and building blocks for REDD+ implementation in Nigeria, and in CRS, in particular. The most common types of CBNRM that are of relevance to REDD+ implementation are Participatory Forest Management (PFM), including Joint Forest Management, Community Based Ecosystems Approach to Fisheries Management, with the closely related and complimentary Community Based Mangrove Management (CBMM) systems (UN-REDD, 2016a). The main principles of CBNRM are devolution of decision-making authority and responsibility for resource management to the lowest (community) level and recognizing the right to benefit from such involvement by communities who decide on how the benefits are used for the benefit of whole community or re-distributed fairly among community members - good examples of vertical and horizontal benefit sharing (Matakala and Mwape, 2011) that will be critical for REDD+ implementation and success in CRS.

Notable examples in CRS include several initiatives aimed at promoting Community-Based REDD+ (CBR+) under the UN-REDD Programme and GEF-SGP support. The programme is implemented in three (3) pilot sites involving 70 pilot Forest Dependent Communities across 10 (out of the 18) Local Government Areas in the State. Several of these pilot communities have developed some level of natural resource governance structures, like the Forest Management Committees (FMCs) that take responsibility for the management of much of the State's community forests. Some of these FMCs have received significant capacity building support from local and international Non-Government Organizations in the past and some have played key roles in limiting and monitoring logging – demonstrating their potential role in a REDD+ programme. These include for example the Ekuri community that has led the State's conservation record with their conservation of over 33,000 ha of community forest, the nine villages around the Mbe Mountains that established the first community conservancy, and several others like Iko Esai, Abontakon, and villages around the Afi Mountain Wildlife Sanctuary (UN-REDD Programme, 2015). The CBR+ programme is intended to build on these community level governance institutions and the attendant community forestry practice to respond to the drivers of deforestation and build the communities' capacities to implement REDD+.

### 2.4.4 Management of Mangrove ecosystem

With an estimated mangrove area of 10,515 km<sup>2</sup>, Nigeria ranks fourth among the countries where large mangrove reserves still exist, behind Indonesia, Brazil and Australia. Stakeholders discussed the potential for establishing a mangrove protected area, in order to enhance carbon storage potential, protect

provision of ecosystem services to communities, and improve biodiversity conservation. A community-based mangrove and fisheries management approach is also recommended.

Whatever approaches are taken, numerous factors may influence the design and location of mangrove conservation actions under REDD+. The spatial analysis contained in the Multiple benefits study considers several key planning factors, such as mangrove extent, past loss of mangrove cover, and potential pressure from communities and infrastructure. Although few communities are located directly within the mangrove area, infrastructure development is a driver of loss, with the Calabar sea port now under construction in the southwest section, just south of Ikot Nakanda. A buffer of 500m placed around existing and planned infrastructure and communities can help to determine where mangrove conservation may be most feasible in the future. Further assessment of the extent and condition of the mangrove areas in the State should be carried out to validate the spatial information and inform the development of appropriate measures.

## 2.5 Existing legislation, policies and plans relevant to REDD+ implementation in Nigeria with focus on CRS

This section draws from the background and analytical studies prepared for the National Strategy. The section details the current and planned policy, regulatory and legal framework for REDD+ implementation. It also points out gaps and inadequacies relating to the current and proposed legal and policy instruments, as well as where enactment or implementation is yet to take place and/or in a state of flux and change. The section begins with the **National framework** and transitions to the **State Policy, legal and regulatory framework**.

### 2.5.1 National Framework

#### 2.5.1.1 Draft Bill for a National Forest Act, 2003

The bill sets out to provide for the establishment, conservation, sustainable management of the nation's forest resources and its rich biodiversity in conformity with local, national and international processes and initiatives on global forests and environment. The bill is significantly responsive to the REDD+ five activities. It hinges on the principles of sustainable forest management (SFM) of forest resources in and outside forest reserves. It recognises the rights of local communities to fair and equitable sharing of benefits derived from genetic resources and prescribed the requirement of prior informed consent of communities for access to biological resources outside forest reserves. It further provides for the recognition and protection of local communities' traditional knowledge, cultural heritage and intellectual property outside forest reserves. The Bill provides for private sector participation in forestry development programmes and the establishment of a National Forestry Trust Fund at the Federal Level. The fund is to facilitate the promotion and financing of forestry development projects and programmes as a sustainable source of funding.

The Bill also seeks to promote the participation of women and youths in sustainable forest resources management and utilization. It is, however, silent on equity and fairness in mainstreaming gender issues into SFM which should be adequately reflected in the draft bill before enactment into law.

### **2.5.1.2 National Forest Policy, 2006**

The National Forest Policy is the overarching framework on forestry development in Nigeria. The overall objective of the policy is to achieve sustainable forest management that would ensure increases in the economic, social and environmental benefits from forests and trees for the present and future generations including the poor and vulnerable groups. The policy promotes and supports the decentralization of roles and functions amongst stakeholders (public, private, NGOs, including, Community Based Organizations (CBOs) and civil society), towards the attainment of sustainable management of forests.

It also recognizes the environmental functions of forests in carbon capture and carbon sequestration and the need to employ the international financial mechanisms to enhance the carbon stocks. It promotes helping citizens, especially the rural communities and forest dependent persons to better adapt to climatic change, and to benefit from emerging carbon markets. The policy instrument contains strategies for carbon trading, benefit sharing, tree ownership and accessing carbon credit within the framework of the Clean Development Mechanism of the Kyoto Protocol. The policy in general, is supportive of REDD+ implementation.

### **2.5.1.3 National Park Service Act, Cap N65 LFN, 2004**

The Act established the National Park Service (NPS), with mandate for the preservation, enhancement and protection of wild animals, plants and other types of vegetation in the National Parks (and for matters connected therewith). Cross River National Park is one of the seven NPs managed under the Act. Protected areas for biodiversity management could overlap with potential REDD+ activities insofar as habitat for flora and fauna can be preserved while also reducing the emission of greenhouse gases. The Cancun Safeguards provide that REDD+ activities take into account the multiple functions of forests and other ecosystems and be consistent with the conservation of natural forests and biological diversity. The objectives of the Act support the implementation of REDD+ in Nigeria. The Act is REDD+ smart.

### **2.5.1.4 Land Use Act Cap 202 LFN 1990 Cap L5 LFN 2004**

The Land Use Act (LUA) is the principal law in Nigeria regulating the use and access to all lands in the country. Section 1 of the LUA provides that “subject to the provisions of this Act, all land comprised in the territory of each state in the Federation are hereby vested in the Governor of that state and such land shall be held in trust and administered for the use and common benefit of all Nigerians in accordance with the provisions of the Act”. Therefore, all lands in Nigeria are under the control of the respective State Governors. The Federal Government does not play a major role in land administration other than in relation to federal land acquired before the enactment of LUA and such other lands as may be acquired under the Act or any other enabling legislation. National Parks (NPs) are under the jurisdiction of the Federal Government. Other Acts relating to land acquisition for federal projects within the context of LUA include: the Minerals and Mining Act, 2007; (ii) Oil pipelines Act, Cap 07 LFN 2004; and (iii) Electric Power Sector Reform Act, No. 6 of 2005. The Federal government has overriding jurisdiction over land acquired under these acts.

Local Governments are not vested with power of administration of land in the urban areas. They are responsible for the control and management of land in non-urban areas, i.e., LGAs, over which they have the power to grant customary rights of occupancy. The power is exercised subject to the type of use and a limitation on the size of land, above which there is reversion to the Governor of the State. The Governor retains overriding powers over all lands in the state except for those under federal jurisdiction.

### **2.5.1.5 Minerals and Mining Act, 2007**

The Minerals and Mining Act LFN 2007 is the principal law on the mining sector in Nigeria. Mining and minerals are in the Exclusive Legislative List of the 1999 Constitution, hence only the Federal Government has the authority to grant mining permits or licenses. The Act gives superior rights to use land for mining purposes over the statutory right of occupancy or customary ownership of such land. It provides that the use of land for mining operations shall have priority over other uses of land, as it constitutes an overriding public interest within the meaning of the Land Use Act.

Mining activities, if conducted in an eco-unfriendly manner, lead to the clearing of vegetation and could significantly compromise the implementation of REDD+ activities in an area where a mining licence/permit has been granted. According to the provisions of the Mining Act, a mining cycle, based on the term of licence/permit, is a minimum of twenty-five years in the first instance before renewal, while that of quarrying is 5 years. Therefore, it is desirable that mining activities should incorporate offset planting of trees as part of the mitigation measures at the commencement of activities, which is not presently the case. That will be in addition to the requirement for reclamation at closure.

Some provisions of the Act promote and support REDD+ activities and the Cancun safeguards. Such responsive provisions include:

- a) Exclusion of lands constituting National Parks from minerals exploration and exploitation (s.3);
- b) Prohibition of mineral exploration in sacred areas or injury or damage to sacred/venerated trees (s.98);
- c) Restoration and reclamation of mined lands (sections 114 & 115);
- d) Requirement for Environmental Impact Assessment (EIA) before the grant of license or permit (s.119); and
- e) Establishment of Environmental Protection and Rehabilitation Fund (s.121).

However, the Act is silent on the exploration and exploitation of minerals and mining within forest reserves and other ecologically sensitive areas or critical ecosystems which are under the control and management of the state government. Overall, the Minerals and Mining Act is moderately responsive to REDD+ implementation.

### **2.5.1.6 Petroleum Act Cap 10, LFN, 2004**

There are also several federal statutes regulating oil exploration, prospecting and mining in Nigeria. The Petroleum Act 1969 is the principal law on the industry with subsidiary legislation enacted under it. Some of the permits/licenses granted under the regulatory framework in the petroleum industry include Oil Pipeline Survey Permit, Oil Pipeline Licence, Oil Prospecting Licence and Oil Mining Lease. These permits/licenses have implications for the ecosystem. The Environmental Guidelines and Standards for the Petroleum Industry in Nigeria (EGASPIN) elaborate on environmental standards and safeguards applicable in the petroleum industry in the country. These are in addition to the provisions in the Environmental Impact Assessment Act for projects in the oil and gas industry. The identified gaps with respect to considerations for ecosystem health and integrity in relevant instruments are:

- a) Inadequate framework for biodiversity considerations in the petroleum industry activities;
- b) Lack of definite provision for offset planting to adequately mitigate the impact of deforestation and forest degradation; and
- c) Inadequate safeguard considerations and conservation values at the very early stages of activities.

REDD+ implementation provides the opportunity to address these gaps. Notwithstanding, the guidelines and standards are reasonably REDD+ smart.

#### **2.6.1.7 Environmental Impact Assessment Act, Cap E12, LFN 2014**

The Act sets out the general principles, procedures and methods to enable the prior consideration of environmental impact assessment on certain public or private projects. It further provides that before a decision is taken to undertake or authorize the undertaking of any activity, those matters that may likely or to a significant extent affect the environment or have an environmental effect on those activities shall first be taken into account. There are nineteen thematic areas of mandatory study activities. The drivers of deforestation and forest degradation for which mandatory study is required include agriculture, infrastructure, logging and conversion of forest to other land use, mining and housing. Environmental sensitivity and the area coverage of a project are some of the criteria for an EIA.

The Act supports REDD+ implementation in the country and valuable in promoting the adherence to REDD+ principles and safeguards in projects touching on the forests, including measures to mitigate impacts of drivers of deforestation and forest degradation in land use sectors. The EIA process provides for public display of draft EIA report as well as public review. This process strengthens stakeholder participation and public access to information by concerned people and other stakeholders. It also provides for the establishment of a public registry for all EIAs to enhance transparency and accountability.

The main gaps identified in the EIA process, include:

- a) No clear sectoral guidelines on criteria and indicators or elaborated parameters for assessing ecosystem values in EIAs for mining/quarrying rights and other land use sectors activities that impact on forests;
- b) Lack of public access to EIA documents, measures to ensure that mitigation measures have been put in place, etc. approved EIAs and Environmental Impact Statement;
- c) No stakeholder participation in compliance monitoring of the environmental management plan; and
- d) Need to address processes to ensure transparency, independence and information sharing

The EIA Act is under-going review. In the draft revision document, provisions have been made for the conduct of strategic environmental assessment of projects. Also, more stringent measures have been imposed on proponents. For example, the area of forest likely to be impacted requires a mandatory study demonstrating how the impacts would be substantially reduced and addressed. The Act is REDD+ smart to a very significant extent.

#### **2.5.1.8 National Policy on Environment, 1999**

In response to the various environmental issues, Nigeria developed several sectoral policies on environment with strategies and framework of actions. The National Policy on Environment defines the framework for environmental governance in the country. The policy identifies key sectors requiring integration of environmental concerns and sustainability with development. The goal of the policy is to achieve sustainable development and seeks in particular to:

- a) Enhance the quality of the environment;
- b) Promote the sustainable use of natural resources;
- c) Restore and maintain the ecosystem and ecological processes and preserve biodiversity;
- d) Raise public awareness and promote understanding of linkages between environment and development; and

- e) Cooperate with government bodies and other countries and international organizations on environmental matters.

The policy elaborates on issues of cross-sectoral coordination and strategies. The full content of the Warsaw Framework and some other aspects of the Cancun Safeguards which were not in issue in 1999 should be addressed when the opportunity for a review comes up. The policy supports and promotes the implementation of REDD+ and it is highly REDD+ smart.

#### **2.5.1.9 National Policy on Climate Change, 2012**

The strategic goal of the Climate Change policy is to foster low-carbon, high growth economic development and build a climate resilient society through the attainment of the following objectives:

- a) Implement mitigation measures that will promote low carbon as well as sustainable and high economic growth;
- b) Enhance national capacity to adapt to climate change;
- c) Raise climate change related science, technology, research, and development to a new level that enables the country to better participate in international scientific and technological cooperation on climate change;
- d) Significantly increase public awareness and involve private sector participation in addressing the challenges of climate change; and
- e) Strengthen national institutions and mechanisms (policy, legislative and economic) to establish a suitable and functional framework for climate change governance.

The policy elaborates on adaptation and mitigation programmes and actions in key sectors including energy, agriculture, water, transport and human settlement. On the forestry and land use sector, the policy direction is the promotion of sustainable forestry and land use that are able to respond to the challenges of climate change. The policy elaborates the need for a strategy to develop and implement a Forestry Development Programme within the context of an Integrated Land Use Planning framework for sustainability including the promotion of ecosystems integrity and environmental goods and services as well as carbon capture. The policy advocates the development and implementation of forestry development in the following activity areas:

- (i) Increase forest cover through afforestation, reforestation and prevention of deforestation.
- (ii) Ensure the enforcement of forestry laws and regulations;
- (iii) Enhance carbon density of plot and landscape levels through rehabilitation of degraded areas and increased tree planting activities, and promotion of agroforestry;
- (iv) Encourage sustainable forest management for integrated vulnerability reduction;
- (v) Adopt fiscal and regulatory measures towards reducing wood utilization particularly in construction and charcoal production;
- (vi) Improve governance in forestry resource;
- (vii) Ensure the sustainable use of forest resources to contribute to the livelihood of the rural communities as they adapt to climate change; and
- (viii) Promote sustainable forestry, that will enable Nigeria benefit maximally from the potential of REDD+ and at the same time adequately protect individuals and communities whose traditional forest based incomes would be impacted, through:
  - 1. The use of fiscal and regulatory tools to achieve greater protection of forests; and initiating a change in current human activities towards reforestation of land to increase the terrestrial carbon sink;

2. Maintaining a dynamic international relationship that helps to promote REDD+ activities;
3. Forestry programmes that are sensitive to the needs of the local communities and particularly to their land rights. In particular, ensure “voice and choice” in REDD+ design and implementation for local communities;
4. Collect and integrate information and fill data gaps for national REDD+ opportunities and scoping;
5. Engaging effectively those who depend on forests or deforestation and forest degradation;
6. Protecting existing forests and promoting the use of non-forested land for agriculture; and
7. Promoting low-impact logging and sustainable forest management.

In the elaboration of the policy, there was no specific reference to REDD+ safeguards and Warsaw Framework as these two instruments were not developed at the time that the Climate Change Policy was approved. However, within the context of REDD+ implementation, the policy strategies/activities contain the essential REDD+ elements across the various relevant sectors. Overall, the Climate change policy is REDD+ smart.

#### ***2.5.1.10 The Green Alternative Agricultural Promotion Policy, 2016-2020***

Agriculture is a significant driver of deforestation and forest degradation in Nigeria, both at the level of small-holder farmers and large scale production. Agricultural initiatives and programmes traditionally result in significant incursion into the forestry frontiers in meeting the demand for land. The Green Alternative Agricultural Promotion Policy (APP) aims at solving the core issues at the heart of limited food production and delivery of quality standards for the country’s food production value chain as well as increasing export earnings through the involvement of and partnership building among all key stakeholders. It builds on the successes of the Agriculture Transformation Agenda (2011–2015). The policy thrust of APP includes focusing policy instruments on the sustainability of the use of natural resources (land and soil, water and ecosystems) with the future generation in mind while increasing agricultural production, marketing and other human activities in the agricultural sector. The policy is also based on inclusiveness and participation of all Key stakeholders. The policy thrust promotes climate smart agriculture through the following strategies:

- i. Increasing public awareness on climate smart agriculture;
- ii. Improving management of land, water, soil and other natural resources;
- iii. Strengthening of Institutional linkages and partnerships for ensuring climate smart agricultural governance, policies, legislations and financial mechanisms;
- iv. Conducting Environmental impact assessment on major agricultural projects;
- v. Promoting the use of renewable energy with the involvement of private sector;
- vi. Government facilitating the production and use of soil map to improve land use and management practices; and
- vii. Government promoting the increased adoption of global best practices in handling climate change, including the aspects of adaptation, mitigation and carbon credit.

Overall, the APP is REDD+ smart despite minor gaps.

#### ***2.5.1.11 National Biodiversity Strategy and Action Plan, 2016-2020***

Nigeria has developed the NBSAP 2016–2020, to guide the conservation and sustainable utilization of biodiversity, access to genetic resources and the fair and equitable sharing of the benefits arising from their utilization. NBSAP provides information on biodiversity and their threats and analyses institutional

and legal frameworks that govern biodiversity issues in Nigeria. It makes direct references to deforestation, forest degradation and conservation of biodiversity. As such, it covers the same land areas considered in the REDD+ Strategy – National Parks, Forest Reserves, Community Forests, Open Areas, Agricultural lands (for agro-biodiversity), Wetlands and other aquatic ecosystems.

NBSAP provides sectoral actions for mainstreaming biodiversity into national development, poverty reduction and climate change activities. It also elaborates on programme and actions for the conservation of Nigeria's biological diversity and its sustainable use by integrating biodiversity considerations into national planning, policy and decision-making processes. NBSAP provides frameworks for addressing –

- a) Biodiversity conservation;
- b) Sustainable use of biological resources;
- c) Equitable sharing of benefits arising from the utilization of biological resources;
- d) Conservation of agro- biodiversity;
- e) Biosafety; and
- f) Biodiversity-industry interface.

These are aimed at improving the quality of the biological ecosystems and the positive role in carbon cycle and global climate change phenomena. NBSAP is REDD+ smart.

#### **2.5.1.12 National Renewable Energy and Energy Efficiency Policy (NREEEP), 2015**

The National Renewable Energy and Energy Efficiency Policy (NREEEP) was approved by the Federal Executive Council for the Electricity Sector on 20th April, 2015. The policy is aimed at driving the development of electricity generation from biomass through the implementation of the following national strategies which are REDD+ smart:

- a) Effectively harness biomass resources and integrate them with other energy resources for electricity generation;
- b) Promote the use of efficient biomass conversion technologies;
- c) Encourage the use of waste wood as a source of electricity in the nation's energy mix; and
- d) Intensification of efforts to increase the percentage of land mass covered by forests in the country.

Government also has a deliberate policy of promoting the use of clean stoves that are fuelwood efficient. Although the NREEEP encourages the use of biomass as biofuel, the policy implementation strategies if sustainably managed, monitored, reported and verified may also increase the carbon stock and could be eligible as REDD+ interventions.

## **2.5.2 Cross River State**

### **2.5.2.1 The Cross River State Policy on Forest Moratorium, 2008**

In 2008 the CRS government, based on her concern over the high rate of deforestation and commitment to reconciling development and conservation objectives, placed a moratorium on logging in the state; this policy is still in force. It resulted in the cancellation of all logging concessions and ban on logging in all forest types (Forest Reserves, Community Forests and open areas). An Anti-Deforestation Task Force was set up with responsibility for compliance monitoring and enforcement of the moratorium. This is



addressed in Chapter 4. After about eight years and with the recent disbandment of the first Task Force and another put in place in 2016, the CRS government should now to evaluate and review the policy. As a short-term measure, the policy on forest moratorium was REDD+ Smart but several challenges have resulted from the continuation of the policy. For example, illegal logging has proliferated under the moratorium and community sense of alienation from forest decision-making and beneficiation has grown.

### **2.5.2.2 Cross River State Forestry Commission Law, 2010**

The purpose for the Cross River State Forestry Commission Law, 2010 is to make provisions for the establishment of the State Forestry Commission; and for the purposes of providing sustainable management of the forest and wild life resources, preservation and protection of the ecosystem in Cross River State and other matters connected therewith. Most of the provisions on forestry and wildlife resources promote and support REDD+ activities, except the provisions on de-reservation. The State Governor has the powers to re-allocate land previously designated for forest conservation to other land uses. This could potentially displace emissions and has inherent problems associated with risk of reversal. Although, the Governor has the power to de-reserve, a clause in section 41, para 2 of the CRSFC Law of 2010 provides for suspension of the Governors' power to de-reserve if there is an over-riding public interest. A recent example of this is the reversal of the revocation order on the acquisition of 10 kms on either side of the proposed super highway in CRS.

The CRSFC Law provides for the establishment of two dedicated financial mechanisms for sustainable management of forests with identified sources of funding, and if operationalized could be sustainable sources for carbon funding, including REDD+ implementation. These are:

- a) Forestry Reserve Fund (section. 19); and
- b) Forest Trust Fund (FTF) (section. 20) "To fund regeneration in depleted areas and general sustenance of the forest".

It also makes provision for the establishment of eight (8) departments and other units within the State Forestry Commission (FC) (including a Carbon Credit Unit and any other unit as shall be deemed necessary from time to time). The law also promotes stakeholders engagement in the sustainable management of CRS's forests, the protection, control and management of forest reserves by the Commission in collaboration with key stakeholders from communities, civil society, private sector and Community Based Forest Management Association(s) or other relevant Government Agencies. It encourages afforestation programmes which should ensure a zero net loss and a net gain of biodiversity with respect to species composition, habitat structure, ecosystem function and people use and cultural values.

In the case of royalties from community forest areas, the sharing formula is 30:70 in favour of host communities while in forest reserves, it is 50:50 ratio between the host communities and CRS Government. These are the major sources of internally generated revenue for host communities and government (these sources have stopped since the moratorium on timber logging in 2008).

Two critical tools for sustainable forest management are provided for in the CRSFC Law. These are:

- a) Forest Sector Strategy (section.51) which provides that the "conservation and sustainable management of forest resources and livelihood for the communities in the State shall be based on the forest sector strategy"; and
- b) Land and Resource Use Plan and Management Plan (section.52).

However, the Forest Sector Strategy and the Land Resource Use and Management Plans have not yet been operationalized or realized. The reasons for the lack of enforcement of the Forest Law are as follows;

- The moratorium changed the conditions for implementation of the Forest Law, as the Forestry Commission did not consider finalizing the Draft CRS Forest Policy, (see below) during the ban. By virtue of the enforcement of the moratorium in CRS, the CRSFC Law is technically suspended. However, CRSFC has the mandate to manage the forest resources of CRS as clearly stated in the CRSFC Law 2010 until otherwise provided for.
- The creation of a multiple and mutually independent institutions; the Forestry Commission and the Anti Deforestation Task Force) created confusing in the forest governance system. As well as between the Ministry of Climate Change and Forestry (MCCF) who also have the mandate for forest management and planning in CRS. The MCCF was created by executive fiat in late 2015.
- Foresters felt distanced and apathetic after the ban on logging and there has always been lack of adequate capacity.

The Commission also has powers with the approval of the State Governor to make regulations for the performance of its functions. The powers could be exercised judiciously and transparently and used to facilitate the implementation of REDD+ activities and adherence to the Cancun safeguards and Warsaw Framework Agreement. Overall, the CRSFC Law is highly REDD+ smart.

#### **2.5.2.3 Draft CRS Forest Policy, 2011**

The purpose of the Cross River State Forest Policy, 2011 is to encourage and support ecological restoration of indigenous species and foster the re-direction of development resources. It went through one stakeholder validation workshop but comments from that workshop are yet to be incorporated into the final document. The draft policy is REDD+ smart as it addresses issues of deforestation and forest degradation, forest conservation, biodiversity conservation and sustainable forest management with a view to extending the forest cover of the State. However, there is need to expeditiously approve and implement the policy. The draft policy is still going through the process of validation.

#### **2.5.2.4 CRS Draft Agricultural Policy, 2014-2018**

CRS has a draft Agricultural Policy to “*provide an enabling environment and service towards sufficiency in agricultural production guaranteeing for security and the wholesome development of resources*”. The policy elaborates on framework strategies for the development of the various sub-sectors of agriculture and products. The policy has some Climate Smart Agriculture provisions. There are provisions for sustainable land management practices in agricultural sector planning and implementation, community land use management plan, synergy/cross sectoral collaboration with other land use sectors including forestry and other MDAs, up-scaling agroforestry practices, and prevention of biodiversity loss. The main problems stem from the fact that there are no clear coordination in the land use sectors for integrated land use management. Each agency and institution operates in silos which hampers collective attainment of the policy goals.

Given the importance of agriculture and the policy and legal framework around agriculture development for the REDD+ Strategy, there are a number of key actions that the CRS government can take to ensure take into account the impact of commercial and subsistence agriculture in achieving the goals of the

REDD+ CRS Strategy and decrease encroachment of agricultural fields into the forest frontiers. These include aligning the goals of the agriculture and forest policies, both at State and Federal level.

Given the encroachment, as noted in the previous section and encroachments into CR National Park, the agricultural policy of Cross River State could therefore be a threat to the realization of REDD+ objectives if the forest estates are converted to agricultural plantations without provisions climate smart agriculture, REDD+, offset planting and operationalization of integrated land use planning.

#### **2.5.2.5 CRS Institutional Structure for Forestry, Climate Change and Environment**

##### *Cross River State Forestry Commission*

The apex institution for forestry governance in CRS is the Cross River State Forestry Commission (CRSFC). The Chairman of the CRSFC reports directly to the Governor of the State on matters relating to forest management. An earlier statutory enactment, the Cross River State Forestry Commission Law of 2010, established the Cross River State Forestry Commission with responsibilities for the sustainable management of forest and wildlife resources, preservation and protection of ecosystems in Cross River State and others connected therewith. It is supervised by a Chairman and commissioners appointed for a four-year term on full time basis.

The REDD+ Unit which is responsible for coordinating and driving the REDD+ process is located in the CRSFC with the CRS State REDD+ Committee as the apex advisory body for the REDD+ Unit. The State Planning Commission working with MDAs in the Environment Cluster has recently streamlined the mandates and organogram of respective MDAs within the Environment cluster.

Key outcomes of a meeting held in Calabar on 8th, November, 2017 specifies the need for a strong synergy between CRSFC and Ministry of Climate Change & Forestry (MCCF) and with other MDAs in the Environment Cluster comprising especially the Ministry of Environment, Department of Biodiversity, Waste Management and ministries in the Infrastructure Cluster in order to make meaningful progress in climate change mitigation and adaptation in the State. From the streamlined organograms and clarified mandates of CRSFC and MCCF, the REDD+ Unit remains in CRSFC. This recent development corrects earlier observations witnessed during field visits leading to the preparation of this strategy such as no proper synergy between the activities of the MCCF and that of the Forestry Commission. Going forward, it is believed that the streamlined organograms and mandates of respective MDAs will eliminate areas of conflicts over overlaps in mandate of MDAs where these have existed before

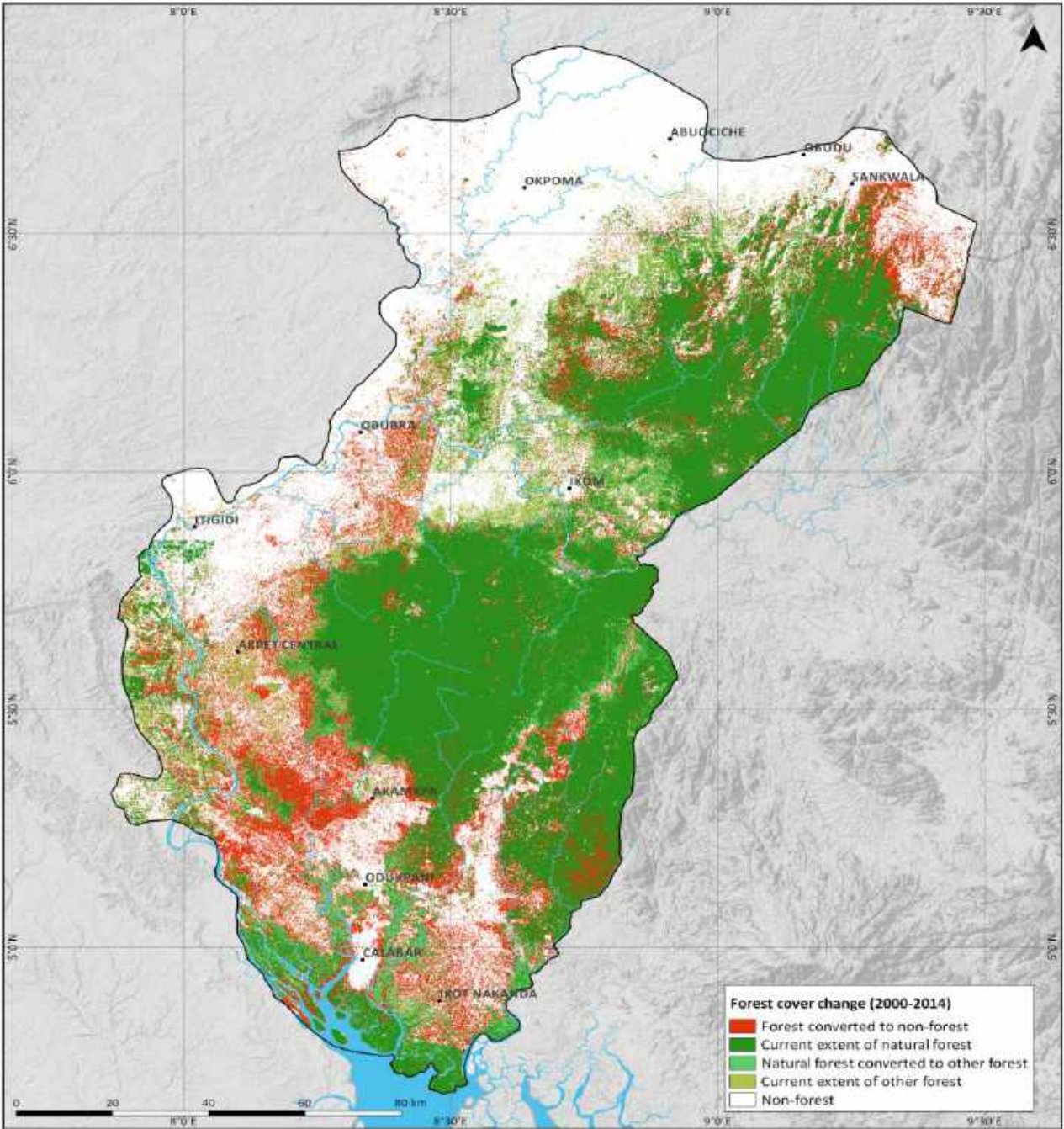
##### *CRS Ministry of Environment (MEnv)*

MEnv has several departments, including: (i) Biodiversity Conservation; and (ii) Climate Change Departments. The synergy between the MEnv and MCCF needs to be strengthened. It is expected that the outcome of the report of the State Planning Commission on the mandates of MDAs will streamline the relationship between the MCCF and MEnv. Synergy between the two agencies in the land use sector needs to be strengthened and advanced towards a coordinated and holistic approach to land use and climate change in the State.

## **CHAPTER 3: DRIVERS OF DEFORESTATION AND FOREST DEGRADATION**

### **3.1 Forest Cover**

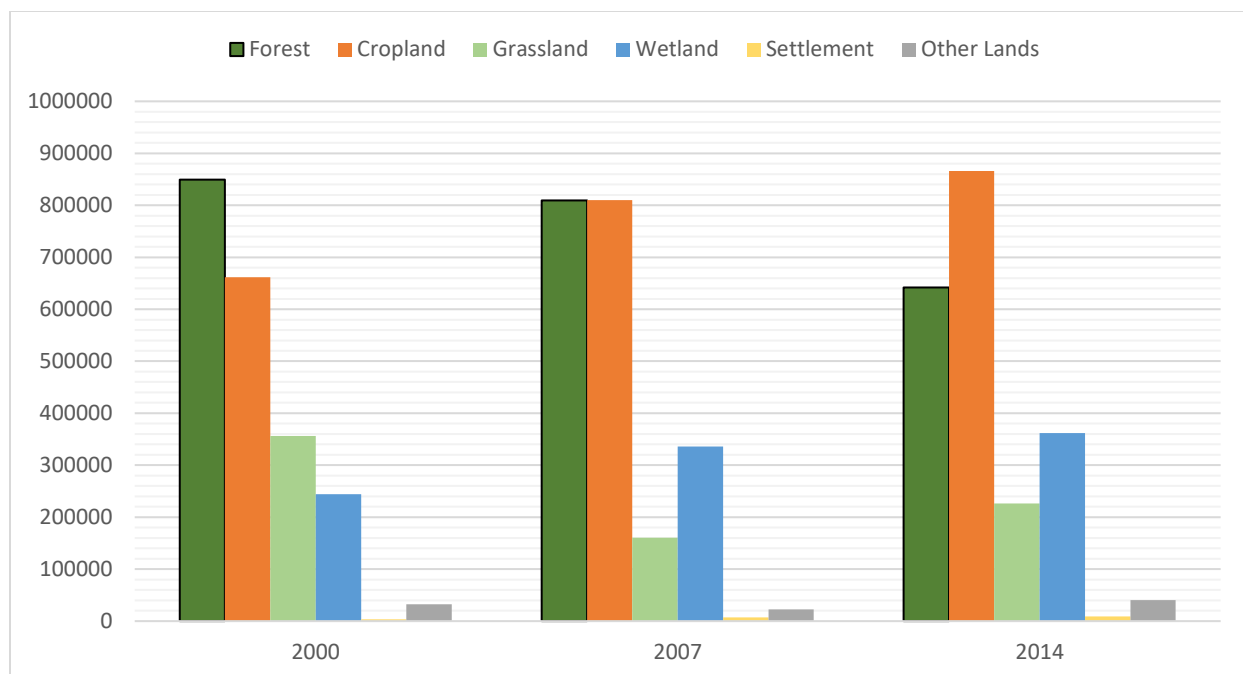
Figure 7 shows forest cover in Cross River State decreasing from 849,485 hectares in 2000 to 809,578 hectares in 2007 and 642,195 hectares in 2014. Figure 8 shows this change over various land cover types.



**Data sources:**

*Natural forest mask:* NASRDA and FAO on behalf of the UN-REDD Programme (2015) Study on the Drivers of Deforestation and Forest Degradation in Cross River State. Based on the 13 land cover classes derived from satellite imagery; Natural forest is a combination of the 'Montane forest', 'Tropical High Forest', 'Open forest' and 'Mangrove' classes; Other forest is a combination of the 'oil palm', 'rubber' and 'Gmelina' classes; the non-forest class is a combination of the farmland, grazing field, swamp, settlement and derived savannah land cover classes in the 13-class dataset.

**Figure 7:** Forest cover change in Cross River State between 2000 and 2014 (UN-REDD, 2017)



**Figure 8:** Land use area coverage based on IPCC classes in CRS for the years 2000, 2007 and 2014

Source: UN-REDD, 2015.

As of 2016, there are 10 deforestation hotspots in Cross River State spread across six Local Government Areas (LGAs) with a combined total area of 28,015.88 hectares all mostly caused by itinerant subsistence agriculture, commercial agriculture, new settlements, illegal logging and fuelwood harvesting (Table 4). The drivers of deforestation Study projected that forest cover in CRS is likely to decline to 550,000 hectares by 2040, if no preventive measures are put in place. There is currently no latest data at both Federal and State levels to estimate forest cover change to attribute loss of forest to each of the key drivers.

The largest deforested area occurs in Akamkpa Local Government Area (LGA) in three locations (north and south) where shifting cultivation is rampant. With a planting space of 5m x 5m, the total deforestation hotspot area of 28,015.88 hectare would take about 11,206,352 seedlings, i.e., planting about 400 seedlings per hectare.

**Table 4:** Deforestation hotspots in Cross River State

#	Local Government Area	Name of Community	Area in Hectares
1	Akamkpa	Njagachang	5,853.69
2	Akamkpa	Mfamosing	2,625.63
3	Akamkpa	Old Ekuri	1,808.42
4	Akamkpa	New Ekuri	1,451.03
5	Akpabuyo	Esuk Idebe	193.05
6	Boki	Buanchor	615.86
7	Boki	Buanchor	1,000.32
8	Ikom	Ikom	3,611.89
9	Obubra	Edondon	6,396.45

10	Yakurr	Agoi/Mkpani	4,459.52
<b>Total</b>	<b>6 Local Government Areas</b>	<b>10 Communities</b>	<b>28,015.88</b>

Source: Forest Monitoring Unit, GIS and Mapping Unit, CRSFC, 2016.

## 3.2 Drivers of Deforestation and Forest Degradation

A distinction is often made between proximate/direct causes and underlying/indirect causes of deforestation and forest degradation (Geist and Lambin, 2001; Millennium Ecosystem Assessment, 2005; Kissinger *et al.*, 2012). Proximate causes are human activities or immediate actions that directly impact forest cover and loss of carbon. These causes can be grouped into categories such as agricultural expansion, wood-based energy demand, unsustainable timber harvesting, infrastructural development, and oil & solid mineral exploration. Underlying causes are demographic, economic, technological, policy & institutional and cultural causes that are often distant from their area of impact (Geist and Lambin, 2001).

The agents of deforestation and degradation in Nigeria include the logging and timber industry, subsistence and commercial farmers, national and international investors and agroindustry. These underpin the proximate causes and either operate at the local level or have an indirect impact from the national or global level. They are related to international (i.e., markets, commodity prices), national (i.e., population growth, domestic markets, national and state policies, governance) and local circumstances (i.e., change in household behaviour) (Geist and Lambin, 2002; Obersteiner *et al.*, 2009).

## 3.3 Proximate Drivers

The proximate drivers of deforestation and forest degradation have been identified as follows in order of priority (Ogunwale, 2015; UN-REDD 2015; 2016a): Figure 9 shows changes in land cover over the period 2000-2014.

- Agricultural expansion (subsistence and commercial);
- Logging (unregulated);
- Fuelwood consumption (firewood and charcoal);
- Infrastructure development (power lines, roads and settlements); and
- Oil/solid mineral exploration and quarrying.

### 3.3.1 Agricultural expansion (subsistence, small scale and commercial) and Tree Plantations

Agricultural expansion or extensification is the main driver of forest loss in Cross River State and Nigeria characterized by shifting subsistence cultivation by smallholder farmers (slash-and-burn also known as bush fallowing) and large -scale conversion of forest lands to commercial agricultural plantations: e.g., – palm oil, pineapples, other commercial crops such as cocoa, rubber, etc. The study on deforestation and forest degradation in Cross River State estimated that CRS lost 77,148 hectares of forestland to cropland between 2000 and 2007, and 125,355 hectares of forestland to cropland between 2007 and 2014. The study did not indicate if areas had been regenerated after conversion, for example to secondary forest. Within the broad category of agriculture, farmland (land for crop cultivation, not including tree crops and grazing fields) forms a significant area, accounting for 25.22% of the State’s area in 2000 and increasing to 29.75% in 2014. Oil palm makes up a much smaller area, though this has doubled in the same period, going from 1.03% in 2000 to 2.25% in 2014. In contrast, other agricultural land types are estimated to have decreased, such as rubber plantations and grazing fields.

It is not possible to completely distinguish between the extent of deforestation from commercial and small scale or subsistence farming. Smallholder, subsistence farmers grow crops such as cassava, yams and plantain, and practice both shifting and permanent cultivation (UN-REDD 2015).

Although shown in the same category of land use change, the expansion of smallholder subsistence agriculture and the expansion of commercial plantations are attributed to different drivers, associated with different agents. However, there are also some linkages between the two drivers; for example, stakeholders in Cross River State identified a potential risk from the continued expansion of large-scale, commercial plantations for cash crops that may result in smallholder farmers losing access to land and thus expanding agriculture into other forest areas (NSWG, 2016a).

These include the risk that the increased profitability of these land uses may encourage further expansion into forests, especially in areas where forests are not under protection and may be legally cleared for agriculture (NSWG, 2016a). Production improvements are only effective in reducing deforestation where they are implemented hand-in-hand with improved land-use planning and protection measures.

Data on the conversion of forests to agriculture (including cropland and plantations) between 2000 and 2014 shows that this has predominantly occurred in and around forest reserves and the Cross River National Park, particularly the southern Oban Division of the Park. Although it is illegal for forest reserves and national parks to be converted to other land uses, it is legal for farmers to clear forest in community lands for agriculture. The expansion of swamps and wetlands evident in the spatial data over the past 15 years may also be related to the growth of rice-farming in the State.

Shifting cultivation is practiced and farmers in most of the communities visited, typically clearing land, burning plant material, then planting and harvesting crops, with the land lying fallow for 2-4 years. Farmers then clear new plots of land, while vegetation re-grows on the old plots, which is later burned again. Shifting cultivation is having negative impacts on the forests in Cross River State, with population increases

As in other parts of Nigeria, smallholder farmers also continue to face many challenges, including poor access to modern agricultural inputs and credit, poor infrastructure, inadequate access to markets, insecure land tenure and environmental degradation, and inadequate research and extension services (UN-REDD 2016a). Rapid population growth and land shortage, however, have drastically reduced the amount of arable land available to smallholder farmers, reducing fallow periods considerably and forcing farmers to continually engage in slash-and-burn or shifting cultivation thus continually causing deforestation (Terdo and Adekola, 2014). Shifting cultivation is viable in areas of low population density and low population growth, but becomes no longer viable when population increases and soil fertility decreases over time.

In recent years, focus has shifted to other high-value crops such as oil palm and pineapple, which may offer a higher return on land and labour. Oil palm is a traditional crop in West Africa, and from the early 1950s till mid-1960s, Nigeria was the largest producer of crude palm oil in the world, with a market share of 43%. Since then, palm oil production has steadily declined and the country is now a net importer (Omorogiwa, Zivkovic and Ademoh 2014, in UN-REDD, 2016).

In the last decade, the oil palm industry has been revitalised in Cross River State, with international investments and partnerships with government helping to re-establish former plantations and expand the area under oil palm. Land for oil palm plantations have been acquired by Nigerian firms such as Sea Agriculture, by a joint venture between the state oil company Nigerian National Petroleum Corporation



(NNPC) and the Brazilian energy company Petrobras (for biodiesel production), and by Wilmar (headquartered in Singapore), which purchased the Obasanjo Farms estates in 2012 (Schoneveld 2014). As noted by Schoneveld (2014), most new plantations have been established along the Macdonald Construction Company (MCC) Road that divides Cross River National Park in the South; due to comparatively high rainfall intensity and low rainfall variability, this area is considered especially suitable for oil palm cultivation.

With an investment of more than US\$500 million and plantations of 50,000 ha, the NNPC-Petrobras venture is now the largest oil palm venture in Nigeria, and milling and refinery facilities are under development. The investment is expected to create jobs and contribute significantly to the Cross River State economy (Nwosu and Holzlohner 2016, in UN-REDD 2016a). The partnership intends to increase the area under oil palm to a million hectares, so represents a potential driver of deforestation as well as an opportunity to enhance rural livelihoods and promote oil palm agroforestry.

Plantations of commercial cash-crops are also playing an increasingly important role in the economy of Cross River State. In previous decades, public and private investments have been made in the establishment of gmelina (*Gmelina arborea*, a pulpwood species) and rubber plantations. The area under gmelina increased by 7% during 1991-2001 (Flasse Consulting, 2002, in Oyebo et al. 2010). During 2000-2014 there has been conversion of natural forests to non-forest and other forests in and around plantation concession areas in the State. These are concentrated in the south of Cross River State, such as in the corridor and other areas to the south of the National Park and in Akampka.

### 3.3.2 Fuelwood consumption (firewood and charcoal)

Fuelwood (firewood and charcoal) constitutes about 70.64% of the energy mix as a principal source of fuel for cooking in Nigeria (FMEnv, 2014)<sup>9</sup> (Table 5). This situation is replicable across the country and CRS is no exception. Fuelwood is mostly accessed from open areas, community forests and forest reserves. The easy access to wood biomass fuel by producers, its relative abundance and affordability, coupled with erratic supply of other alternative energy sources and general low public awareness of the alternative sources, has led to increased demand for wood biomass fuel especially in face of a growing population, thus contributing to deforestation and forest degradation. Firewood is mostly consumed in rural areas while charcoal is predominantly consumed in peri-urban and urban areas as the main fuel for cooking at roadside food outlets, in formal restaurants and at household level.

**Table 5:** Main sources of fuel for cooking in Nigeria

Source	Percentage
Firewood	69.8
Kerosene	26.6
Gas	1.11
Charcoal	0.84
Electricity	0.52
Crop residual/saw dust	0.09

<sup>9</sup> Federal Ministry of Environment (FMEnv). Main sources of fuel for cooking in Nigeria. Quoted from the National Bureau of Statistics, 2014, Nigeria.

Animal waste	0.07
Others	0.84
<b>Total</b>	<b>100.0</b>

*Source: FMEnv, 2014, quoted from National Bureau of Statistics.*

The unregulated nature of the firewood and charcoal industry poses a great threat to CRS's forests through deforestation and forest degradation. The majority of the population is largely dependent on fuelwood as a main source of energy and alternative sources are largely inaccessible to the majority of the population. Regulatory actions will need to ensure that there are readily available, affordable and cultural appropriate alternatives.

### **3.3.3 Unsustainable timber harvesting**

There are currently no data in the public domain on the extent of logging in terms of hectareage, volumes of timber extracted (m<sup>3</sup>) and locations be it through legal timber concessions, permitted legal small scale logging or illegal timber harvesting. Timber is extracted and used for a variety of purposes including construction, furniture manufacturing, packaging materials, joinery and curios. Unfortunately, data on the annual loss/degradation of forests due to logging is not available both at Federal and CRS levels. This is mainly due to inadequate capacities at both levels to monitor timber off-takes in licensed areas and illegal off-takes outside licensed areas.

Background studies and stakeholder consultation for the Strategy indicate that Illegal logging is currently taking place in Protected Areas (PAs) such as Forest Reserves (FRs), in Community Forests (CFs) and in the buffer areas to NPs (UN-REDD, 2016a). These areas are critical to achieving REDD+ objectives and are supposed to be ultimately protected according to law and in the case of CFs, through community bye-laws. The illegal logging in these PAs is mainly driven by the forest moratorium instituted in 2008 in CRS which was put in place to effectively control both legal and illegal logging. Despite its initial positive impacts, it has largely alienated Cross River State from realizing benefits from forest resources in their precincts. While CRS NP has a programme to support sustainable harvesting in the buffer zones of the CRS NP and development of social amenities for surrounding communities, the programme is not being implemented because of the standing moratorium on timber harvesting (UN-REDD, 2016a).

Valuation of timber and other forest resources to determine both the economic value and value of ecosystem services is important in understanding trade-offs and making informed decisions on how best to effectively manage the forest resources, including pricing of goods and services. Forest ecosystem goods and services, and the natural capital stocks that produce them, make significant direct and indirect contributions to the CRS and Nigerian economies as well as human welfare through direct forest goods, environmental services and sociocultural benefits.

### **3.3.4 Infrastructure Development (industry, power lines, roads, dams and settlements)**

Expansion of infrastructure in Nigeria/CRS (e.g., oil and mining, agricultural development and irrigation, roads, electricity grids, settlements and social amenities) is inevitable in the long term, given the country's endowment with natural resources, the need to advance economic development and reduce poverty and diversify the economy. This is a common goal of both the Federal and CRS Governments. This scenario,

while needed for development and poverty reduction, if not well-vetted, can become a source of carbon emissions through deforestation and forest degradation and/or be sources of social conflict.

Prevailing Grievance Redress Mechanisms (GRM) are inadequate to protect local communities when major infrastructural developments are planned, e.g., the planned superhighway through the CRS NP and community lands.. The REDD+ initiative presents an excellent opportunity to influence the greening of existing and planned infrastructural developments and ensure they safeguard both environmental objectives and local livelihoods while contributing to the national/state economies.

The United Cement Company of Nigeria commissioned its UNICEM cement factory in 2009 at Mfamosing in Akamkpa Local Government Area (L.G.A) on a land area of about 2,000 hectares. Also, the road from Calabar to Ekang passing through Ikot Offiong, Mfamosing, Oban and Nyaje in Akamkpa measuring about 120 kilometers was expanded and reconstructed within 2007 and 2014 period. All these commercial developments have led to forest conversion.

In its effort to accelerate economic development, the Cross River State Government has laid out an ambitious infrastructure development strategy to be concluded by end of the year through its proposed 30-year Growth and Development Strategy which includes development of a deep sea port and a super highway linking the state to the north. The proposed Cross River Super Highway is 260 kilometres of high-tech road, complete with anti-slip features, speed cameras and internet connectivity all the way from Calabar to Benue State, meant to open new markets for all goods that are expected to come through the proposed Calabar deep sea port<sup>10</sup>. With an estimated 99 km of the superhighway expected to pass through or close to the National Parks<sup>11</sup> and through community forests, this would cause direct forest loss of 990 km<sup>2</sup> (990,000 ha).

Proposed major infrastructural developments under the CRS 30-Year Growth and Development Strategy.  
(Source: UN-REDD, 2017).

### 3.3.5 Oil/solid mineral exploration and quarrying

Studies on social and environmental impacts of mining in Nigeria, including coal mining and quarrying, reveal effects on forests and forest livelihoods and state direct impacts of the industries to include, displacement of forests and customary land uses in the sites, water pollution, forest species extinctions, mammal species extinctions such as tortoise and blindness among the human population in Enugu (Ogbonna *et al.*, 2014). For instance, The Niger Delta is characterized by contaminated streams and rivers, forest destruction and biodiversity loss and coined as an “ecological wasteland” due to environmentally unsustainable oil production (Kadafa, 2012).

Like the rest of Nigeria, Cross River State is rich in solid minerals, including limestone, baryte, clay, salt, tin, granite basalt, quartzite, kaolin, and feldspar (UN-REDD, 2016a). The state has the highest quality brines found in Nigeria (up to 8.6 percent NaCl) located in Okpoma in Yala Local Government Area (LGA).

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<sup>10</sup> <https://ng.boell.org/super-highway-cross-river-state>

<sup>11</sup> Cross River State Forestry Commission GIS Laboratory: Unpublished.

There are also brines with lower salt concentration in Ikom. In spite of the rich mineral endowments, mining activities at a commercial level is restricted only to limestone, which is found in Akampka, Odukpnai, Ikom, Obubra, Ogoja and Biase. At the moment, there is only one limestone company, the United Cement Company of Nigeria (UNICEM) in Mfamosing community in Akamkpa which mines limestone for cement. There are 41 granite companies with quarries, most of them located in Akamkpa. There are 22 sand/gravel mining associations. There is small scale mining of granite in Akamkpa, Boki, Obudu, Obubra, Yala and Obanliku (UN-REDD, 2016a).

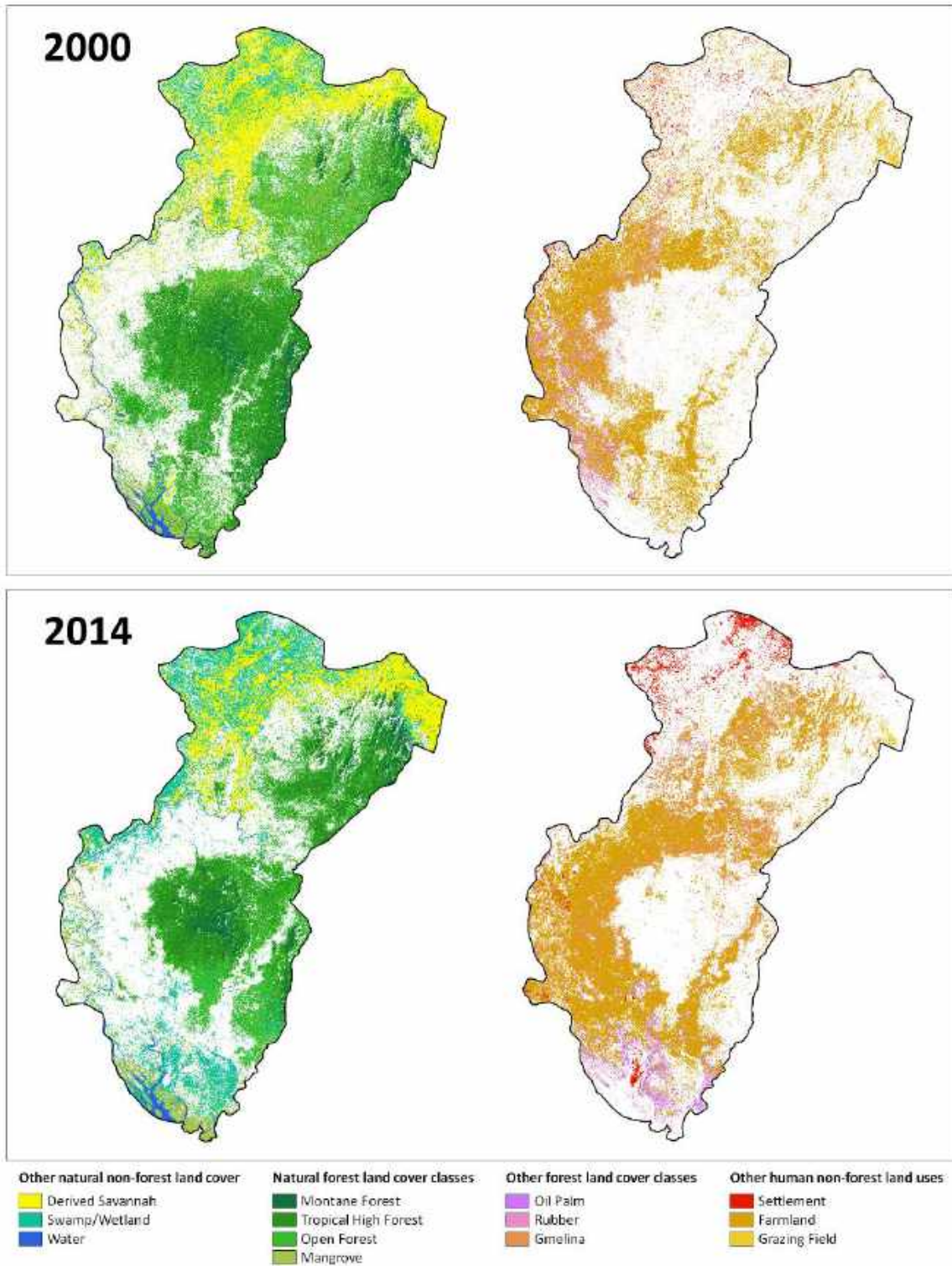
Discussions with stakeholders in Cross River State suggest that mining and quarrying, although often small-scale, is considered an important driver of forest loss and forest degradation for several reasons. As small-scale operations may lack in efficiency, modern technologies and post-mining restoration, they can result in negative social and environmental impacts. For example, there are numerous abandoned mine sites including six abandoned barite mines at Nde, Alese, Okumurutet, Iyametet, Akpet and Ibogo. In addition, as the allocation of land and licenses for mining is controlled at the Federal level, there can be a lack of consultation and oversight of operations at the State level, as well as limited capacity to enforce compliance with regulations and best practice (NSWG 2016b; UN-REDD 2016a).

Mineral deposits in Cross River State are often found deep in forest areas with limited infrastructure, which has formed a key barrier to expansion of the mining industry; ‘removing these barriers without careful planning for sustainability would likely expose the forests to further degradation and deforestation’. Beyond the immediate impact of mining and quarrying on forests, the need to clear land for settlements for mining workers and roads, and the influx of people into mining areas may place additional pressures on forests.

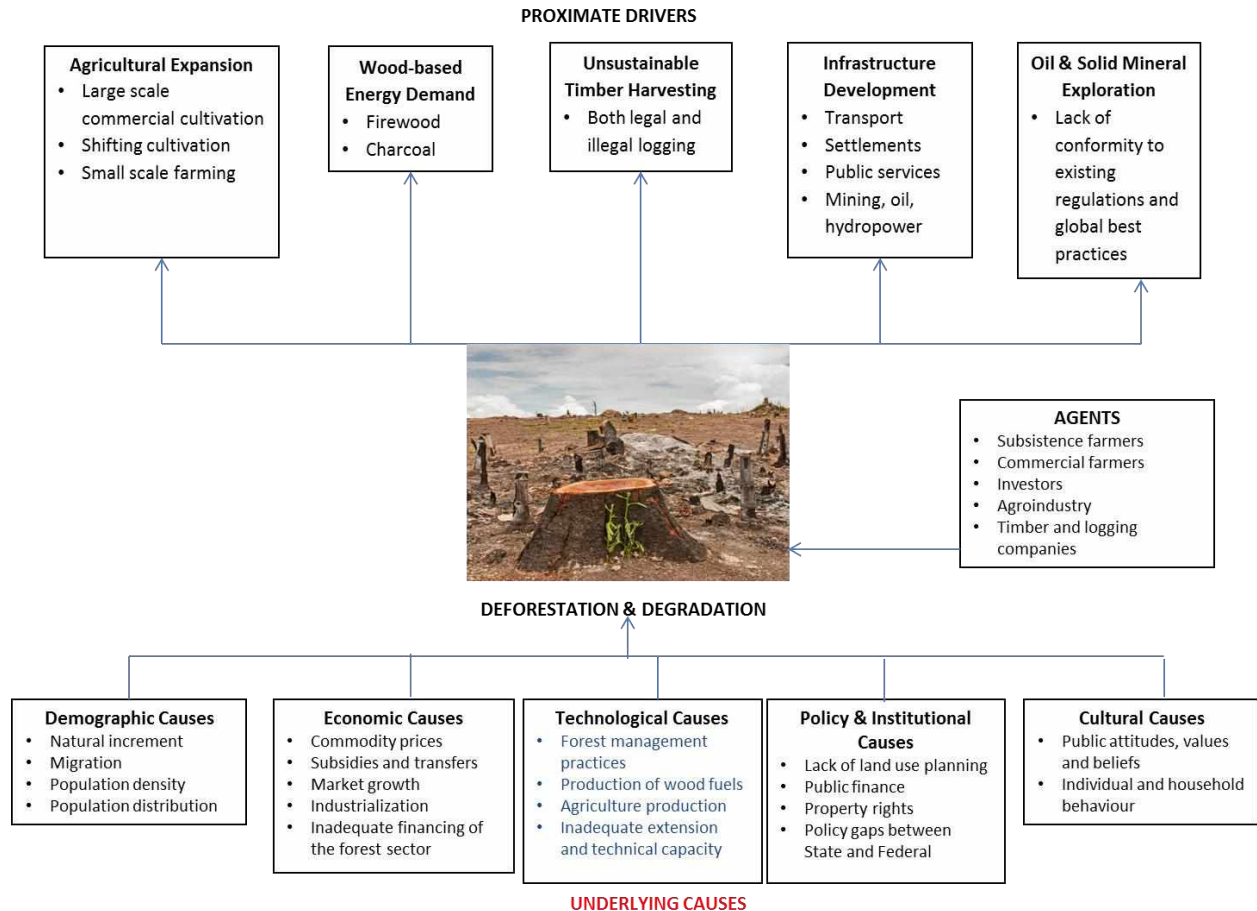
Although CRS does not currently have an oil industry, mining and quarrying are taking place and it may be probable after recent discovery of oil reserves, the State has commenced oil exploration. Employed oil industry and mining labour need areas to settle, cultivate, social amenities – and all these developments largely convert forests in addition to the mining infrastructure themselves – leading to increased emissions through deforestation and forest degradation. The solution is to ensure eco-friendly mining activities or greening the mining industry as a whole.

Through extensive consultations and analytical work, stakeholders prioritized five options to address the driver:

- a) Improving design and operations of oil/solid mineral exploration and quarrying activities to take into account pollution control, social and environmental safeguards through strict enforcement of mining regulations, EIAs and other global best practices;
- b) Putting in place disaster risk reduction and early warning systems to manage pollution from oil/solid mineral exploration to protect critical forest ecosystems such as mangroves;
- c) Enforcing legislation of NPs as no go-areas for solid mineral exploration and quarrying; and
- d) Addressing gaps in the Petroleum Act which include an inadequate framework for social and biodiversity considerations in the petroleum industry, inadequate safeguards considerations and measures to minimize negative impacts.



**Figure 9: Status in land cover across different periods. (UN-REDD, 2017)**



**Figure 10: Proximate drivers, agents and underlying causes in Cross River State (Source: This study)**

### 3.4 Underlying Causes

Underlying causes of deforestation and forest degradation are multi-faceted and complex as these are dynamic and interact in various ways to influence the direct causes. They could be demographic, economic, technological, policy and institutional, and/or cultural (Geist and Lambin, 2002). Figure 10 above shows both proximate and underlying causes of deforestation and forest degradation in Cross River State as well as the barrier to sustainable management of forests.

#### *Demographic causes*

Nigeria's population is growing at a rate of 2.8% per annum (state source) and this places increased demand for fuelwood by households, increased demand for agricultural land, increased demand for timber and non-timber forest products as well as increased probability of bush fires. Mining (oil, solid minerals and quarrying) and other infrastructure developments (e.g., roads, power lines, settlements, etc.) are push factors for in-migration of people to areas near the available social amenities resulting in need for even more social amenities (e.g. health and education) and agricultural land and energy sources all of which lead to forest clearing and carbon emissions. Road construction in particular, has a pervasive

advantage detrimental to forest conservation – it opens up new areas to human settlements, areas that were once inaccessible and protected.

1. Pressure on forests from both commercial and subsistence agriculture will continue to increase as the population grows.
2. The population of Cross River State rose from about 2 million in 1991 to almost 3 million people reported in the 2006 population census, which is an increase of more than 50% in 15 years<sup>12</sup>. The population was projected to reach 5.2 million by 2025 using a constant growth rate of 3%<sup>13</sup>. This will have immense effects on natural resource management including subsistence and commercial agriculture.

#### *Economic causes*

The economic fiscal regime structures of Nigeria/CRS require 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. Market failures such as under-pricing of carbon, biodiversity, water and other ecosystem services generally lead to short-term rent seeking activities such as firewood/charcoal production and sale. Nigeria, like many developing countries, has high poverty levels which force many local communities to over-exploit the nearest and available natural resources for subsistence and income generation.

Poverty is identified as the highly ranked driving force behind the proximate drivers of deforestation and forest degradation. 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. Most forested areas are in rural areas where poverty is rampant and thus forests, due to their proximity and abundance in these areas, become the bread basket with the ultimate result of forest loss and carbon emissions. The existence of high poverty levels and abundant forest cover in CRS puts the state in an economic/social/environmental dilemma.

The CRS government is actively promoting investment opportunities in agriculture to bridge the shortfall in revenues resulting from the Supreme Court judgment of July 2012 ceding the ownership of 76 offshore oil wells to Akwa Ibom State (UN-REDD, 2016a). The new economic development measures include the push for large scale cultivation of oil palm, cassava, cocoa and rice. Others include agro-processing and modernized production of poultry, cattle and fisheries. Any economic development based on further extraction of timber and non-timber forest products is likely to increase pressure on the forests, unless carefully planned with sustainability principles embedded in the growth strategies (UN-REDD, 2016a).

#### *Technological causes*

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

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<sup>12</sup> Joseph G. Ottong, Simon. O. Ering, and Felix. U. Akpan 2010: Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS) 1 (1): 36-42 Scholarlink Research Institute Journals, 2010 [www.jeteraps.scholarlinkresearch.org](http://www.jeteraps.scholarlinkresearch.org)

<sup>13</sup> *ibid*

Charcoal production technology (earth kilns) currently used 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. Use of firewood in open fires is equally energy inefficient. In short, the firewood and charcoal use have low conversion and recovery rates. In addition, the forest areas where the firewood and charcoal are produced, as highlighted earlier under Table 1, are without management plans to guarantee the regeneration required for sustaining the forest as a renewable energy source. The logging industry, which is mostly unregulated, predominantly uses chainsaws instead of fully capitalized sawmills to produce sawn timber, thus resulting in sub-optimal recovery rates and lost revenues.

#### *Policy and institutional causes*

Policy distortions and lack of clear institutional mandates can lead to exacerbated deforestation and forest degradation. There is a challenge of inadequate policy articulation and differences between policy and the complex reality of implementation. Forest management in Nigeria as highlighted in Table 1 across the different forest regimes, is generally weak with inadequate allocation of human and financial resources to the Forestry Departments at both Federal and State levels for carrying out their mandates of forest management and monitoring. The other prominent manifestation of policy inconsistencies is the issuing of oil exploration in the mangrove forest ecosystem which requires to be protected, for example, in the Niger Delta. Overlapping jurisdictions: Roles and responsibilities among different players in forest management ought to be clear. For instance, there is lack of clarity on the roles and responsibilities of the Ministry of Forestry and Climate Change and the Cross River State Forestry Commission in CRS. This might cause apathy, conflicts, confusion and dis-motivation towards REDD+ implementation.

#### *Cultural causes*

African cultural beliefs are ingrained beliefs and they are conflicting at best in contemporary times in the context of forest conservation. First, “forests are God-given and we can use them the way we want”. Second, “forests are our sacred sites, we need to respect them, that is where we bury our ancestors”. Third, “forests are our source of livelihood, we need to protect them”. In that ranking, local communities need to be convinced through effective forest extension services, using their second reasoning as a launch pad to amplify the third reasoning which will take care of their second reasoning. Climate change is real and unless communities are willing to transform, they will always be vulnerable. REDD+ is premised on preventing adversarial phenomena that put human lives at risk (mitigation strategies) to ensure global warming is at check, build their adaptive capacities (adaptive capacity), and ensure their long term resilience (building resilience) to climate change.

### **3.5 Linkages Between the Underlying Causes and Proximate Causes of Deforestation and Forest Degradation**

Underlying causes of deforestation are made up of a complex interaction of local and global forces interacting in various ways to drive activities and agents of deforestation in a given locality. Table 6 below shows a schematic relationship between underlying causes and proximate causes of deforestation and forest degradation and associated agents in Nigeria/CRS based on the analytical work undertaken by the REDD+ process in Nigeria/CRS leading to this Issues and options report. The analysis of the drivers of deforestation and forest degradation in CRS went through a participatory and highly consultative process involving key stakeholders from government, civil society, private sector, academic and research institutions, local communities and media institutions.



**Table 6:** Relationship between underlying and proximate drivers of deforestation and forest degradation in CRS.

Underlying Causes	<i>Demographic</i>	<i>Economic</i>	<i>Technological</i>	<i>Policy and Institutional</i>	<i>Cultural</i>
Proximate Causes					
Agricultural practices	Increased human population resulting in increased demand for agricultural land (forest conversion).	Need for food, income and nutritional securities by local communities and major source of rural employment.	Unsustainable agricultural practices and low agricultural productivity resulting in farmers being forced to open up new lands that are more fertile, and in a lot of cases in forested areas.	Subsidies that are in favour of non-climate smart agricultural practices.  Uncoordinated sector linkages for addressing food security.	Slash-and-burn agriculture to compensate for low soil fertility problem.  Use of fire to get rid of pests affecting soil organic content levels
Fuelwood (firewood and charcoal)	Increasing human population resulting in increased demand for fuelwood by households (both rural and urban).	Firewood/charcoal production as source of employment and alternative source of income.  Alternative sources of energy to wood biomass fuel relatively more expensive (e.g., kerosene, LPG, etc.).	Unsustainable technology for charcoal production (earth kiln) and utilization (inefficient stoves).	Poor energy policy implementation leading to heavy dependence on charcoal and firewood for household energy requirements.	Perception/belief that food cooked using firewood or charcoal cooks, smells and tastes better than that from other sources of energy.
Timber harvesting	Increased human population resulting in increased demand for timber.	Global and local demand for timber resources by industry and households.  Source of employment and income.	Inefficient timber harvesting and processing technologies by concession holders and illegal harvesters.	Poor forest policy implementation leading to inadequate capacity and resource allocation for effective forest activity monitoring by the government.	Perception/belief among rural communities that trees are God-given and for free access.

		Illegal timber harvesting.			
Land use and Infrastructure development	Increased population pressure demanding land for settlements, agriculture, and general infrastructure development.	Foreign direct investments and local investments for development driving deforestation and forest degradation through forest conversion.	Availability of advanced technologies for forest conversion.  Lack of access to modern technologies for integrated land use planning.	Lack of enforcement of legal instruments promulgating integrated land use planning.  Integrated land use provisions not covering customary lands.	Local community beliefs that once land on customary land is granted by local Traditional Authority (TA), it does not have to abide by government land use regulations but rather local by-laws that do not apply integrated land use planning.
Oil/Solid mineral exploration and quarrying	Increased population pressure for expansion of mining activities as sources of employment.	Global demand for oil and solid minerals and key state economic activities for poverty reduction	Oil/mining technologies that are not green	Poor economic policy implementation leading to inadequate economic diversification and heavy reliance on oil and minerals for national revenue.  Poor mining policy implementation that is negligent of environmental consequences.	Local beliefs and attitudes that mineral resources are God-given and therefore open to free access.

Source: Consultations with stakeholders and background studies, 2016.

## **CHAPTER 4: STRATEGIC OBJECTIVES**

Forests are central to the achievement of a low carbon and green economy. The CRS REDD+ strategy aims at assisting the State to reduce emissions in an effective, efficient, transparent and accountable way, and anchored on fairness, inclusiveness and sustainability.

### **4.1 Vision**

A climate-resilient economy and improved livelihoods of the people of CRS through sustainable management of forests and reduced emissions from deforestation and forest degradation by at least 20% by year 2030.

### **4.2 Mission**

To achieve the vision of climate resilient economy and improved livelihoods through:

Strengthening the functioning of forest and land management institutions and systems;

Improving relevant laws and regulations and strengthening law enforcement across the land management and fiscal governance sectors; and

Improving the capacity of relevant Ministries, Departments and Agencies (MDAs) to manage land, forest and ecosystem resources.

### **4.3 Goals**

Short-term Goal (2017-2019): The strategic improvement of institutions and governance systems, as well as of spatial plans and the investment environment, in order to fulfill Cross River State's commitment to reduce greenhouse gas emissions while maintaining economic growth.

Medium-term Goal (2017-2025): The implementation of governance systems in line with policies, measures and procedures developed by relevant institutions of CRS, and their application to the spatial and financial mechanisms developed and established in the previous phase, to achieve the targeted 20 percent reduction in emissions by 2025.

Long-term Goal (2017-2030): Cross River State's forests and land areas become a net carbon sink by 2030 as a result of the implementation of appropriate policies and measures for sustaining economic and ecosystem service functions of forests and contribution to Nigeria's Nationally Determined Contribution (NDC) to climate change mitigation and adaptation.

### **4.4 Guiding Principles**

REDD+ implementation in Cross River State is based on seven principles: effectiveness, efficiency, fairness, transparency, accountability, inclusiveness and sustainability, the criteria for which are as follows:

Effectiveness: REDD+ activities in Cross River State to reduce emissions and ensure sustainable natural resource management, improvement of livelihoods and result in real and measurable benefits towards achievement of a climate-resilient economy;

Efficiency: REDD+ activities in Cross River State to constitute long term activities that result in optimal ecological, financial and social benefits to the key stakeholders – government, local communities, private sector and civil society;

Fairness: REDD+ in Cross River State is implemented on the basis of the principles of equality for all and human rights protection in forest management, including women, the elderly, youth and communities vulnerable to socio-economic and environmental change;

Transparency: REDD+ activities shall be undertaken openly and transparently 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;

Accountability: REDD+ implementation shall be fully answerable to the people of Cross River State, Nigeria and the UNFCC in terms of relevance, process, funding, and results obtained;

Inclusiveness: REDD+ implementation and decision making shall engage citizens of Cross River State from diverse 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

Sustainability: REDD+ activities in Cross River State shall in the long term be financed from domestically generated resources with a cost-benefit sharing framework in order to leverage performance-based payments.

## 4.5 Scope

REDD+ programmes in Cross River State will focus on all REDD+ activities as follows;

1. Decreasing emissions from forest degradation; and
2. Preserving and accumulating carbon stocks through:
  - a. Forest conservation;
  - b. Sustainable management of forests; and
  - c. Restoration of degraded forest areas.

Investments to implement the activities will be prioritized and sought based on this CRS REDD+ Strategy.

## 4.6 Strategic Objectives and Strategic Interventions

Four Strategic Objectives (SO) and Strategic Interventions (SI) with their associated risks and mitigation strategies are presented below in table format. Details with regards to the context for the implementation are further provided after each table.

### 4.6.1 Strategic Objective on Emission Reductions from subsistence, small scale and commercial agriculture.

Agriculture is the mainstay of the CRS economy employing at least 45 percent of the State's labour force and contributing about 40 percent of the State GDP (this is much higher than the national average of about 25%).

This objective provides information on the policies and measures that should be implemented to enable reductions of emissions from the agriculture sector as well as the realization of co-benefits such as food security and income generation. The objectives and interventions in the Agriculture sector are focused on promoting agricultural production and intensification to reduce the need for expansion of agricultural areas to improve productivity. These will also capture the synergies among food security, reduction in soil erosion rates, adaptation and mitigation of emissions from agricultural practices, while promoting certification in plantation and cash crops, developing value chains for NTFPs as alternative sources of income and strengthening extension services to support uptake of CSA practices for better land management. The target for this approach is both smallholder (subsistence) and commercial farmers in CRS.

Through extensive consultations and analytical work, stakeholders prioritized three objectives to address the driver:

- a) Promotion of Climate Smart Agriculture (CSA) including Conservation Agriculture (CA) and Agroforestry (AF), and extension services to support these, in order to increase productivity of land already under agriculture. These also include developing the value chain for non-timber forest products and certification for plantation and cash crops;
- b) Promotion of efficient use of land through integrated land use planning and management especially with regards to commercial agriculture and large scale farming for cash crops; and
- c) Incentives or ecosystem service payments to enable farmers (both commercial and small scale) to maintain forested lands.

These are described in the Table 7 followed by further details on the policies or measures described.

**Table 7:** Strategic Objective on Agriculture

Strategic Objective (SO)	Strategic Intervention (SI)	Summary description of SI	Expected Results	Risks & Mitigation Strategies
<p><i>g1. By 2030, reduced emissions and deforestation from subsistence and commercial agriculture through adoption of good agricultural practices that mitigate carbon emissions.</i></p>	<p>Increase area and productivity (intensification) of non-forest land already under small scale permanent food and cash crops, to reduce the expansion of shifting agriculture via Climate Smart Agriculture and agroforestry.</p> <p>Incorporate effective CSA through agriculture</p>	<p>This requires identification of non-forest land that may have been abandoned and put under CSA practices including agroforestry and conservation farming to enhance their productivity and mitigate against conversion of virgin forest lands to agriculture. <b>The same would apply to commercial and cash crop farming.</b></p> <p>Relevant PLRS include Land Use National Forest Policy,</p>	<p>Constant area (hectarage) of agricultural land under permanent cultivation that is able to provide increased crop yields over the long term without resorting to conversion of new forest lands to agriculture. The rebound effect will be addressed through a combination of</p>	<p><b>Risk:</b> Availability of non-forest land for agriculture might be scarce.</p> <p><b>Mitigation Strategies:</b> Ensure increased productivity on existing agricultural lands by scaling up CSA practices. Effective land use planning.</p>

	development plans, policies and technology in landscapes.	the Green Alternative Agricultural Promotion Policy, CRSFC Law and EIA Act.	support to intensification with land use planning and use of positive incentives.	
	<p>Promote efficient use of land including allocation of commercial land and land for cash crops, through integrated gender sensitive land use planning. Identify and map ecological sensitive areas.</p> <p><b>Integrate land use planning for commercial and large-scale agriculture in order to allocate appropriate lands for agriculture that will not result in deforestation especially of lands that are high value for conservation and contain high carbon stocks.</b></p>	<p>Assessments are undertaken in consultation with the private sector, Planning Commission, EIA implementers and other stakeholders.</p> <p>Operationalize the provisions for the establishment of the Land and Resource Use Plan and Management Plan (s.52 of the CRSFC Law).</p> <p>Use National Forest Policy, the Green Alternative Agricultural Promotion Policy, CRSFC Law and EIA Act.</p>	Integrated land use planning is institutionalized thus allowing for identification of suitable land for agriculture and other competing land uses that lead to emissions from deforestation and forest degradation.	<p><b>Risk:</b> Delayed action by government to institutionalize integrated land use planning thus compromising achievement of REDD+ objectives.</p> <p><b>Mitigation Strategies:</b> REDD+ Technical Committee, CSOs and CBOs have access to finance and resources to institutionalize integrated land use planning via appropriate policies and measures.</p>
	Identify opportunities for certification in plantation and cash crops (e.g., palm oil, cocoa, pineapples, bananas, etc.). The issue of traceability will need to be addressed as part of these certification measures or in an activity on its own.	<p>Certification generates a premium price and gains access to markets by establishing environmental production standards and verifying that the processes and production practices for goods and services comply with the standards. This is critical for REDD+ implementation.</p> <p>Activities will need to be conducted to ascertain and assess the various standards and regulatory framework applicable to commercial agriculture, including understanding what standards are currently in</p>	Certified processes and products result into optimal profits to investors while upholding environmental standards that negate carbon emissions.	<p><b>Risk:</b> Investors may find certification processes expensive and thus unwilling to engage. Local capacity to engage in, manage and monitor certification schemes may be low.</p> <p><b>Mitigation Strategies:</b> Possible development of cheaper national certification schemes compliant with international standards. Build capacity to monitor, verify and supervise certification schemes. Determine what is</p>

		place and what are the capacity and resource needs.		covered through regulation or by creation of incentives and access to markets.
	Create payments and other incentives for ecosystem services to landholders of agricultural fields for maintenance of existing forest areas in areas that agricultural expansion is to be discouraged or limited. Land use planning at the local level in place to identify these existing forest areas. Support offered to identify these.	Incentives to landholders to sustainably manage their land holdings encourage land stewardship and voluntary compliance. This could be a valuable and effective tool for mainstreaming REDD+ across the land sector.	Payment for ecosystem services is institutionalized and REDD+ is mainstreamed in the land sector.	<b>Risk:</b> PES is not well developed and land owners see no incentive in mainstreaming REDD+. <b>Mitigation Strategies:</b> Government recognizing and adopting PES early on as an effective environmental stewardship tool and incentive mechanism.
	Develop value chains for NTFPs (mushrooms, bush mangoes, bitter kola, etc.) to increase income and reduce pressure on the forest timber products). Take into account gender responsive strategies that will favour the development of these value chains	Developing value chains for NTFPs will ensure income generation and security, away from dependence on subsistence agriculture that result in forest conversion.	Increased incomes from NTFPs development and promotion buffering against expected incomes from subsistence agriculture that is a primary source of emissions through deforestation and forest degradation.	<b>Risk:</b> Lack of markets and to invest in NTFP value chains. <b>Mitigation Strategies:</b> Resource mobilization from bilateral, multilateral and private financing sources as well as raising awareness among policy makers and local communities.
	Empower extension services to support uptake of climate smart and sustainable agriculture.  Develop and implement protocols in the use of fire in Agriculture	CSA is a new development phenomena in agriculture and a new frontier for agricultural extension staff and policy makers. Empowering extension staff through capacity development is key to ensuring the right messages are passed on to farmers to facilitate CSA uptake.	Knowledgeable extension staff pass on the right messages on CSA and farmers are able to implement CSA technologies confidently.	<b>Risk:</b> Extension staff do not have the support to enable them to learn new technologies. <b>Mitigation Strategies:</b> The mitigation strategy is to judiciously select among the extension cadre, individuals willing to learn new practices and technologies and train them.

#### 4.6.1.1. Land Use Planning

Integrated land use planning is a decision-making tool that allows for orderly planning of current and future land uses across a landscape thus avoiding conflicts among competing land uses such as agriculture and forest conservation and allocating land in the most optimal fashion for social and environmental benefits. Unplanned land use has resulted in unintended conversion of forestlands to other uses. At the core of land use planning is the joint balancing of competing land uses by all stakeholders (users and those affected from the changes in land uses) and the joint identification of those uses for which the highest consensus can be achieved – for the purpose of sustainability and mitigation against deforestation and forest degradation. Land use planning at Federal and CRS levels is a challenge in the absence of the implementation of specific legislation. Land use is therefore largely unplanned and planning is non-existent on customary lands. Opportunities for reform and enabling land use planning regulations and laws are needed.

Forestry matters, as well as ownership, control and management of forest areas within the state remain the mandate of the respective state governments. This is further reinforced by the respective powers of the State Governor and Federal Government as stipulated in the Land Use Act Cap 202 Act Cap L5 L.F.N. 2004 (the principal legislation on land administration and control in the country). In the case of local governments, the Constitution provides that one of their functions is to participate in the development of agriculture and natural resources other than the exploitation of minerals.

The Cross River State Forestry Commission Law, 2010 has stakeholder engagement provisions that would be possible to consider with respect to land use planning as follows;

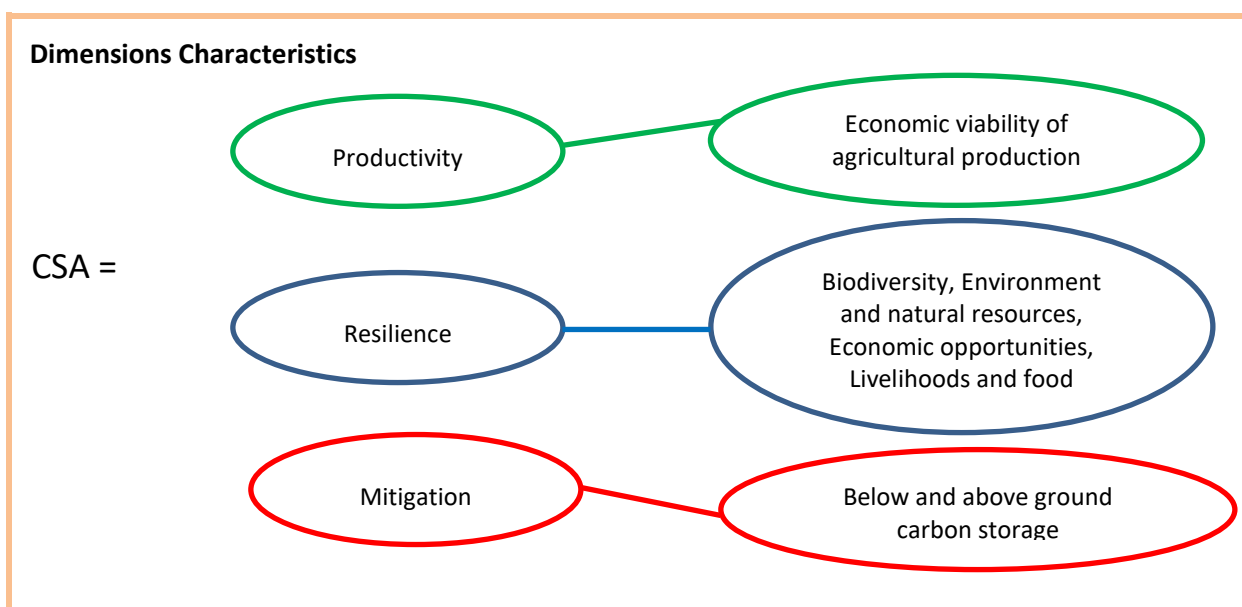
**Stakeholder Engagement:** S.24 of the law classified forests into nine categories, namely: (a) State Forest Reserve; (b) Local Government Forest; (c) Community Forest; (d) Private Forest; (e) Wildlife Sanctuary (f) Forest Plantation (g) Strict Nature Reserve; and (h) Garden, Park and Urban Forest. Section 25(2) provides that “In the event of any dispute as to boundary of existing State Forest Reserve before the commencement of this law, the Commission, in collaboration with the communities recognized in the applicable Forest Reserve Settlement Order and living in a State Forest Reserve Area and any other claimants, shall identify and re-establish the boundaries within in State Forest Reserve Area using the approved Forest Reserve Maps”. The Governor of CRS also has the right to de-reserve any forest land if this can be shown to be in the public interest.

The Land and Resource Use Plan and Management Plan (s.52) has not been operationalised. This strategy calls for the operationalization of the provisions for the establishment of the Land and Resource Use Plan and Management Plan (s.52 of the CRSFC Law). This will need an integrated inter-sectoral land use planning and management based on an agroecological landscape approach and ensure rights of local communities to provisioning services for their livelihoods. Other relevant regulatory measures such as EIA can also be used in tandem when particular lands are converted to agriculture as well as the State Land Use Act.

#### **4.6.1.2 Climate Smart Agriculture (CSA)**

Climate Smart Agriculture (CSA) is characterized by the simultaneous raising of resource use productivity, resilience to changing climatic conditions, and mitigation of carbon emissions (FAO, 2010). Figure 11 illustrates a conceptual framework of CSA dimensions and characteristics. This approach was designed mainly to address adaptation to climate change but is synergistic with mitigation and resilience as shown in Figure 11. CSA interventions should be designed to increase productivity and therefore efforts for intensification.





**Figure 11:** Conceptual presentation of CSA dimensions and characteristics  
(Source: Adapted from Chinedum et al. 2015)

Climate Smart Agriculture in its comprehensive form is already a government policy in Nigeria and Cross River State, through the Green Alternative Agricultural Promotion Policy (2016-2020) and the CRS draft Agricultural Policy (2014-2018). Elements of CSA are implemented by farmers who do not consciously regard them as CSA practices (Terdo and Adekola, 2014). Chinedum et al. (2015) described in detail CSA practices for scaling up and out in various Agro-Ecological Zones (AEZs) of Nigeria based on existing practices. Those relevant to CRS are presented in Table 8 below.

**Table 8:** Existing CSA practices suitable for scaling up and out in CRS

AEZ	CSA Relevant Practice
Coastal	<ul style="list-style-type: none"> <li>• Adjusting of planting dates.</li> <li>• Use of drought resistant varieties.</li> <li>• Use of improved varieties tolerant to climate change stressors, e.g., rice and maize hybrids.</li> <li>• Use of salt tolerant varieties (e.g., Ex-Dakar cultivar of groundnut).</li> <li>• Planting of cover crops to increase soil fertility, e.g., legumes.</li> <li>• Incorporation of residues or other mulches to reduce wind and soil erosion, increases water retention, and improves soil structure and aeration.</li> </ul>
Rainforest	<ul style="list-style-type: none"> <li>• Use of drought resistant varieties.</li> <li>• Use of improved varieties tolerant to climate change stressors, e.g., rice and maize hybrids.</li> </ul>

- Use of salt tolerant varieties (e.g., Ex-Dakar cultivar of groundnut).
- Reduced tillage.
- Mixed farming practices e.g., poultry, aquaculture and crop farming. The poultry dung serves as feed for the fish while the polluted pond water serves as manure for the crops.
- Planting of cover crops to increase soil fertility, e.g., legumes.
- Crop residue management to increase soil organic matter content, water retention and improve soil structure and aeration.
- Mulching to protect against wind and soil erosion .

Sources: Chinedun *et al.* 2015; FMEEnv, 2011; Terdoo and Adekola, 2014.

#### 4.6.1.3 Agroforestry

Agroforestry (AF) is a science or practice of integrating trees on farms and in other landscapes. The deliberate tree-crop or livestock interaction is applied on the same piece of land either at the same time or in time sequence to assure sustainability in the long term. Agroforestry is more than a tree-crop association because of its potential to integrate livestock, fish and bees with trees on the same piece of land. Planting of stands of fast growing soil improving leguminous tree species either around homesteads or in other types of land use for the purpose of redressing soil infertility, fuelwood scarcity, fodder shortages and/or other related problems also constitute agroforestry. Apart from facilitating carbon sequestration (both below and above ground), agroforestry systems play a critical role in ensuring a number of benefits (Matakala *et al.*, 2008) (Table 9).

**Table 9:** Social and Environmental Benefits from Agroforestry

The 'Big Five' Agroforestry Types	Food Security	Nutrition Security	Health Security	Fodder Security	Shelter & Energy Security	Income Security	Environmental Security
Fertilizer Trees	Xx	X	x	X	x	X	x
Fruit and Nut Trees	X	Xx	x	X	x	X	x
Medicinal Trees			xx	X	x	X	X
Fodder Trees	X	X	x	Xx	x	x	X
Timber and Fuelwood Trees		X		X	xx	xx	X

Source: Matakala *et al.*, 2011

Amonum *et al.* (2009)<sup>14</sup> and UN-REDD (UN-REDD, 2016b) have described agroforestry practices applied to various degrees in Nigeria which could be used to scale up and out (Table 7) under REDD+ implementation in CRS. Figure 12 shows inter-cropping of plantation and cocoa in Boki, CRS. However, there is currently paucity of data on the level of agroforestry adoption across Nigeria. Hence, the need to conduct agroforestry adoption studies in different Agro-ecological zones across the country to ascertain scale of uptake of agroforestry technologies and barriers to adoption.



**Figure 12:** Inter-cropping of plantain and cocoa in Boki, CRS. Source: Ntun Nkwam (CRS MCCF)

**Table 10:** Varieties and description of Agroforestry practices that could be used in CRS

S/N	Agroforestry System/Practice	Description
1.	Taungya	Food crops are inter-planted with trees in a unit area of land for 2-3 years. Food crops cease to exist on the land when the tree crops close canopy. The system has proved effective in providing food for forestry workers and forage for cattle rearers. The main issues are what happens when the canopy closes and farmers need to leave the land. Other issues include farmer eligibility, tenure, benefit sharing arrangements delineating how farmers benefit from the trees they have tended.
2.	Improved fallow in shifting cultivation	Introduction of cover crops on the farmland in an effort to minimize soil degradation associated with agriculture. Tree species planted during the fallow phase (2-3 years) are preferably leguminous woody species that are superior in nitrogen fixing and may yield other economic benefits (e.g., <i>Sesbania sesban</i> – River bean, <i>Gliricidia sepium</i> – Mexican lilac, <i>Tephrosia vogelii</i> – Fish bean, <i>Acacia angustissima</i> – Fernleaf acacia, <i>Leucaena</i> species, etc.).
3.	Alley-cropping (hedgerow intercropping)	In this system, arable crops are grown between hedgerows of planted shrubs and trees, preferably leguminous nitrogen-fixing species that are periodically pruned to prevent shading of the companion crops and the pruning applied as mulch for the crops. The same woody species described in (2) above could be used.
4.	Shelterbelts	Agroforestry system in which food crops are planted between rows of tree belts planted as shelter. The trees and shrubs are planted in one or more rows at right angle to prevailing winds. Common species used include <i>Gmelina</i> , <i>Casuarina equisetifolia</i> , etc.

<sup>14</sup> Amonum, J.I., F.D. Babalola, and S.I.N. Agera. 2009. Agroforestry Systems in Nigeria: Review of Concepts and Practices. Journal of Research in Forestry, Wildlife and Environment. Volume 1 No.1 September, 2009.

5.	Windbreaks	Here, double rows of trees are planted around the boundary of a food crop farm on the windward side. Each windbreak is 150m long with 100 trees planted at a spacing of 3m x 3m. Common species used include those mentioned in (4) above, etc.
6.	Multi-purpose trees on farmland (farm forestry)	Farmers intentionally leave few indigenous trees on farms when clearing the land in the practice. The trees commonly left are those of economic and social importance to the farmers. They could be fruit trees, medicinal trees, timber trees, fuelwood trees or shade trees, etc.
7.	Aquaforestry	Is a practice that links trees with aquaculture. Trees are planted around fishponds to provide fodder for herbivorous fish (from dropping leaves), shade to regulate water temperatures and enhanced plankton production from nitrogen fixed in the water (from the root systems) upon which fish feed on. This is widely practiced by traditional farmers in inland watercourses where the farmers have full rights to the land.
8.	Api-silviculture (Apiculture)	Where carefully chosen woody species are grown for their nectar-producing flowers and pollen valued by bees to boost honey and wax production.
9.	Fodder banks	Where indigenous or exotic woody perennial vegetation are judiciously used to help supply forage during dry seasons or years of low rainfall. Common species used include <i>Acacia angustissima</i> , <i>Gliricidia sepium</i> , etc.

Sources: Amonum *et al.*, 2009; UN-REDD, 2016; and Matakala *et al.*, 2008.

#### 4.6.1.4 Commercial Agriculture

CRS has favourable agro-ecological conditions. The sharp increase in the annual rate of deforestation from 0.67% for 2000-2007 period to 2.95% for 2007-2014 period can be attributed to the increase in developmental activities in Cross River state, particularly in the agricultural sector, within the 2007-2014 period.

Through CRS Green Field Development Programme which began in 1999, large areas of land were allocated or purchased for palm plantations and other large scale agricultural projects. Consequently, the rapid expansion of the agricultural frontier into forest buffer zones is threatening to undermine many of the state's conservation initiatives and valuable common pool resources. For example, at least 10 of such acquisitions are located within forest reserves and have encroached into the CR National Park, with 57,855 ha conflicting with protected areas and closed canopy forests located within important connectivity zones (Schoneveld, 2014).

CRS is among the selected States for the implementation of the Commercial Agriculture Development Project (CADP) of the Federal Ministry of Agriculture. For example, in November 2011, three commercial farm estates namely Calaro palm estate, Ibiaye palm plantation, and Biase palm plantation with a total land area of 19,173 ha were acquired for oil palm plantations development (RSPO, 2013). Other large scale farms include Obasanjo farms, Alvita farms, and Oban rubber estate.

Dependency on agriculture and agro-based industry in the CRS has increased since the Supreme Court judgment of 11th of July 2012 ceding the ownership of 76 offshore oil wells to Akwa Ibom State. The CRS lost revenue accruing from the 13 percent derivation principle, reducing total revenues and increasing the pressure on agriculture sector, which will continue to put pressure on the forest cover in the State. At the State level, foreign direct investment is being encouraged to expand plantations, in particular for oil palm, bananas and rice, in addition to the traditionally grown cocoa, pineapple and groundnuts. There is need to acknowledge the role that commercial farming in large and small holdings will play in the development

of the CRS economy in the next decade in order to formulate responses and to promote opportunities and incentives that will reduce the negative effects.

A recent review of whether sustainability standards can represent an effective tool for minimizing the negative ecological impact of palm oil cultivation in Indonesia<sup>15</sup> found that although the potential is high, effectiveness depends on many factors, including: (i) the inclusion of smallholders as a highly important group of producers in the palm oil industry; (ii) the strictness of the standard's Principles and Criteria (P&C); (iii) their adequate implementation and control; (iv) a suitable political and economic framework for smallholder certification, especially regarding good governance and domestic and international demand for certified sustainable palm oil (CSPO). Against this background, the reviewers recommended the following practical steps to enhance the effectiveness and adoption of sustainability standards, which are relevant to the Cross River State and Nigeria: a) Supporting smallholder certification projects with a strong ecological component; b) Balancing a trade-off between strict and easy- to-reach standards; c) Balancing a trade-off between socioeconomic and ecological goals; d) Choosing reputable certification bodies and reliable project partners; e) Increasing incentives and/or outside pressure to stay certified; f) Improving the coherence of land use planning, laws and regulations; g) Fighting corruption and strengthening law enforcement; h) improving affordability of certification schemes by smallholder farmers

In Cross River State, there is need to interrogate the feasibility of sustainability standards and certification in the country. This will entail analyses, in conjunction with private sector, government and other stakeholders to understand motivations likely to drive the uptake of sustainability standards, factors likely to support and prevent implementation of sustainability standards and identification of certification models for the various crops. In doing so, the country can draw on lessons from other countries using the certification schemes and standards for oil palm, cocoa, bananas, plantain, rubber, rice and other crops with potential for driving local economic development.

#### **4.6.2 Strategic Objective on reducing emissions and forest loss from National Parks, Forest Reserves and Community Forestry**

The strategic objective focuses on protected areas (national parks and forest reserves) and community forests as these are increasingly under pressure from conversion to other land uses. These forest estates are strategic to achieving REDD+ objectives. The desired outcome is to link forest management for reduced emissions from the above management regimes to benefit other key ecological components such as water resources, land resources, biodiversity conservation and enhanced livelihoods of communities from forest management. Through extensive consultations and analytical work, stakeholders prioritized options to address the driver, with the emphasis on protecting against forest loss and deforestation across the CRS landscapes.

- a) Review the Terms of Reference of the Forest Moratorium and ensure their strict compliance with sustainable management of forests;
- b) Ensure the rights of local communities to resources and ecosystems services from forests through the implementation of the Forest Sector Strategy (section 51 of the CRSFC Law which provides for *inter alia* gender sensitive community participation in community based forest management.

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<sup>80</sup> Clara Brandi et al, 2012: Sustainability Standards and Certification – Towards Sustainable Palm Oil in Indonesia? German Institute of Development Briefing Paper 9/2012: [https://www.die-gdi.de/uploads/media/BP\\_9.2012.pdf](https://www.die-gdi.de/uploads/media/BP_9.2012.pdf)

- c) Facilitate survey and gazettelement of the CRNP boundary to include high conservation value (HCV) and high carbon stock (HCS) areas. (See land use planning in previous section).
- d) Re-valuation of timber resources to determine appropriate license fees, levies and penalties in order to boost revenues and ensure biodiversity conservation; and
- e) Improve capacity of Cross River State forest institutions and resources to develop forest management plans in Forest Reserves and community forests, monitor timber operations, ensure that standards are being adhered to and illegal logging is curbed in Forest Reserves.
- f) Conserve and maintain HCS and HCV areas in timber operations.
- g) Restore degraded areas through reforestation and afforestation programmes using the Forest Trust Fund.
- h) Facilitate creation of a new protected area in the mangrove forest ecosystem.

These are described in the Table 11 followed by further details on the policies or measures described.

**Table 11:** Strategic Objectives in the Forest Sector

Strategic Objective (SO)	Strategic Intervention (SI)	Summary description of SI	Expected Results	Risks & Mitigation Strategies
<p>2. By 2030, reduced emissions and forest loss from National Parks (400km<sup>2</sup>), Forest Reserves (270km<sup>2</sup>) and Community Forests (160km<sup>2</sup>)</p>	<p>Facilitate survey and gazettelement of the proposed CRNP boundary to secure forests with high conservation value.</p>	<p>Clear and enforceable boundaries to national parks and other protected areas are critical to effective forest management decision-making and overall planning by ensuring that the boundaries are respected by all stakeholders with clear penalties for boundary violations. Operationalize the planned support to sustainable harvesting in the buffer zones of the CRNP and development of social amenities for surrounding communities;</p>	<p>Clarified boundaries for CRNP through a participatory consultative process involving enclave communities to facilitate compliance and respect for the boundaries to conserve forest carbon stocks.</p>	<p><b>Risk:</b> Enclave communities do not agree to the revised boundaries as these would include part of their communal lands. <b>Mitigation Strategies:</b> Discuss with local enclave communities with respect to the objectives of the boundary demarcation and offer support for buffer zone development</p>
	<p>Facilitate creation of a new Protected Area (PA) in the mangrove forest ecosystem.</p>	<p>Nigeria is in the top eight countries in the world with large mangrove ecosystems. Currently, the mangrove ecosystem is not represented in the PA ecosystems of the country.</p>	<p>Establishment of a PA for the mangrove ecosystem (to improve representativeness and conservation of the mangrove ecosystem and its biodiversity, to enhance the carbon storage in the system and delivery of ecosystems services to the fisheries and</p>	<p><b>Risk:</b> Delayed action on the part of government to establish a PA in the mangrove ecosystem. <b>Mitigation Strategies:</b> Continuous lobbying by the CRS REDD+ Technical Committee to establish it. The Forestry Commission should complete the process of delineating</p>

			the communities dependent on them.	the mangrove ecosystem as a PA.
	<p>Assess gaps and strengthen capacities of forest protection and management agencies/institutions to prevent forest degradation.</p> <p>Develop appropriate framework for the ease of titling of forest lands under Section 5(1) (g) of the Land Use Act and review or waive partly the conditions for registration of title for customary forest lands.</p>	<p>Forest management effectiveness was rated as low especially in forest reserves and community forests. This needs to change through strengthened capacities of forest protection and management agencies/institutions to prevent forest degradation.</p> <p>Enforce accountability through ensuring effective enforcement and compliance monitoring of relevant CRS State Laws including CRSFC Law.</p>	<p>Strengthened capacities of relevant MDAs and local communities to prevent forest degradation in CRS. Community Based Organizations (CBOs) are also critical to the delivery of positive results.</p>	<p><b>Risk:</b> The main risk would be lack of sufficient financial resources by government for capacity development.</p> <p><b>Mitigation Strategies:</b> This could be mitigated through resource mobilization from domestic sources, private, bilateral and multilateral sources.</p>
	<p>Conserve and maintain High Conservation Value (HCV) Areas within commercial forestry concessions, e.g. important wildlife corridors.</p> <p>Make Environmental and Social Impact Assessment preconditions with strong public participation in the exercise of the powers of de-reservation in the CRSFC Law.</p>	<p>Concession areas contain High Conservation Value Forests critical to the maintenance of other ecosystem services. These are often overlooked and clear-felled during timber harvesting operations by concessionaires.</p>	<p>Forest patches of high conservation value (e.g. those that provide connectivity as important wildlife corridors, contain rare, endangered/threatened or endemic species, vulnerable or considered important biodiversity hotspots) are conserved and maintained.</p>	<p><b>Risk:</b> Lack of awareness about HCV areas on the part of concessionaires poses a risk of loss of such important forest areas.</p> <p><b>Mitigation Strategies:</b> The Forestry commission should always identify and monitor the protection of HCV areas on all land-use spaces.</p>
	<p>Ensure that all industrial logging is practiced to high conservation standards, so that loss of forest and biodiversity is minimized (work with NEITI to include logging in the NEITI principles).</p>	<p>Industrial logging ought to adopt low-impact logging or reduced impact logging techniques to protect biodiversity. This involves intensively planned and carefully controlled implementation of timber harvesting operations to minimize the environmental impact on forest stands and soils.</p>	<p>Timber concession areas are sustainably managed to protect biodiversity and other ecosystem values.</p>	<p><b>Risk:</b> The main risk is that industrial timber operators may be reluctant to adopt low impact or reduced impact logging techniques.</p> <p><b>Mitigation Strategies:</b> Empower the Forestry commission to enforce relevant laws and ensure compliance; and train the loggers</p>

	Build capacity and implement guidelines on logging, including reduced impact logging.			on low impact logging techniques.
	Review the ToRs for the moratorium on logging to ensure compliance with sustainable management of forests.  Accommodate the rights of local communities to sustainable use of ecosystem goods and services for their sustained livelihoods	While the moratorium initially yielded positive results in curbing unsustainable logging and forest loss, this is no longer the case as illegal logging is on the increase with enclave communities largely feeling alienated. This has also resulted in lost revenues by government from timber licenses and permits. Hence the need to review the initial thoughts behind the moratorium and instead enforce SFM practices.	The CRS government should carefully evaluate the current status and future performance of the moratorium and possibly lift the ban on logging and enforce SFM practices.	<b>Risk:</b> The CRS government may be unwilling to lift the moratorium due to lack of political will to enforce SFM. <b>Mitigation Strategies:</b> The CRS Technical Committee on REDD+ should continue lobbying government on the need to lift the moratorium.
	Re-valuation of timber resources to determine appropriate license fees, levies and penalties in order to boost revenues and ensure biodiversity conservation.	Appropriate valuation of timber resources generates true current market value of timber and forest resources to the national and household economies by taking into account both market and ecosystem service values (provisioning, regulation, supporting and cultural services). Knowing the actual true market value of timber resources and associated forest ecosystem services will mitigate against illegal timber harvesting and ensure legal timber harvesting practices.	Timber resources and ecosystem services are re-valuated to determine appropriate optimal fees to be charged under permit.	<b>Risk:</b> The main possible risk is delay by government to institute studies on forest valuation across the state. <b>Mitigation Strategies:</b> The REDD+ Technical Committee to lobby government on the need for regular forest re-valuation studies.
	Accelerate the implementation of the Forest Sector Strategy (s.51 of CRSFC Law) which provides for the “conservation and sustainable management of forest resources and livelihood for the communities in the	A number of progressive clauses supportive of REDD+ within the CRSFC Law have not been operationalized including CBFM, JFM, Forestry Trust Fund, Forestry Reserve Fund , Forest Sector Strategy, etc.  Build the capacity of local communities to effectively engage in community level	Operationalization of CBFM and JFM within the CRSFC Law (2010).	<b>Risk:</b> The main risk is continued delays by government in operationalizing the CRSFC Law. <b>Mitigation Strategies:</b> This could be mitigated through continued lobbying by the CRS REDD+ Technical Committee, in liaison with the



	State and to empower community participation in CBFM and JFM	<p>compliance monitoring and adherence to provisions of relevant PLRs such as the EIA Act, CRSRC Law and the Minerals and Mining Act</p> <p>Provide for the recognition and respect local communities' knowledge and generate benefits.</p> <p>Institutionalize and integrate Free, Prior and Informed Consent of forest dependent communities'/ key stakeholders into all relevant sectoral policies and laws.</p>		REDD+ Unit for government to implement the CRSFC Law in full.
	<p>Restore degraded forest areas through Assisted Natural Regeneration (ANR) and reforestation/ afforestation programmes.</p> <p>Operationalize the Forest Trust Fund provided for in Section 20 of the CRSFC Law to 'fund regeneration in depleted areas and general sustenance of the forest',</p>	<p>Degraded forest areas due to agricultural expansion and logging could be restored/ rehabilitated through afforestation (e.g., through adoption of assisted natural regeneration –ANR- technologies) and reforestation through planting of suitable indigenous or exotic tree species that are promoted by the government programmes. Such activities would contribute to enhanced forest carbon stocks, biodiversity and ecosystem services, local employment and improved livelihoods.</p>	Restored degraded forest areas through ANR and reforestation/ afforestation programmes contributing to enhanced forest carbon stocks	<p><b>Risk:</b> The risk is that the CRS government may not have adequate financial resources and political will to implement forest restoration programmes.</p> <p><b>Mitigation Strategies:</b> This could be mitigated through partnerships with the private sector and concerted efforts at resource mobilization to facilitate implantation of the Strategic Intervention.</p>

#### 4.6.2.1 National Parks

Cross River National Park (CRNP) with a land area of 3,640 km<sup>2</sup> is the third largest park in Nigeria after Gashaka-Gumti (6,731 km<sup>2</sup>) and Kainji Lake National Parks (5,382 km<sup>2</sup>). CRNP consists of two divisions: the **Oban Division** covering an area of approximately 3,000 km<sup>2</sup> of lowland rainforest which is the largest area of closed-canopy rainforest in Nigeria and is contiguous with Korup National Park in Cameroon; while the Okavango Division covers an area of 640 km<sup>2</sup> (WCS Nigeria, 2015)<sup>16</sup>.

<sup>16</sup> WCS Nigeria. 2015. Cross River National Park (Okwangwo Division) - <https://nigeria.wcs.org/Wild-Places/Cross-River-NP-Okwangwo.aspx> and Cross River National Park (Oban Division) - <https://nigeria.wcs.org/Wild-Places/Cross-River-NP-Oban.aspx>

The Gazettement of the proposed boundary of the park which has been approved by both the CRS and national government will establish well define boundaries of the park thereby reducing considerable conflict between the park with communities and other land users. The established boundaries will enhance biodiversity protection as the contiguity between the Oban division of the park and Korup National park in Cameroon will be maintained thereby adding credence to the proposed establishment of the Cameroon/Nigeria Man and Biosphere Reserve. Operationalizing the planned support to sustainable harvesting in the buffer zones of the CRNP and development of social amenities for surrounding communities will be key.

#### 4.6.2.2 Community Based Forest Management

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 natural resource management; 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+. There are a number of lessons to be learnt from the Participatory and Joint management initiatives in Ekuri, (Box 1).

<b>Box 1: Community Management of Forests in Ekuri: Opportunities to build on for REDD+</b>
<p>In Ekuri, elected leaders have a well-defined role and powers to govern resource use through participatory forest management rules, which have the full weight of formal law as CRS has a state-wide constitution that stipulates the composition, duties and responsibilities of Village Forest Management Committees (FMCs). These FMCs are made up of the community representatives in the forest management arrangements and are responsible and accountable for what happens in the forest. They act as sub-committees of the village councils and derive their authority from and report to the Village Council. They also act as entry points to the Forestry Commission and have the mandate to manage their community forest to ensure increased benefits flow.</p> <p>Benefits, as royalties from exploitation, are shared between the communities and the government. Duties of the FMCs include; forest protection and joint patrols with forestry commission and reporting of offenders for arrest by forestry commission for prosecution. The benefit sharing formula in three types of forest areas is 20 percent: 80 percent in favour of government for proceeds of products obtained from government established plantations while communities had 70 percent: 30 percent ratio for proceeds of products obtained from community forest. The formula for products obtained from the forest reserve was 50 percent but most of the respondents did not agree with this formula and instead proposed an alternative formula of 60 percent: 40 percent in favour of community.</p> <p>The communities in CRS funded several projects from the revenue/royalty realized from their forest management activities. These activities included building of schools and health centres, civic centre, skills development and promotion of gender programmes. The benefits also financed scholarships from the indigenous communities under the Ekuri Initiative for girls studying in the University. The funds financed the construction of a bridge and culverts on Okokori-Ekuri road. This enhanced trading, contributing greatly to improved household incomes and local economic development</p> <p>Challenges;</p> <ul style="list-style-type: none"> <li>• inadequate management of expectations on the magnitude of economic returns/benefits for the communities involved.</li> <li>• high levels of poverty exacerbated by few opportunities of employment for the majority of the populations</li> <li>• need for stakeholders need to show mutual understanding, transparency and commitment in all their dealings with each other. There currently exists mutual mistrust between communities and government agencies (Forestry Commission, the Nigeria National Park Services and the Forestry Department).</li> <li>• Lack of effectiveness, or lack thereof, of the Forestry Commission and the Department of Forestry.</li> <li>• Further issues include poor infrastructure, and lack of water and electricity, creating problems of access, processing and storage of farm products.</li> <li>• Continued deforestation from subsistence agriculture in Edondon, new/old Ekuri and Buancho communities and from commercial activities in Kanyang Community. Wood extraction exists in all the hotspots.</li> </ul>

### 4.6.2.3 Restoration of Degraded Areas

There are a number of large-scale forest restoration and reforestation programmes currently being implemented or under consideration in Nigeria. This includes Nigerian participation in the Great Green Wall for the Sahara and the Sahel Initiative, and in the case of Cross River State, the proposed '5 Million Trees' programme (focusing on restoring degraded areas of forest reserves).

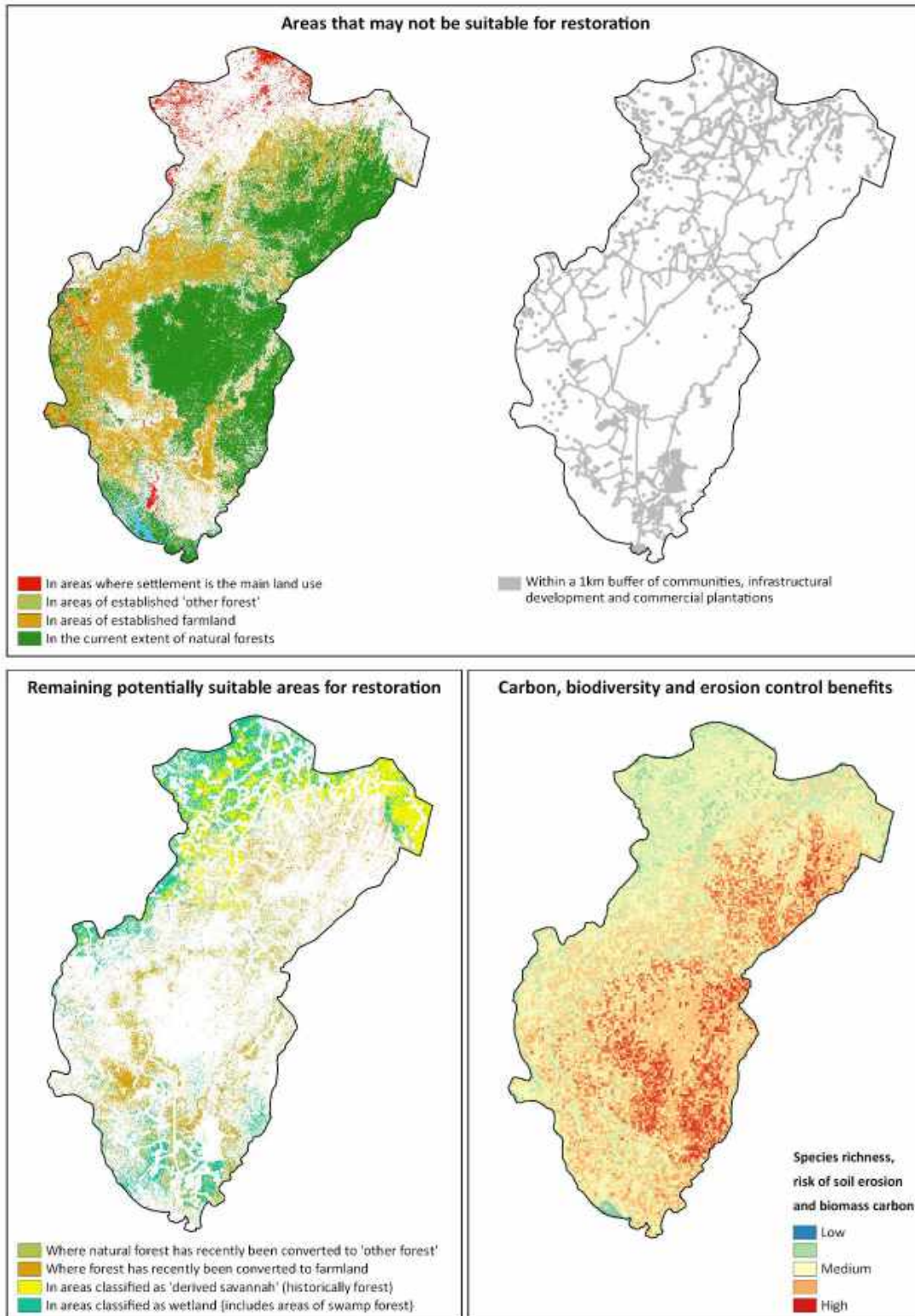
The strategic objective looks at reforestation, forest restoration and afforestation. The definitions, in the country context, important, as forest concepts and definitions influence how forest and land-use transitions are interpreted. A widely-used definition, describe reforestation as 'the re-establishment of trees and understorey plants at a site previously occupied by forest cover' and restoration as action 'to re-establish the presumed structure, productivity and species diversity of the forest originally present at a site' where 'the ecological processes and functions of the restored forest will closely match those of the original forest'.

In prioritizing areas for reforestation or forest restoration, a number of questions need to be taken into account as the REDD+ activity is further detailed out (UN-REDD, 2017):

- What were the original causes of forest loss and are they being addressed? Efforts to restore forest will be in vain if the restored areas are soon degraded or deforested again. What other land uses are in place or planned and does stakeholder support forest restoration
- Are soil and vegetation conditions in the area still suitable for forest growth?
- Is there security of land tenure or is the land protected so that restoration actions will be feasible in the long term (such as community forestry).
- How high are the existing carbon stocks? Restoration may be more cost-effective in enhancing carbon stocks where the existing stocks are much lower than the potential stocks, (as long as drivers of carbon loss are addressed).

Current analysis for the REDD+ Strategy shows that areas feasible for the implementation of forest restoration actions were first identified by excluding those areas that are likely to be unavailable: settlement areas; established farmlands outside of natural forests; established plantation forests outside of natural forests; and areas within the current extent of natural forests. Areas within 1 km of infrastructure development, communities and commercial plantations were also excluded (composite layers in Figure 13). There could be other forest landscape restoration options within these excluded zones.

The map of areas considered potentially suitable for restoration of forests was then combined with the map of key potential benefits (biomass carbon stocks in forest and non-forest areas, potential richness of threatened species, and role of forest in controlling soil erosion), to determine opportunity areas for forest restoration that may promote these multiple benefits.



The most

**Figure 13: Potential for Restoration to deliver benefits (UN-REDD, 2017)**

widespread areas potentially suitable for forest restoration occur in the north of Cross River State, and these may include areas of natural non-forest ecosystems. According to stakeholders in Cross River State, the 'derived savannah' land cover class includes large areas that were historically forest but have long since seen a transition to an open habitat; and the 'swamp/wetland' land cover class includes areas of natural swamp forest that have been converted to other land-uses (but is difficult to distinguish from interpreting satellite imagery). These potentially suitable areas also include land that has recently (between 2000 and 2014) been converted from natural forest to either farmland and grazing fields, or to planted tree crops such as palm oil, rubber or Gmelina. The reasoning behind this is that restoration may be more successful on land that has more recently been natural forest, than it would be in areas of established farmland or plantations that have not had natural forest cover within the last 15 years.

Areas with the potential to deliver higher levels of the selected multiple benefits from forest restoration are concentrated in and around the National Park, as well as in the far southeast and northeast corners of the State. Forest restoration in these areas, if well-planned and implemented, could not only help to restore forest carbon stocks but may also contribute to biodiversity conservation (particularly in areas such as KBAs and priority sites for species such as gorillas) and limiting the risk of soil erosion, especially in the State's mountainous areas and along waterways.

#### 4.6.2.4 Certification

Certification is a written guarantee by an independent certification agency that a production process or a product meets the criteria or requirements contained in a certain standard. The basic elements of a certification system (also called certification 'programme' or 'scheme') are the standard and the system to control the compliance of the certified entity with the standard. There are currently no certification schemes in CRS relating to agricultural products produced in Cross River State. For example in the CRS, many farmers adopt banana and plantains inter-cropping with cocoa in the early stages of cocoa establishment. Intercropping oil palm on large and small holder plots also reduces the cost of inputs and hence production. The potential for certification is unknown because the cost benefit analysis is needed to provide clarity on the financial viability of certification for crops that are not meant for export markets.

Wilmar, an international agricultural commodities Company has been contemplating over the past couple of years to engage in certification schemes for its agricultural products. This will need to be followed through. Certification schemes are viable mechanisms for establishing market preference for sustainably produced goods.

Environmental and social standards are generally aimed at the production process (and sometimes also the trading process, as in fair-trade standards). These standards can focus on environmental issues such as soil conservation, water protection, pesticide use, or waste management, social issues (such as worker rights, occupational health and safety) or on other issues such as food safety. The improvements can result in the protection of local resources, healthier workers and other benefits for producers, consumers and local communities. Certification schemes encompass both social and environmental standards and when an actor decides to engage in certification, they are obliged to adhere to the standards. It is a voluntary process because producers freely decide whether or not they want to certify their production methods and products.

### 4.6.3 Reduce emissions and deforestation from energy supply systems, especially wood fuel based energy systems by 20% by 2030.

in order to reduce degradation resulting from unsustainable tree harvesting, there is need for efficient and sustainable wood fuel production technologies, efficient utilization of wood fuels and better regulation of the charcoal industry for firewood and charcoal production. In tandem with this, barriers and issues to be considered with regards to type, source, distribution and availability of alternative energy sources. This requires collaboration with all the actors and partners in the forestry and energy sectors, in collaboration is private sector. Through extensive consultations and analytical work, stakeholders prioritized three objectives to address the driver:

- a) Formulation of strategies to address wood fuels production and utilization and promotion of alternative renewable energy sources including strategic partnerships; and
- b) Scaling up fuel woodlots establishment on-farm.
- c) Increased uptake of appropriate alternative energy sources

These are described in the Table 12 followed by further details on the policies or measures described.

**Table 12:** Strategic Objective on Energy Supply Systems

Strategic Objective (SO)	Strategic Intervention (SI)	Summary description of SI	Expected Results	Risks & Mitigation Strategies
3. Reduce emissions and deforestation from energy supply systems, especially wood fuel based energy systems by 20% by 2030.	Scale up fuel woodlot establishment on farm and around homesteads.	Establishment of fuel woodlots on farm and around homesteads with fast growing species to relieve pressure on indigenous tree species.	Wide scale adoption of wood fuel woodlots on farm and around homesteads.  Enhanced conservation of carbon stocks.	<b>Risk:</b> low uptake due to inadequate germplasm. Trade-offs for land <b>Mitigation Strategy:</b> Conduct research and extension and promote establishment of seed orchards.
	Reduce impact of charcoal production on forests through better regulation and improved efficiency.  Draw on guidelines and standards to address fuelwood and charcoal production and utilization for application in the State.	Analyse the charcoal value chain with respect to especially efficient production technologies. Adopt best practices from on-going programmes and projects.  Strategic partnerships between public and private sectors to overcome investment and adoption barriers are needed.	Enhanced enforcement and compliance governing the collection of wood fuels.  Reduced emissions from wood fuels production, processing and utilisation	<b>Risk:</b> low adoption due to : 1) high cost of the new technologies 2) preference for traditional methods <b>Mitigation Strategy:</b> Deliberate incentives (e.g subsidies) by Government for improved and efficient fuelwood production technologies.

	Increase uptake of appropriate alternative energy sources such as LPG. Consider these in tandem with other sources of renewable energy for rural areas such as solar, wind and geothermal energy  Promote strategic partnerships.	Identify options to promote adoption of alternative renewable energy sources such as solar, biogas, wind, geothermal, mini-hydro, etc. in order to reduce dependence on tree-based bio-energy sources.	Adoption or use of alternative energy sources and technologies.  Improved climate resilient economy and livelihoods.  Sustainable management of forest resources enhanced.	<b>Risk:</b> Low buy in by the stakeholders and higher cost of alternatives. <b>Mitigation Strategies:</b> Determine alternatives through stakeholder engagement. Provide incentive mechanisms to the communities and private sector such as capacity building, tax rebates, subsidies, etc. on sustainable renewable energies.
	Remove technology barriers to widespread uptake of alternative fuels	Market barriers and market failures limit the development of renewable energy systems. Appropriate policy measures are vital to addressing such adverse effects and encourage their development.	Wide scale adoption of renewable energy technologies.	<b>Risk:</b> Inappropriate fiscal and regulatory framework. <b>Mitigation Strategy:</b> Learn from best practices. Appropriate fiscal and regulatory measures put in place.

#### 4.6.3.1 Sustainable fuelwood management

Most households in CRS, as in Nigeria, depend on wood as a source of fuel for cooking and heating. Apart from being an important driver for deforestation and forest degradation, fuelwood smoke from open fires is hazardous to health and results in smoke related ailments. The traditional cooking method is expensive, burning up to 90 percent more wood than is necessary and costing poor families money that could be put to better use on education, health and nutrition. The promotion of alternative energy technologies such as ethanol/alcohol, biogas and biomass (agricultural residue, processed biomass and efficient and clean cookstoves is necessary.

Some of the barriers to the widespread uptake of clean cooking technologies include undeveloped markets for the supply of clean cookstoves, which stems from both policy and market failures, a lack of education about the benefits of clean cookstoves, weak supply chains, poor stove quality, limited choice and insufficient access to finance (Alliance for Clean Energy, Nigeria).

The CRS Renewable Energy Unit has been engaged in awareness raising campaigns to promote energy efficient cookstoves. The Unit has so far distributed 4 000 energy-efficient stoves to 42 communities across CRS (Dr. Ita, CRS Forestry Commission, *pers. comm.*, 17<sup>th</sup> November 2016) which appears to be at a smaller scale than is required. The impact of such campaigns and efforts cannot be ascertained at this moment as there are no data on adoption rates and impact assessment. It is also not clear to what extent other alternative renewable energy sources have been promoted in CRS such as solar, biogas, wind, liquefied petroleum gas (LPG), geothermal, etc.

Curently CRS is among the three States in Nigeria that is implementing the GEF/UNDP Sustainable Fuelwood Project. The project aim is to establish fuel wood lots (15,000 Hectares) across the State to

promote sustainable utilization of fuelwood supply with a component on fuel-efficient wood stove. The project is at its inception phase and lessons should be learnt from its implementation.

Experience from these State and federal level projects on integrated energy programmes will provide an excellent opportunity for replication and adoption in CRS, while presenting an opportunity for creating jobs in addition to saving costs of energy in the long-run. The 30-year growth and development Strategy of the CRS provides a clear opportunity as well to embed clean energy solutions.

#### 4.6.4 Prevent clearance of High Carbon Stock and High Conservation Value Forests in mining, quarrying and infrastructure development programmes

The importance of mining to the CRS's economy and the legislative status governing the sector places it in a relatively advantageous position against the forestry 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 strict enforcement of existing laws, regulations and standards. The contribution of infrastructural development to deforestation and forest degradation stems from inadequate land use planning, lack of strict enforcement of environmental and social impact assessment and global best practices. Through extensive consultations and analytical work, stakeholders prioritized three objectives to address the driver:

- a) Enforce Environmental Impact Assessment (EIA) and Strategic Environmental and Social Assessment (SESA) provisions;
- b) Develop and enforce grievance redress mechanisms that are responsive and central to local community concerns for all major infrastructural and mining developments; and
- c) Incorporate mining and infrastructure land uses in land use planning processes at local and regional level. This objective should be read in tandem with the strategic objective on agriculture with regards to land use planning as commercial agriculture.

These are described in the Table 13 followed by further details on the policies or measures described.

**Table 13:** Strategic Objective on protection of forests in mining and infrastructure

Strategic Objective (SO)	Strategic Intervention (SI)	Summary description of SI	Expected Results	Risks & Mitigation Strategies
4. By 2020, prevent or offset clearance of high carbon stock and High Conservation Value Forests (HCVF) from mining, quarrying and infrastructure development programmes	Locate services and new infrastructure development in non-forest and less-ecologically sensitive forest areas or outside forest lands. Include offset planting in the course of mining. This should	Appropriate land use planning is critical in ensuring that infrastructure developments are judiciously located in non-forest and less ecologically sensitive forest areas  Develop and institutionalize a protocol for advancement of cross-sectoral coordination and building of	Improved biodiversity conservation and avoided emissions from forest conversion.	<b>Risk:</b> lack of political commitment and low enforcement capacity. Default by operators. <b>Mitigation Strategy:</b> Stakeholder engagement, enabling provisions within the policy and legal framework implemented.



	be a requirement under EIA.	<p>synergies across land use sectors in the granting of mining and quarrying rights and infrastructure activities.</p> <p>Operationalize the State Mineral Resources and Environmental Management Committee</p>		Strict enforcement of penalties for non-compliance.
	Empower CSO groups in CRS to partner with communities in demanding environment and social assessment (ESA) accountability, transparency and compliance with international standards.	Currently, local communities receive little support from CSOs in ensuring that communities are empowered to hold government and industry accountable and compliant to ESA requirements.	Empowered CSO groups and communities demanding accountability and compliance to ESA provisions.	<p><b>Risk:</b> CSOs may not have access to adequate resources to partner with local communities in ensuring ESA compliance.</p> <p><b>Mitigation Strategy:</b> CSOs could seek funds from various sources and seek government support with respect to sharing available information and engaging to make sure the process is transparent.</p>
	Empower communities as stakeholders in compliance monitoring of the relevant laws, standards and guidelines regulating activities in the mining, quarrying and infrastructure development sectors.	<p>Generally, local communities lack information on EIA and global best practices and are also not adequately engaged as stakeholders in all the processes.</p> <p>Empower communities and other stakeholders to ensure that activities in the mining and IS sectors are conducted in more socially and environmentally sustainable manner, taking into account pollution control, social and environmental safeguards.</p> <p>Develop mechanisms to strengthen the force of public opinion in the EIA process – develop a user friendly framework for public access to approved EIAs and participation in the monitoring compliance of</p>	Capacity of the communities enhanced and level of engagement improved.	<p><b>Risk:</b> conflicts and divergent interests within the communities.</p> <p><b>Mitigation Strategy:</b> Strengthened efforts to educate communities on their rights and responsibilities. Amend section 19 (Establishment of State Mineral Resources and Environmental Management Committee) of the Minerals and Mining Act to include representatives of communities, private sector and civil society to make it fully representative of key stakeholders.</p>

		environmental management plans  Elaborate procedural guidelines and parameters for assessment of ecological values and sensitivity in EIA activities.		
	Develop and enforce Grievance Redress Mechanism (GRM) that are responsive and central to local community concerns and all other relevant stakeholders.	There are currently no GRM for local communities in addressing their concerns over major infrastructural developments. These ought to be in place in line with the Cancun Safeguards. A national feedback and grievance redress mechanism needs to be effectively available, and if necessary strengthened, as part of the country's REDD+ institutional arrangements.	GRM is put in place	<b>Risk:</b> Non-ownership of the GRM by the local communities. Delayed action by government in developing the GRM mechanism which could demotivate community participation in REDD+. <b>Mitigation Strategy:</b> The REDD+ Technical Committee to lobby government to quickly develop the GRM with the involvement of local communities.
	Put in place disaster risk reduction and early warning systems to manage pollution from oil/solid mineral exploration to protect critical forest ecosystems such as mangroves and high biodiversity hotspots.	In order to build both environmental and social resilience of critical forest ecosystems and surrounding local communities from potential pollution arising from mining activities, it is important to develop disaster risk reduction (DRR) and early warning systems to enhance disaster risk preparedness.	Disaster Risk Reduction (DRR) and early warning systems developed and implemented.	<b>Risk:</b> delays by government in developing DRR and Early Warning Systems (EWS). <b>Mitigation Strategy:</b> Effective stakeholder engagement to develop and enforce DRR and EWS with the REDD+ Technical Committee taking an advocacy lead.

#### 4.6.4.1 Mining and quarrying in Cross River State

The creation of the CRS Ministry of Solid Minerals and Development is a recognition of CRS's endowment with mineral resources and in line with its proposed 30-Year Growth and Development Strategy, to sustainably extract mineral resources taking into account environmental and social safeguards. The available mineral deposits in Cross River include gold, uranium, iron ore, tin ore, manganese, titanium, limestone, salt, coal, muscovite, kaoline, crude oil, lead zinc and feldspar, quartz, barite, diamond, graphite, pyrite, talc schist, rutile, tourmaline, amethyst, spring water, granite, bentonite, clay and iron ore (hermatite). CRS's vision, as expounded in the Growth and Development Strategy, is to minimize mining footprint on the environment and natural ecosystems.

The concept of Green mining is recommended and involves the technologies, best practices and mine processes that are implemented as a means to reduce the environmental impacts associated with the

extraction and processing of metals and minerals (Kirke, 2014). Green mining entails a careful balance of resources, adaptation of new equipment and the altering of the supply chain to accommodate more sustainable processes. Examples include the reduction of greenhouse gases, selective mining approaches to reduce the ecological footprint and reduction in chemical use (UN-REDD, 2016a). Green mining focuses on the entire mining lifecycle through four important pillars:

1. *Footprint Reduction*: Minimize waste and quantity of contaminants produced, and reduce the consumption of energy and water;
2. *Innovation in Waste Management*: Develop better treatment and management technologies in waste processing, utilization and disposal;
3. *Mine Closure and Rehabilitation*: Improve the remediation and reclamation of mining impacted lands, mine sites and ecosystems; and
4. *Ecosystem Risk Management*: Develop improved technologies for metal hazard and risk management; monitoring environmental effects and assessing metal toxicity.

## **CHAPTER 5: IMPLEMENTATION OF REDD+ IN CRS**

### **5.1 Implementation Approach**

The implementation approach for the REDD+ activities in CRS 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 (as promulgated under Nationally Determined Contribution of Nigeria - NDC) and CRS development goals currently being articulated under the State's draft 30-Year Growth and Development Strategy.

The CRS Strategy will form the basis of the development of proposals, investment plans and implementation plans going forward in order to define what output, activities and budgets are required for specific outcomes.

In terms of scale, appropriate REDD+ activities shall be implemented across all agro-ecological zones of CRS – Rainforest, Montane forest, Savannah and Mangrove/swamp and will encompass the full scope of REDD+ as listed in Section 4.5.

The institutional arrangements for REDD+ implementation at CRS level are presented in Figure 14. At the apex is the Ministry of Climate Change and Forestry (MCCF) responsible for overall supervision of REDD+ implementation in CRS (Table 11). The CRS Ministry of Climate Change and Forestry will be responsible for ensuring that the REDD+ Programme is fully integrated into the State's development priorities, especially the 30-year growth and development strategy, and anchored into all initiatives and programmes of the relevant agencies. This will include ensuring the programme links to ongoing initiatives, benefits from any existing opportunities, and is able to optimally influence the enabling environment for climate change mitigation and green development in CRS. Policy wise, MCCF will work closely with the CRS Planning Commission for proper integration, harmonization, and institutionalization of REDD+ into existing and future governance architecture in the State; and technically with the CRS Forestry Commission, Ministries of Agriculture and Land for more effective coordination of REDD+ actions to improve forest governance and address drivers identified in this strategy.

At the second level is the REDD+ Technical Committee responsible for technical advice on all REDD+ related matters and the REDD+ Unit responsible for overall coordination of REDD+ activities in CRS. The MCCF/Forestry Commission will be responsible for remote sensing and GIS, forest inventory, GHG emissions reporting and Safeguards Information System (SIS) (Table 11) while ground implementation will be undertaken by relevant MDAs, NGOs, local communities, CBOs, LGAs, Traditional Authorities (TAs), academic and research institutions, private sector and the media. There may be need to revitalize the Cross River State Climate Change Council, which is the apex coordinating body on all climate change matters in CRS with the State Executive Governor as the Chairman.

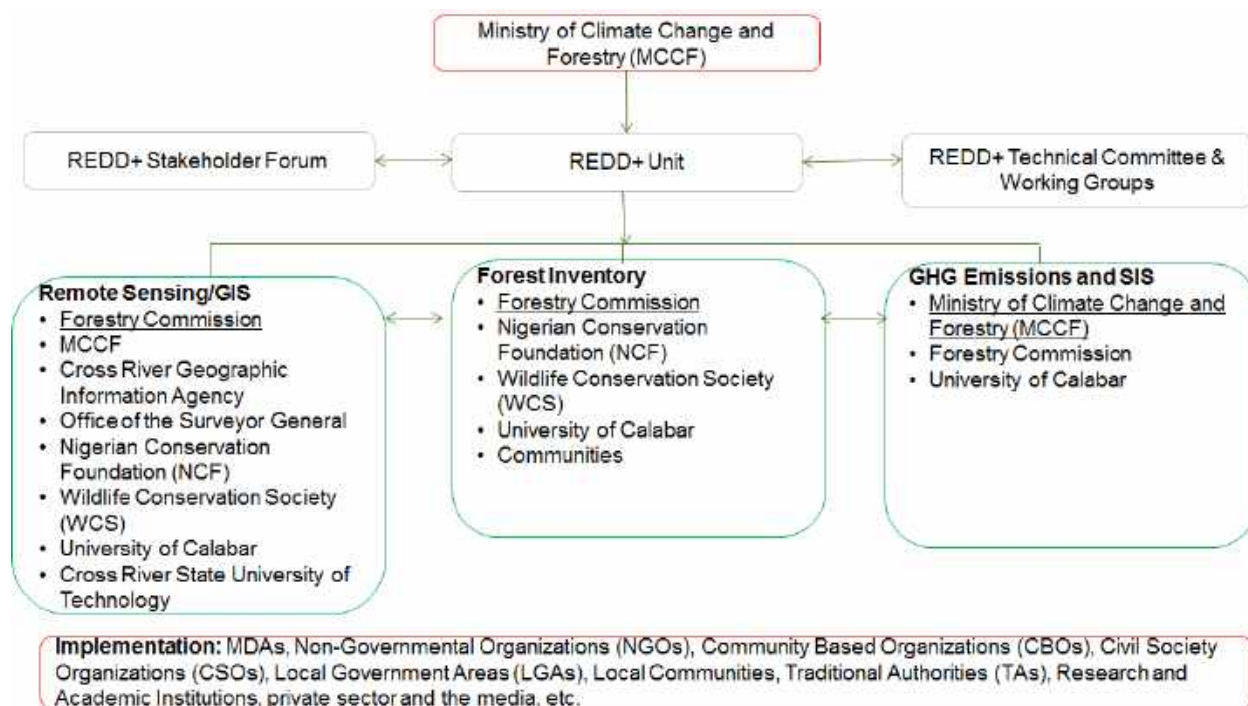
At the second level is the REDD+ Technical Committee responsible for technical advice on all REDD+ related matters. The CRS REDD+ Technical Committee will provide technical support for programme implementation and coordination. The Committee will ensure that it has representation from the diverse stakeholders, including other Ministries and government officials, as well as representatives from NGOs/CSOs, communities, academia and the private sector. The Technical Committee will contribute to programme progress, outputs and address challenges. Its terms of reference are as follows:

1. Examine and make recommendations for the effective planning and implementation of REDD+ programmes and activities in CRS.
2. Develop roadmap for and support development of investment plan and implementation of the CRS REDD+ Strategy.
3. Establish links with the National REDD+ Technical Committee to align REDD+ implementation with national priorities and the National Framework Strategy; and leverage on opportunities for support to CRS.
4. Identify and advise on institutional roles and mandates of relevant stakeholders for the implementation of REDD+ in CRS.
5. Coordinate CRS REDD+ activities and programmes, and how REDD+ can be integrated into the State level development programmes such as the 30-year growth and development strategy.
6. Examine and recommend measures and programmes which will ensure awareness creation, education, training and institutional capacity building on REDD+ issues in CRS.
7. Serve as liaison between relevant institutions, stakeholder groups, National and International Agencies and Development Partners for effective planning and implementation of REDD+ activities in CRS.
8. Any other assignments that the Minister of Climate Change and Forestry may decide to include from time to time.

The REDD+ Unit in the MCCF will act as the Programme Management Unit and be responsible for overall coordination of REDD+ activities in CRS. The Unit will work closely with staff of the Forestry Commission and members of the Technical Committee to carry out remote sensing and GIS, forest inventory, GHG emissions reporting and management of information that will be needed for the national level Safeguards Information System (SIS). Ground implementation of REDD+ activities will be undertaken by relevant Ministries, Departments and Agencies, NGOs, local communities, CBOs, LGAs, Traditional Authorities (TAs), academic and research institutions, private sector and the media. The Unit will also facilitate the functioning of the REDD+ Stakeholder Forum, a platform where the various stakeholders meet to dialogue, negotiate, update and agree on action plans for implementing REDD+ activities in the State. See Table 14

Working groups have been set up for Safeguards, Greenhouse Gas Emissions reporting, on Forest Inventory and on Geographic Information Systems. Each working group has representatives from the Federal level as members for linkages and information that will be relevant for Nigeria's National

Communication to the UNFCCC and its Biennial Update Report. This constitution of the groups promotes capacity building at the Federal level as well as facilitate interaction and communication.



**Figure 14:** Institutional arrangements for REDD+ implementation at CRS Level

Table 14 shows the roles and responsibilities of the key stakeholders for REDD+ Implementation

**Table 14:** Roles and responsibilities of key stakeholders for REDD+ implementation in CRS

Institution	Roles and Responsibilities
<b>A. Level 1</b>	
1. CRS Forestry Commission	Overall supervisory responsibility for REDD+ implementation in the State. Revitalize the Cross River State Climate Change Council, which is the apex coordinating body on all climate change matters in CRS with the State Executive Governor as the Chairman.
<b>B. Level 2</b>	
2. REDD+ Technical Committee	Technical advisory responsibilities to the REDD+ Unit.
3. REDD+ Unit	Direct responsibility for REDD+ implementation in CRS and day-to-day coordination of REDD+ activities including monitoring of actions and safeguards.
<b>C. Level 3</b>	
<i>Remote Sensing/GIS</i>	
4. Lead Institution = Forestry Commission	Acquisition and processing of satellite imageries, coordination and dissemination of information to feed to the national remote sensing unit.
<i>Forest Inventory</i>	
5. Lead Institution = Forestry	Responsible for forest inventory and houses the state forest information system. It feeds the sub-national forest inventory information to the Federal level.
<i>GHG Emissions</i>	
6. Lead Institution = Forestry/MCCF	Responsible for reporting on GHG emissions from the State to the Federal Department of Climate Change.

7. Safeguards Working Group	Monitoring REDD+ PAMs implementation to ensure it address and respect the safeguards using the Principle and criteria as tool
<i>Implementation</i>	
CRSFC, relevant MDAs, Non-Governmental Organizations (NGOs), Community Based Organizations (CBOs), Civil Society Organizations (CSOs), Local Communities, Local Government Areas (LGAs), Traditional Authorities (TAs), Research and Academic Institutions, private sector, media, etc.	Ground implementation of activities, monitoring and verification including safeguards.

### 5.2 Role of the Private Sector

Private sector is a key REDD+ stakeholder that could play a significant role in implementation, innovation and investment.

Two main private sector groups are relevant in the context of REDD+: a) those focused on producing verified emission reductions (VERs); and b) those involved in the supply chains of forest-risk commodities. Approaches for engagement fall into four categories: incentives; risk mitigation instruments; setting of minimum standards; and enabling conditions. A key challenge for private sector engagement in REDD+ in CRS is the low level of awareness about REDD+ among private sector stakeholders. Establishing a platform through which these entities are able to exchange information and experiences on REDD+ in order to implement and catalyze, as well as scale up private sector investments and be fully aware of the opportunities that REDD+ would offer.

The objectives by 2020 is to identify opportunities, catalyse and scale up private sector investment and take ownership of REDD+. This will be done by identifying relevant private sector groups to determine modes of engagement, for instance for zero deforestation commodities. A platform to foster strong linkages among the existing Organized Private Sector at both national and state levels with NGOs, CSOs and CBOs who are extremely knowledgeable about eco-issues and REDD+ can be envisaged.

### 5.3 Gender, Knowledge management and Communications

These are all critical in supporting actions and overall efforts towards successful and effective implementation of REDD+. Implementation of REDD+ in Nigeria/CRS will be based on stakeholder consultations, a gender approach, a communication strategy and the involvement of researchers and extension agents.

By 2025, the target is that knowledge management framework for REDD+ implementation in CRS fully functional and implemented.

Stakeholder identified the need for a functional “Centre of Excellence” to promote opportunities for learning exchanges such as South-South programmes and online platform with other REDD+ projects. The Centre would serve as a network that attracts experts and champions to contribute to knowledge development including opportunities for South-South online knowledge exchanges in the REDD+ programme and transfer knowledge in designing key aspects of the national or sub-national programmes.

Establishment of a web-portal will also be critical in facilitating information sharing and exchange of ideas among stakeholders.

Mainstreaming gender and equity in REDD+ planning, decision making and implementation has been identified by stakeholders as a key target to define equal opportunities for women and other vulnerable groups in REDD+ planning, decision-making and implementation. This is important to address the gender barriers due to socio-cultural practices, low literacy levels and strong patriarchal values that slow pace in adapting to new concepts, ideas and attitudes. Integration of gender issues will be done through engagement with women and men, vulnerable and marginalized groups in order for knowledge sharing, capacity building, advocacy, and lobbying on use of forest resources. At the local level, community mapping and gender analysis to identify stakeholders and encumbrances to women and other vulnerable groups for their effective participation in REDD+. Community mapping and gender analysis will help identify the special needs of women and other vulnerable groups in REDD+ which if addressed would promote the effective participation of women and other vulnerable groups in REDD+ and improve equity.

A communication strategy will be developed in order to promote effective communication on REDD+ activities among stakeholders. A strategy is under development under the auspices of the REDD+ Technical Committee.

## **5.4 Financing of the REDD+ Strategy and Implementation of Strategic Objectives**

Strategic objectives, enabling activities and implementation functions will need to be supported through resource mobilization efforts. Funding opportunities for the Nigeria/CRS REDD+ are many and could come from different sources: domestic and/or foreign; bilateral and/or multilateral; public and/or private and innovative sources. The issue therefore is not where funding will come from but how to orient investments, design of the REDD+ Strategy and follow-up programmes/projects to take advantage of the many potential financing opportunities available. This will require blending of different financing instruments and sources for implementation of REDD+ activities (UN-REDD 2016d).

Background studies for the Strategy, describe in detail, a number of financing sources for the CRS REDD+ Strategy and Nigeria/CRS's eligibility to the bilateral and multilateral sources:

### **5.4.1 Domestic sources**

The Federal budget serves as the basis for public sector expenditure during a fiscal year. In addition to the federal budget each state government also prepares a state budget based on its developmental needs and priorities. Thus, the budget (federal or state) is the instrument through which the federal, or state, government identifies its priority areas for development and sources of revenue generation (UN-REDD, 2016d). The Ecological Fund (further discussed in Section 5.3.5) is another strategic source of domestic financing for REDD+ implementation in CRS/Nigeria.

Assessing financing for REDD+ implementation from the federal budget could draw on the following allocative processes forms: (i) From a direct allocation to the FMEnv, with an increased overall allocation for REDD+ implementation; and (ii) contributions from different sectoral budgets (e.g. Agriculture, Water Resources, Energy, Tourism), which bolster the multi-disciplinary nature of REDD+ and is in keeping with

the cross sectoral activities that will be identified in detailed investment proposals that draw from this Strategy.

Bundling the allocation for various REDD+ relevant sectors will be the recommended way to enable REDD+ financing to become available at the national level and through domestic sources. That will require that measures such as; mainstreaming of the REDD+ activities across relevant sectors; and building of strong consensus, coalitions and partnerships among sectors in order to create synergies among related land-uses and sustainable development finance streams in federal and state budgets.

### 5.4.2 Continental and regional sources

A wide range of continental and regional sources of financing were assessed for applicability and eligibility for REDD+ in Nigeria and the following were identified as possible sources (Table 15):

**Table 15:** Continental and regional sources of financing and Nigeria’s eligibility

Name of Fund	Support Focus of the Fund	Capitalization Level (US\$)	Nigeria’s Eligibility
<p>The Nigeria Trust Fund (NTF) Created in 1976 by an agreement between the Nigerian Government and African Development Bank Group. NTF resources can co-finance operations of the AfDB and the African Development Fund, as well as fund stand-alone operations, in both the public and private sector. to low income countries. A call for proposal is launched annually in July.</p>	<p>Revolving Fund, Socio-economic development. Funds projects not countries.</p>	<p>~253 million</p>	<p>Eligible for projects The NTF has a funding ceiling of US\$ 10 million per project and only provides concessional loans</p>
<p>The Africa Climate Change Fund (ACCF)</p>	<p>Climate resilience building, sustainable infrastructure, creating ecosystem services, sustainable use of natural resources especially water, mainstream climate change and low carbon development strategies and policies, capacity building.</p>	<p>~10 billion</p>	<p>Eligible – inclusive growth and low carbon growth. Complements the GEF and CIF, for which ADB is an implementing agency. Governments, NGOs, research institutions, regional and institutions</p>
<p>The ECOWAS Regional Development Fund (ERDF)</p>	<p>Public sector financing for economic infrastructure, poverty alleviation</p>	<p>500 million</p>	<p>Eligible – This financing window grants medium and long-term concessionary loans. The parent organization, the EBID is also the financing bank of NEPAD projects in the region.</p>



The ECOWAS Regional Investment Fund (ERIB)	Private and commercial sector financing	500 million	Eligible - This financing window grants medium and long-term concessionary loans. The parent organization, the EBID is also the financing bank of NEPAD projects in the region.
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Source: Adapted from UN-REDD, 2016d

### 5.4.3 Multilateral and bilateral sources

A range of existing, new and emerging multilateral and bilateral sources of financing for climate change were identified. These are summarized in Table 16.

**Table 16:** Existing, new and emerging multilateral and bilateral funding sources and instruments for REDD+ implementation in CRS/Nigeria

A. MULTILATERAL FUNDS						
Source/Financial Instrument	Administered By	Area of Focus	Fund Size	Relevant for		Previous Nigeria Access
				REDD+ implementation	Nigeria	
<b>I. Adaptation</b>						
Adaptation Fund	Adaptation Fund Board	Adaptation	\$115.96 million	Yes	Yes	Yes
Pilot Program for Climate Resilience	World Bank	Adaptation	\$1.2 billion	Yes	Yes	Yes
Adaptation for Smallholder Agriculture Program	IFAD	Adaptation	£147.5 million	Yes	Yes	Yes
B. MULTILATERAL FUNDS						
Source/Financial Instrument	Administered By	Area of Focus	Fund Size	Relevant for		Previous Nigeria Access
				REDD+ implementation	Nigeria	
<b>II. Mitigation</b>						
Clean Technology Fund	World Bank	Mitigation	\$5.6 billion	Yes	Yes	Yes
Forest Carbon Partnership Facility	World Bank	Mitigation, REDD+	\$ 300 million	Yes	Yes	Yes – The Readiness Fund
Forest Investment Program	World Bank	Mitigation, REDD+	\$ 775 million	Yes	Yes	No
Bio-carbon Fund	World Bank	Mitigation, REDD+	\$ 180 million	Yes	Yes	Yes
UN-REDD Programme	UNDP	REDD+		Yes	Yes	Yes
Global Energy Efficiency and Renewable Energy Fund	EC	Mitigation,	Euro 222 million	Yes	Yes	unknown
<b>III. Adaptation and Mitigation</b>						

GEF Trust Fund- Climate Change Focal Area	GEF	Adaptation, Mitigation, REDD+		Yes	Yes	Yes
Global Climate Change Alliance	EC	Adaptation, Mitigation, REDD+		Yes	Yes	unknown
Green Climate Fund	GCF Secretariat/ UNFCCC	Adaptation, Mitigation, REDD+		Yes	Yes	No
Special Climate Change Fund	GEF	Adaptation, Mitigation, REDD+		Yes	Yes	Not clear if accessed or not
Strategic Climate Fund	World Bank	Adaptation		No	Yes	Not clear if accessed or not

#### C. BILATERAL FUNDS

Source/Financial Instrument	Administered By	Area of Focus	Fund Size	Relevant for		Previous Nigeria Access
				REDD+ implementation	Nigeria	
<b>IV. Adaptation and Mitigation</b>						
Australia's International Carbon Initiative	Government of Australia	REDD+	\$ 512.95 million	Yes	Yes	Not clear if accessed or not
Germany's International Climate Initiative	Government of Germany	Adaptation, Mitigation, REDD+	~ \$ 2 billion	Yes	Yes	Not clear if accessed or not
Japan's Fast Start Finance- Private Source	Government of Japan	Adaptation, Mitigation, REDD+	\$ 15 billion	Yes	Yes	Not clear if accessed or not
Norway's International Climate and Forest Initiative	Government of Norway	REDD+	\$ 517 million	Yes	Yes	Not clear if accessed or not
United Kingdom's International Climate Fund	UK Government	Adaptation, Mitigation, REDD+	\$ 495 million	Yes	Yes	Not clear if accessed or not

#### 5.4.4 Non-profit funding

Included in the matrix of international private finance are NGOs and philanthropic organizations involved in forests and climate change work. Several are involved in REDD+ projects and programmes around the world, for example in Indonesia, Brazil, Costa Rica, and Nepal where international NGOs such as Conservation International (CI), Worldwide Fund for Nature (WWF) and the Center for International Forestry Research (CIFOR) are engaged in REDD+ projects and programmes. Those that do not directly provide financing for REDD+ activities are a source of expert knowledge and experience which are essential in informing REDD+ implementation.

Also important under the non-profit funding are what is termed "impactful investments" promoted by foundations whose main focus is to ensure that their investments, mainly coming from public and

corporate sources are meaningfully put to use with the measurable impact on the ground without gain. Based on the background studies, Foundations and Philanthropic institutions relevant to Nigeria/CRS and REDD+ are: (i) the Rockefeller Foundation – US\$ 350 million; (ii) Bill and Melinda Gates Foundation – US\$ 38.3 billion; (iii) Ford Foundation – US\$ 55 billion; (iv) Sindicatum Climate Change Foundation – US\$ 100 million per year; (v) the Mary Robinson-Climate Justice Foundation – £50 million/year; and (vi) the Friedrich-Ebert-Stiftung (FES- Foundation for Social Democracy). Some of these foundations are already funding projects in Nigeria including the Bill & Melinda Gates Foundation to a tune of US\$ 925 million for climate change resilience among communities and the Friedrich Ebert Foundation providing a total of US\$ 535,443 for small-scale community projects on climate change, governance and empowerment.

For a more detailed description of all potential funding sources, including innovative funding sources, refer to UN-REDD (UN-REDD, 2016d).

## 5.4.5 Financing Options

### 5.4.5.1 Proposed Measures to Foster Access to Financing

The landscape for resource mobilization is very competitive and complex, and requires measures to build a solid foundation for resource mobilization. Some of these measures are:

- **Developing a Resource Mobilization Strategy.** This will provide a focus for targeted and continuous mobilization of finance. Nigeria/CRS will prepare an investment plan or a set of proposals to operationalize its REDD+ Strategy in order to fully flesh out the strategic interventions and plan specific REDD+ activities through a fully costed approach;
- **Mainstreaming REDD+ activities into relevant sector policies and strategies.** REDD+ is a multi-sectoral initiative, but often its implementation is “monopolized” by those responsible for the management of forestry resources, often constraining financing. The Federal and State budget contributions to the environment and/or the forestry sector are low (UN-REDD, 2016d). Mainstreaming will spread the implementation over relevant sectors, and result in higher combined budgetary resources from the domestic sector for REDD+ implementation. This is also important in working towards inter-sectoral coordination and involving sectors that are agents of deforestation and forest degradation outside of the forest sector.
- **Building coalitions and Strategic Partnerships.** This will be a fundamental approach for the REDD+ agenda and a way to make more efficient use of resources. For example, the Forest Commission/MCCF of CRS with little financial and technical capacity can forge partnerships with NGOs, universities, specialized development agencies, ministries and departments, etc. to implement the Strategy. Different partners will bring in different skills and resources and channel these to REDD+ Strategy implementation.

Two financing/fund management options are recommended for Nigeria to establish for implementation of its REDD+ Strategy. These are:

- **Nigeria has the opportunity to use federal and state budgets in combination with the Ecological Fund** to finance REDD+ implementation. The Ecological Fund is managed and disbursed by the Presidency in the Office of the Secretary to the Government of the Federation. It is a strategic instrument for ameliorating ecological problems nationwide through effective management, co-

ordination, monitoring and implementation of government ecological policies, programmes and projects. Federal and State budgets are based on requests based on need and allocative criteria. This approach demonstrates the government’s commitment to REDD+ while ensuring predictability in funding and enable the creation of synergy among REDD+ relevant activities and budget lines fostering inter sectoral collaboration and mainstreaming of REDD+ across sectors; and

- **Using direct budget and/or project support.** Finances mobilized for REDD+ will go into the annual budget at the appropriate level and earmarked for REDD+ at the community level and for extension service. This option is intended to use domestic finance to leverage international finance for REDD+ implementation;

More details are provided in Table 17. Targets: By 2018, the Federal and CRS governments are using statutory budgets to finance REDD+ implementation domestically. By 2020, the Federal and CRS governments are using Ecological Funds to finance REDD+ implementation.

**Table 17:** Financing Mechanisms for REDD+ at Federal and State Levels

OPTION	STRATEGIC OBJECTIVE	STRATEGIC INTERVENTIONS
<b>1. Using federal and state budgets in combination with the Ecological fund to finance REDD+ implementation</b>	To establish a comprehensive framework that facilitates channeling of forest related financing streams in sectoral budgetary allocations (Federal and State) in combination with contributions from the Ecological Fund to the implementation of REDD+ Strategy.	<ul style="list-style-type: none"> <li>• Create synergies with other land-use and environmental finance streams in federal and state budgets</li> <li>• Create a steering committee of permanent secretaries to oversee joint implementation of REDD+ activities using sector specific budget allocations. Advocate for use of part of the Federal share of the Ecological Fund as an incentive to reward/compensate states with verifiable conservation of forests. Create a window within the Ecological Fund at Federal and State levels to support REDD+ implementation.</li> <li>• Create budget lines for REDD+ implementation at National and State levels.</li> </ul>
<b>2. Leveraging project support funding</b>	Create links where possible with project support funding (private, bilateral and multilateral) which is available for climate change adaptation and mitigation and can be applied for REDD+ implementation.	<ul style="list-style-type: none"> <li>• These are local and foreign investments in the environment sector and climate change in particular towards improving the quality of rural livelihoods, poverty alleviation, food security and better stewardship of the environment.</li> </ul>

<b>3. Using direct project support (Finances mobilized for REDD+ will go into the annual budget at the appropriate level and earmarked for REDD+ )</b>	To change lives for the better, through the promotion of investments (foreign and domestic) directly into REDD+ projects within communities in CRS to contribute towards poverty alleviation, food security and better stewardship of the environment.	<ul style="list-style-type: none"> <li>• The Forest Commission of CRS should develop a resource mobilization/advocacy strategy, build capacity and in collaboration with MDAs implement and mobilize financing for REDD+ implementation by the Forestry Commission of CRS (FCCRS) to provide extension services to communities on their role in REDD+ implementation and assist them in negotiations with investors with regard to incentives and benefits sharing.</li> </ul>
<b>4. By 2017, establish a CRS Forest Fund to support REDD+ implementation.</b>	Implement the relevant provisions under the CRS Forest Commission Law (2010) to establish a Forest Trust Fund (FTF) and Forest Reserve Fund (FRF).	<ul style="list-style-type: none"> <li>• The FTF and FRF are already contained in the CRS Forest Commission Law but not yet implemented. There is need to operationalize the law in full in order to support REDD+ implementation in CRS.</li> </ul>

Source: UN-REDD, 2016d

## 5.5 Safeguards

REDD+ implementation presents social and environmental risks as well as opportunities to enhance social and environmental benefits. For example, if well planned and implemented, REDD+ policies and measures can contribute to securing local forest-based livelihoods, improving biodiversity conservation and ecosystem services, and providing economic opportunities such as eco-tourism. However, policies that promote conservation without due regard to local populations' rights to natural resources may lead to restrictions on these livelihood sources.

Other potential risks are related to the issue of statutory and customary forestland tenure and user rights, and how the potential benefits from REDD+ will be equitably distributed among stakeholders. Environmental risks include the potential for poorly designed and managed reforestation and afforestation measures that have negative impacts on biodiversity and ecosystem services provided by natural forest. Such risks have significant implications for REDD+ strategy development. In-country capacity for addressing and respecting, in particular, social safeguards, needs to be reinforced in order to ensure such safeguards issues are properly addressed and respected throughout REDD+ implementation in Nigeria.

To address these concerns, Parties at the UNFCCC COP 16 agreed on a set of seven safeguards, known as the *Cancon safeguards*, which should be promoted and supported during implementation of REDD+ activities to minimize these risks. In particular, Safeguard (e) states that REDD+ implementation should be used to enhance other social and environmental benefits derived from forest ecosystems.

### 5.5.1 Nigeria's REDD+ Safeguards

Nigeria follows the guidance and requirements for the REDD+ safeguards as per the UNFCCC Decisions, which can be summarized as:

1. Promoting and supporting the UNFCCC REDD+ (or 'Cancun') safeguards throughout the planning and implementation of REDD+ policies and measures, regardless of the source and type of funding;
2. Developing a national-level system for providing information on how the Cancun safeguards are being addressed and respected (i.e. a 'safeguards information system' - SIS)<sup>17</sup>; and
3. Providing summaries of information on how all the Cancun safeguards are being addressed and respected throughout the implementation of REDD+ actions<sup>18</sup>.

The country has adopted a country approach to safeguards, aiming to ensure that during REDD+ implementation and set up a National Safeguards Working Group (NSWG) with members drawn from Federal and CRS government agencies, academia, civil society, communities, the media and the private Sector was constituted in late 2013.

Between 2015-2016, the NSWG led consultations and technical work for the preparation of the key components of Nigeria's country approach to the safeguards. Safeguard activities (5.5.2) in CRS have contributed to the development of the safeguards framework at national level.

### 5.5.2 CRS REDD+ Process on Safeguards

Coordinated by the National Safeguards Working Group, contributions to the state-level safeguards process have comprised four elements to date:

- i. A participatory analysis of the risks and benefits of a set of potential REDD+ policies and measures
- ii. A preliminary assessment of existing national and state policies, laws and regulations (PLRs), in relation to the proposed objectives (PaMS), as well as the status of their implementation. This was followed by gap filling consultations, on the status of PLRs implementation, with relevant State Government Ministries, departments and agencies (MDAs), some communities within and outside the REDD+ pilot areas and local government councils with jurisdiction over the pilot areas;
- iii. Development of principles and criteria that interpret the Cancun safeguards in accordance with CRS's specific circumstances; and
- iv. Application of the principles and criteria to refine the strategic objectives of the CRS REDD+ Strategy during REDD+ implementation through PLRs reforms (improvements/opportunities) at both State and National level).

These are elaborated further below:

#### 5.5.2.1 Environmental and Social Risks and Benefits Analysis

The environmental and social Risks and Benefits Analysis conducted in CRS was developed through an early consultation and joint working process led by the NSWG. The purpose of this analysis was to inform the development of the State's REDD+ strategy as well as to feed into a state-level clarification of the Cancun safeguards. Using a template developed in-country with assistance from the UN-REDD Programme, a series of participatory consultations and small working group sessions gathered information and feedback on:

- an initial set of policies and measures and the driver to be addressed;

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<sup>17</sup> UNFCCC Decision 1/CP.16, paragraph 71 (d); Decision 9/CP.19 paragraph 3

<sup>18</sup> UNFCCC Decision 12/CP.17, paragraph 3; Decision 9/CP.19, paragraph 4

- the potential environmental and social risks and benefits relevant to each of these;
- suggested measures to reduce the risks and enhance the benefits;
- which safeguard(s) the risks and benefits are associated with; and
- possible sources of information on the risks and benefits.

The results of the assessment have been considered in the discussion of the strategic objectives in the Strategy. The difficulties in revising legislation were recognized by the NSWG. However, a review of current land tenure system (statutory and customary) and natural resource management challenges, and solutions to these issues should still be sought within the current legal and institutional framework as well as the traditional system when developing proposals for investment. Following consolidation of all inputs, the Risks and Benefits Analysis was presented formally to the CRS REDD+ Technical Committee for consideration and validation in June 2016. All the information gathered during the analysis is contained in a flow sheet (NSWG, 2016a), as well as short factsheets on each PAM considered.

#### 5.5.2.2 Clarification of the safeguards: principles and criteria

Building on the Risks and Benefits Analysis, in 2016, the NSWG conducted a participatory process to clarify the Cancun safeguards for CRS. A ‘principles and criteria’ (P&C) approach was used. The P&C are expected to contribute to:

- a) reaching a common understanding on the Cancun safeguards among stakeholders in CRS and at the national-level;
- b) informing the development of a safeguards information system at the national level and a monitoring framework for REDD+ at the state level; and
- c) improving the governance of REDD+.

The CRS REDD+ Safeguards P&C include the seven Cancun safeguards as the principles and 22 criteria that contextualize the principles (Table 18). These criteria were developed through an analytical process informed by the following elements (NSWG, 2016b):

1. An international legal good practice understanding to the substantive content of the Cancun safeguards<sup>19</sup>;
2. An assessment of the risks and benefits as described above<sup>20</sup>; and
3. An assessment of existing safeguards, relevant PLRs, and the implementation of those PLRs, at both national and state levels.

**Table 18:** Cross River State REDD+ Safeguards Principles and Criteria

PRINCIPLE	CRITERIA
<b>a) [REDD+] actions complement or are consistent with the objectives of national forest programmes and relevant international conventions and agreements</b>	<b>a1.</b> The proposed REDD+ PaM should support the National Forest Act (2006), National Policy on Environment (1999), National Policy on Climate Change (2012), National Biodiversity strategy and Action plan (NBSAP), CRS Forest Law (2010), and other relevant national and state PLRs. <b>a2.</b> The proposed REDD+ PaM should support the United Nations Sustainable Development Goals 6, 7, 11, 12, 13, and 14, African Charter on Human and Peoples Rights and other relevant international conventions that Nigeria is signatory to.
<b>b) Transparent and effective national forest governance structures, taking</b>	<b>b1.</b> The proposed REDD+ PaM should clarify and strengthen relevant land tenure arrangements

<p><b>into account national legislation and sovereignty</b></p>	<p><b>b2.</b> The proposed REDD+ PaM should ensure equitable distribution of incentives and benefits from carbon and ecosystem services that are commensurate with the responsibilities for PaM implementation  <b>b3.</b> The proposed REDD+ PaM should promote gender equality in its design and implementation  <b>b4.</b> The proposed REDD+ PaM should contribute to enhance capacity to meet existing institutional mandates</p>
<p><b>c) Respect for the knowledge and rights of indigenous peoples and members of local communities, by taking into account relevant international obligations, national circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples</b></p>	<p><b>c1.</b> The proposed REDD+ PaM should, in addition to existing administrative and judicial recourses to justice, include, where necessary, procedures to resolve disputes among stakeholders (e.g. grievance redress mechanisms) as part of design,  <b>c2.</b> The REDD+ PaM should define the roles, legitimacy and responsibilities of stakeholders to reduce corruption and enhance transparency and accountability  <b>c3.</b> The proposed REDD+ PaM should identify, recognize and respond to local (particularly forest-dependent) communities’ cultural knowledge, norms, statutory and customary rights, which are consistent with the relevant policies and laws  <b>c4.</b> The proposed REDD+ PaM should avoid all forms of discriminations, such as gender inequality, social stratification, vulnerability, language etc.  <b>c5.</b> The proposed REDD+ PaM should support and promote free, prior and informed consent (FPIC).</p>
<p><b>d) The full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities [in REDD+ actions]</b></p>	<p><b>d1.</b> The proposed REDD+ PaM should ensure comprehensive identification, mapping and participation of all stakeholders that affect, or are affected by, the REDD+ PaM  <b>d2.</b> The REDD+ PaM should incorporate regular stakeholder reviews of progress and challenges to improve implementation</p>
<p><b>e) [REDD+] actions are consistent with the conservation of natural forests and biological diversity, ensuring that REDD+ actions are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits.</b></p>	<p><b>e1.</b> The proposed REDD+ PaM should fully adhere to National Strategic Environmental Assessment and Environmental Impact Assessment requirements, as well as those of other international investors, where relevant  <b>e2.</b> The proposed REDD+ PaM should avoid adverse impacts on natural forests and enhance biodiversity and other ecosystem services, both within and outside forests  <b>e3.</b> The proposed REDD+ PaM should avoid adverse social impacts and promote and enhance economic and social well-being, with special attention to the most vulnerable and marginalized groups  <b>e4.</b> The proposed REDD+ PaM should not convert natural forest to other land uses, including conversion from natural to planted forest</p>
<p><b>f) Actions to address the risks of reversals.</b></p>	<p><b>f1.</b> The proposed REDD+ PaM should enhance the assessment of socio-economic, financial, legal and political factors in the analysis of drivers of deforestation  <b>f2.</b> The proposed REDD+ PaM should encourage the provision of livelihood options to all relevant stakeholders to reduce pressure on forest and ensure long-term financial and ecological sustainability  <b>f3.</b> The proposed REDD+ PaM should encourage the provision of social and economic development options such as access infrastructure, amenities and other socio-economic services.</p>
<p><b>g) Actions to reduce displacement of emissions</b></p>	<p><b>g1.</b> The proposed REDD+ PaM should, in its design, address the underlying drivers of deforestation and forest degradation  <b>g2.</b> The proposed REDD+ PaM should be considered for implementation across all the ecological zones in CRS</p>

Source: Nigeria National Safeguards Working Group (NSWG), 2016b.

The P&C were presented formally to the CRS REDD+ Technical Committee for its consideration and validation in November 2016.

### 5.5.2.3 Addressing and respecting safeguards during REDD+ implementation

The four strategic objectives of the CRS REDD+ Strategy, considered critical in addressing the direct drivers of deforestation and forest degradation from agriculture, forestry, energy, mining and infrastructure development sectors, were again for a second time, in their updated iteration, assessed for safeguards compliance in November 2016 with key stakeholders (e.g., relevant MDAs) and selected communities, in order to better understand some of the gaps identified in the PLR framework.



For instance these included discussion of the following PLRS; The Land Use Action, National Forest Policy, the Green Alternative Agriculture Promotion Policy, the EIA Act and CRSFC Law, National Park Service Act, and Minerals and Mining Act, 2007 with recommendations made as follows which were integrated into the strategic interventions found in Chapter 4.

- Institutionalize Free Prior Informed Consent (FPIC), respect for local communities' knowledge and generate benefits without gender bias;
- Strengthen institutional capacities and powers to fully implement provisions on gender equality in the CRSFC law and National Forest Policy
- The National Forest Monitoring System should distinguish between different forest types such as natural forest from other forest types
- Develop methodological guidance for strict compliance with Environmental Impact Assessment provisions in commercial agricultural projects.
- Establish protocol to simplify access and dissemination of information in languages of local communities and other stakeholders.
- Develop methodological guidance for strict compliance with Environmental Impact Assessment provisions in commercial agricultural projects.
- Amend section 19 (Establishment of State Mineral Resources and Environmental Management Committee) of the Minerals and Mining Act, to include representatives of communities, private sector and civil society to make it fully representative of key stakeholders.
- Make EIA and Strategic Environmental and Social Assessments mandatory preconditions, with strong public participation, in the exercise of the powers of de-reservation.
- Make provisions for conservation of biodiversity and ecosystem values in the activities of the mining and IS sectors in relevant legislation and procedural guidelines.
- Provide for offset planting in the grant of mining/quarrying rights and IS activities.
- Operationalize Forest Trust Fund (s.20 of CRSFC Law) to "fund regeneration in depleted areas and general sustenance of the forest".
- Elaborate procedural guidelines and parameters for assessment of ecological values and sensitivity in EIA activities.

#### 5.5.2.4 Next Steps

The principles and criteria may inform further development of Nigeria's national REDD+ safeguards information system (SIS). Given that most of the start-up REDD+ activities will take place in CRS, data can be provided to help develop it. Therefore, the next steps in CRS will be to see how information can be collected and fed into a national level SIS.

In order to produce a SIS, a number of activities will be undertaken;

- define objectives within the Nigerian context,
- consider information needs and structure to demonstrate that safeguards are being addressed and respected,
- design (or build on an existing) technological system requirements to manage and disseminate information;
- and establish functions and the institutional arrangements to operationalize the SIS.

The SIS will report on how the country is addressing and respecting the safeguards throughout REDD+ implementation. With respect to the links with the NFMS, it is planned that this will capture the impacts of the PAMs on deforestation, forest degradation, and conservation and enhancement of forest carbon stocks; it will also capture information relevant to some of the safeguards (e.g. on the risks of displacement and reversals).

## 5.6 Benefit Sharing

The study on incentives and benefit sharing (UN-REDDd, 2016) made a number of recommendations on benefit sharing models applicable to REDD+ based partly on existing experiences in Nigeria. The two key experiences include:

- i. The Ekuri Community Forest Initiative between the community of Ekuri and the CRS Government on collaborative forest management with 50% benefits to each party; and
- ii. The Bio-prospecting Initiative involving the Healing Forest Conservancy (HFC), an international non-governmental organization (NGO), Bio-resources Development and Conservation Programme (BDCP) a Nigeria-based NGO and Shaman Pharmaceuticals Inc., an international private company based in the USA which resulted in the emergence of a benefit sharing arrangement with local cultural groups;

The recommendations are as follows:

1. The design and implementation of REDD+ activities should integrate as many multiple benefits, especially those that communities currently depend on for their livelihoods, spiritual and cultural needs. Focusing on multiple benefits serves equity purposes better than focusing on a single benefit, e.g. carbon. It will also improve the livelihoods of participating communities – increase food security and provide alternative income generating activities – while restoring ecosystems services;
2. A Benefits Sharing Mechanism for REDD+ in Nigeria should consider both carbon and non-carbon benefits. This approach will enhance interest, and provide greater motivation for participation. Benefit distribution should follow a combination of fund-based and pro-poor approach. Beneficiaries will need to be defined and clarified in funding proposals. Benefits could be monetary and non-monetary, carbon and non-carbon.
3. Tenure rights, need to be clarified
4. In anticipation of several states eventually engaging in REDD+ activities, the Federal government could explore the establishment of a comprehensive national emissions trading market and enact the necessary laws to regulate its operation. The existing Carbon Exchange Platform can serve as a basis for the trading platform;
5. In order to make it transparent and accountable, management of the National Carbon Fund should comprise of a board composed of multiple stakeholders' (government, private sector, NGOs and Community representatives) to ensure accountability and transparency. The Fund could be based at the Central Bank of Nigeria to reduce transaction costs and audited by an independent entity;

## 5.7 National Forest Monitoring System (NFMS)

The building of the National Forest Monitoring System (NFMS) in Nigeria draws on a series of lessons learned from the ongoing establishment of a forest monitoring and MRV system in Cross River State. The work on measurements, reporting and verification already accomplished towards forest monitoring in Cross-River State includes, among others:

### I. Capacity building.

- Several stakeholders have undergone three different streams of training in the use of Remote Sensing/GIS and related capabilities to assess forest cover change and generate Activity Data (AD);
- Stakeholders were provided training in three different streams on National Forest Carbon Inventory, data analysis (including Mangrove sampling and allometric equations);
- Ninety eight (98) community members were trained in sample plots establishment and field measurements for carbon stocks assessment;
- A total of thirty three (33) participants also in three different streams, were taken through the process of technical GHG inventories reporting for ALU and LULUCF.

### II. Systems Development

- Completion and equipping of the Remote Sensing/GIS laboratory including computer hardware, software and peripherals, and broadband Internet facility for the Ministry of Climate Change and Forestry;
- Procurement of full complement of modern forest carbon inventory equipment including soil sampling equipment and field kits;
- Establishment of 80 sample plots across 62 local communities of CRS to estimate carbon stocks and Emissions Factors;
- MRV database was developed for CRS, with Remote Sensing and Forest Inventory epoch datasets comprising hotspots, Land use change matrices, real time and historic inventory data from temporary and permanent sample plots, etc.

### III. Technical Studies and Reports

- Spatially explicit analysis of drivers of deforestation and forest degradation was conducted;
- Draft NFMS Action Plan clearly spelling out institutional arrangements at both National and CRS levels with roles and responsibilities well defined and developed;
- Draft Sub-national FREL/FRL developed for CRS with defined emission base year and acceptable National Forest definition based on the following basic minimum parameters - 0.5ha area; 15% crown cover; and 3m tree height.
- Forest Carbon Inventory Standard Operational Manual produced with 1000 copies printed and delivered to relevant stakeholders.

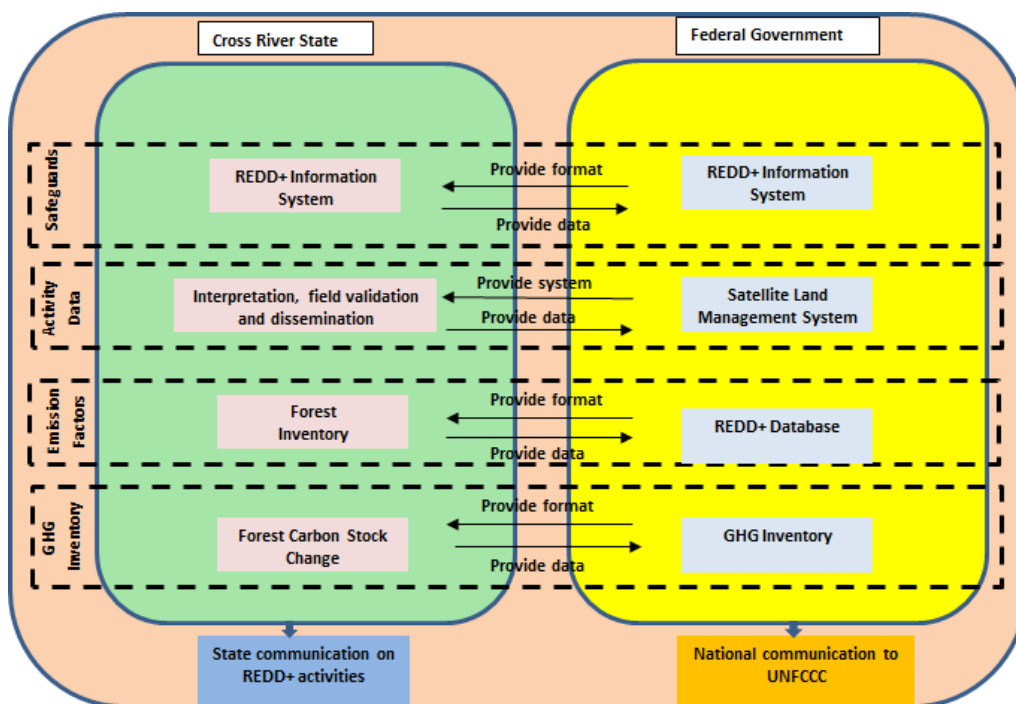
### IV. Stakeholders Engagement and Activation

- Relevant technical stakeholders engaged throughout the process including communities, MDAs, Academia, private sector, NGOs, CBOs and the media during the course of CRS Strategy development with clear definition of roles with respect to each of the pillars of the NFMS (SLMS, NFI and GHG-I);
- Technical Working groups for each of the pillars and for the overall MRV were formed and animated; and

- Additional financial support secured from the Governors’ Climate and Forest Trust Fund (GCF) to complement capacity strengthening efforts and other MRV activities in CRS.

The monitoring of local livelihood benefits of REDD+ activities will be exceedingly important, given the extremely high deforestation rates and pressures on remaining forests in Nigeria.

For all components of the NFMS, there will be two-way communication between the CRS and the Federal Government. For the MRV system, the Activity Data as interpreted, validated and disseminated in the state, will allow field validation for the national level, while the state-level Forest Inventory will provide data to the national REDD+ database, the format provider for the state level. Finally, for the GHG inventory component of the MRV system, the determination of forest carbon stock change in CRS will allow the verification of the national GHG inventory, which as it develops will eventually provide the assessment for the state level. Like the MRV components, the data flow will be two-way, since the federal level will provide the format needed for the safeguards at state level (Figure 15).



**Figure 15:** Overview of linkages in the MRV system between CRS and Federal levels

The monitoring system intends to apply a stepwise approach, both spatially and temporally to enable an evolutionary process towards a full, nationwide MRV system in Phase III, while also being useful in intermediate stages. First, it enables the assessment of the results from REDD+ activities, as required for phase II, using two pillars that provide data on: (i) forest cover changes and activity data, and (ii) the safeguards. Furthermore, it allows Phase III reporting on: (i) the assessment of the emission factors, and (ii) the evaluation of anthropogenic emissions by sources and anthropogenic removals by sink resulting from REDD+.

Both national and sub-national systems are complementary in time, allowing the reporting of the activities during phase II and the performance under phase III, in an integral, progressive way. The systems are also complementary in space allowing Cross River State and Federal government to report their activities.

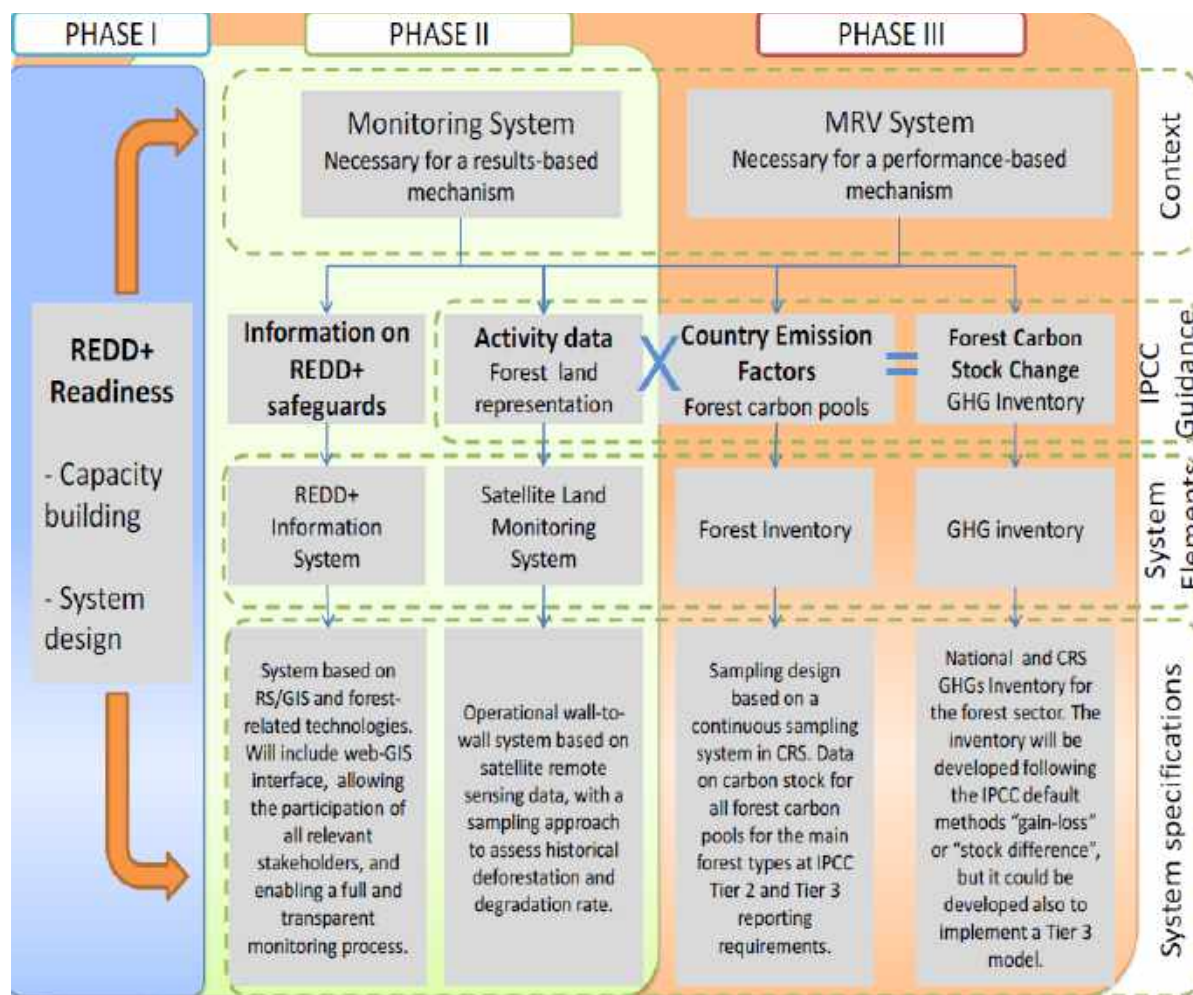


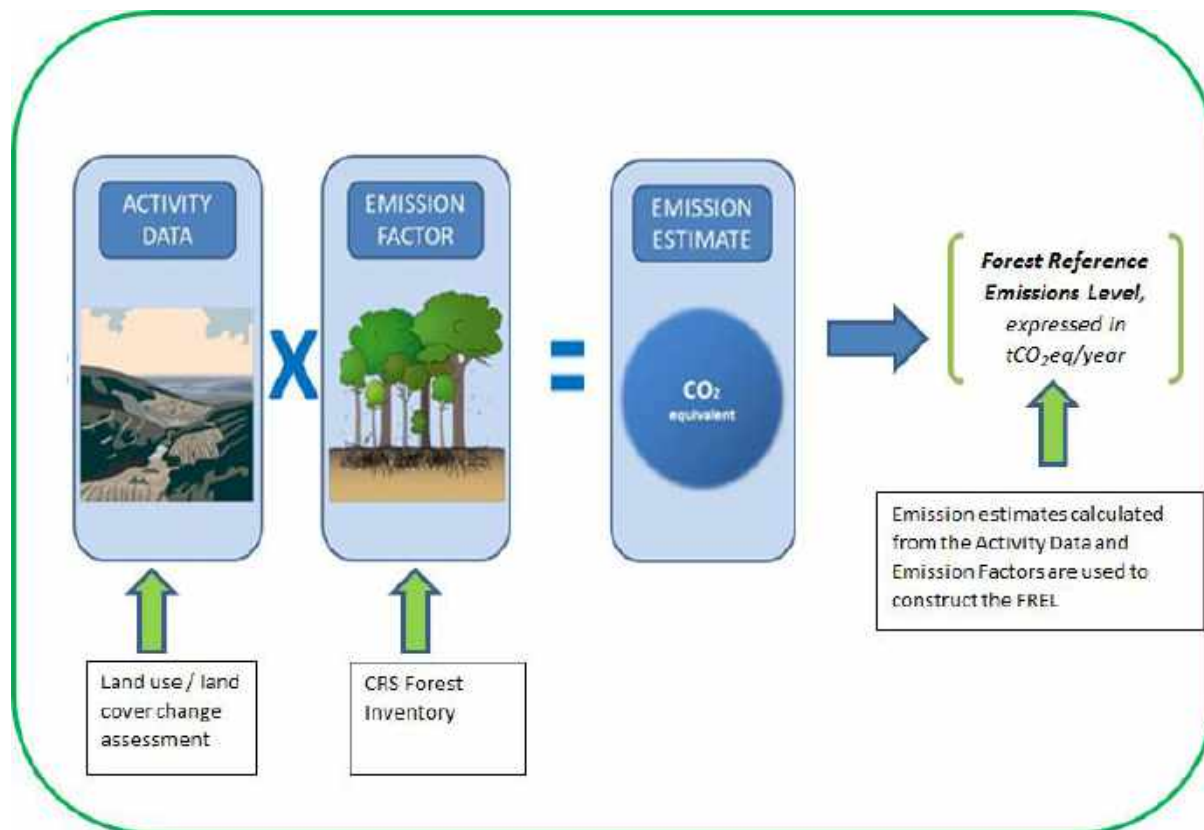
Figure 16: Proposed integrated approach to building both Monitoring & MRV systems in Nigeria/CRS

## 5.8 Forest Reference Emission Level/Forest Reference Level (FREL/FRL)

According to the UNFCCC, a forest reference emission level or forest reference level (FREL/FRL) is a "benchmark for assessing performance" of actions taken under a REDD+ strategy. It should be based on historical data, visual point interpretation, Cumulative Deforestation Model (Logistic Regression) and may be adjusted for national circumstances. The UNFCCC agreed that FREL/FRL may be developed in a stepwise approach, improving over time to allow countries to incorporate better data, improved methodologies, and additional pools. In addition, the UNFCCC states that subnational FRELs/FRLs may be developed as an interim measure.

CRS/Nigeria intends to align its FREL/FRL development with guidance from the UNFCCC. The development of FREL/FRL in the country will follow a stepwise approach with the intention that FREL/FRL will be further

developed and refined over time. The building blocks for development of FREL/RL are depicted in Figure 16 below. It must be noted that FREL/FRL uses the same building blocks or pillars like MRV: the difference stems from the fact that historical data is used for FREL/FRL while MRV uses future data collected. UNFCCC insists that FREL/FRL be consistent with MRV, so that actual performance is assessed during monitoring.



**Figure 17: Building blocks for development of FREL/FRL for CRS**

The FREL/FRL are important tools for judging the effectiveness or the impact of REDD+ activities and policies on forest carbon emissions in line with the Decision 12/COP.17 of the UNFCCC. It therefore aims to establish a reference emission level including a base year from which future emissions will be compared during REDD+ implementation phase to assess performance based on deviations from the baseline or reference level. This will be used to assess the effectiveness of performance of policies and measures (PaMs) put in place vis-à-vis, the business as usual (BAU) scenario. To this end, country/state emissions reductions can be demonstrated or proven.

The LULUCF assessment of CRS will generate historical Activity Data (AD) while the CRS Forest Inventory (FI) will provide data on Emission Factors (EF) which when multiplied with the AD will provide emission estimates in CO<sub>2</sub> equivalent. These emission estimates will then be used to construct the Forest Reference Emission Level (FREL)/Forest Reference Level (FRL) (Figure 17). The main carbon pools to be included in the FREL/FRL are above ground and below ground as decided by the National Working Group on MRV (Table 19). Table 20 provides a summary of uncertainty estimates (95%) for carbon pools disaggregated by land use types.

**Table 19:** Summary for Aboveground Biomass (AGB), Belowground Biomass (BGB) and Carbon stocks for different forest types in Cross River State

Land use Type	ABG (t/ha)	ABG (tc/ha)	BGB (tc/ha)	ABG tCO2/ha	BGB tCO2/ha	Total Biomass tCO2/ha
Derived Savanna	99.65±132.6	46.84±62.30	20.91±28.4	171.73±228.5	76.67±104.20	248.0±332.6
Farmland	80.58±56.8	37.87±26.69	16.52±11.64	138.86±97.87	60.57±42.69	199.4±140.5
Gmelina	162.85±54.3	76.54±25.56	34.11±8.98	280.64±93.71	125.08±32.92	405.72±126.00
Montane	709.88±245.74	333.65±115.50	154.74±53.47	1223.37±423.50	567.37±196.04	1790.73±619.53
Open Forest	311.41±119.72	146.36±56.27	67.57±27.45	536.67±206.32	247.76±100.66	784.43±306.92
Swamp	76.42±51.94	35.92±24.41	15.67±10.65	131.70±89.51	57.44±39.04	189.15±128.55
Tropical High Forest	531.71±190.17	249.90±89.38	115.82±43.66	916.32±327.73	424.68±160.10	1341.00±487.78
Mangroves	380.57±210.64	178.87±99.00	163.15±72.24	655.85±363.00	598.23±264.89	1254.08±626.59
Forest Land*	392.39±68.88	184.42±31.74	94.10±16.18	676.23±116.38	345.04±59.32	1021.23±175.28

Source: National MRV Working Group, 2016. \* Forest Land values were calculated as a weighted average of the means from the different forest type estimates.

N.B. Annual Emissions (Total Biomass) = AD X EF = **15 120 331** tons CO<sub>2</sub>e/year

**Table 20:** Uncertainty estimates (95%) for carbon pools disaggregated by landuse types

Land Use Type	ABG (t/ha)	ABG	BGB	ABG	BGB	Total Biomass (tCO2/ha)
Derived Savanna	133.00%	133.00%	135.90%	133.00%	135.90%	133.90%
Farmland	70.50%	70.50%	70.50%	70.50%	70.50%	70.50%
Gmelina	33.40%	33.40%	26.30%	33.40%	26.30%	31.10%
Montane	34.60%	34.60%	34.60%	34.60%	34.60%	34.60%
Open Forest	38.40%	38.40%	40.60%	38.40%	40.60%	39.10%
Swamp	68.00%	68.00%	68.00%	68.00%	68.00%	68
Tropical High Forest	35.80%	35.80%	37.70%	35.80%	37.70%	36.40%
Mangroves	55.30%	55.30%	44.30%	55.30%	44.30%	50.00%
Forest Land (Weighted average)	17.60%	17.20%	17.20%	17.20%	17.20%	17.20%

### 5.8.1 Scope (REDD+ Activities to be included in the FREL/FRL)

Following extensive stakeholder consultations, Nigeria/CRS has expressed the need to include all five REDD+ activities in its scope. However, this may not be tenable and cost effective in the short term to medium term. It is important to take a step-wise approach and bring in more REDD+ activities after gaining experience and expertise. Therefore, under this strategy, the scope of REDD+ activities shall, as finally agreed by stakeholders, initially focus on deforestation with a progressive move to include degradation.

As described in Chapter 3, the major drivers of forest-related emissions in Nigeria/CRS are those listed in Table 2o below. Forest fires are also included as these relate to management effectiveness of the forest

management regimes in the State. The table also includes the perceived importance to GHG emissions and the associated activities that may be included in a FREL/FRL.

**Table 21:** Major drivers of forest-related emissions in Nigeria/CRS and associated activities for FREL/FRL

Importance to GHG emissions	Key Driver	Associated Activity for FREL/FRL
High	Agricultural expansion	Mostly deforestation, some forest degradation
	High demand for fuelwood (firewood and charcoal)	Mostly forest degradation, some deforestation
	Infrastructure development	Deforestation
	Oil/solid mineral exploration and quarrying (and associated settlements)	Deforestation
Medium	Firewood collection	Forest degradation
	Timber harvesting	Forest degradation, some deforestation (on forest roads)
	Forest fires	Mostly forest degradation, some deforestation

### 5.8.2 Scale: management of subnational and project/program FREL/FRL

The UNFCCC has stated that as an interim measure, countries may begin by developing subnational forest FREL/FRL. A key option is for CRS/Nigeria is to begin development of FREL at the state level and this has already been discussed in several validation meetings – as the expectation/plan by the FRN. At the same time, CRS/Nigeria may also allow demonstration projects and programmes to be implemented at a scale smaller than a region within a state. In such cases, CRS/Nigeria may wish to consider providing guidance for such projects/programmes, either in the form of an official national standard or voluntary guidance to ensure transparency, consistency, environmental integrity and to avoid double counting of any REDD+ credits generated. A set of requirements could include, for example, guidance on eligible geographies, use of activity data, emission factors, construction methodology, leakage, permanence, etc.

Institutional arrangements would be needed for CRS/Nigeria to manage crediting, tracking, and compliance with the national standard/guidance. These could include development of a registry, financial mechanisms, and benefit sharing if crediting were to occur at multiple scales (e.g. State, LGA and project levels). In the case of projects implemented prior to development of the national [standard/guidance], the Government may decide how to grandfather in such projects.





## CHAPTER 6: NEXT STEPS

Global climate change negotiations are now poised enter into the “action” phase after COP 22 in November 2016, when member countries agreed to focus on action items in order to achieve the priorities of The Paris Agreement, especially related to adaptation, transparency, technology transfer, mitigation and capacity building.

The National Strategy is ..... and with the launch of the CRS Strategy, Nigeria enters into a period that will enable it to seize the momentum for the implementation of REDD+ in order to advance toward low carbon paths for sustainable development and demonstrate the potential for other States in Nigeria to emulate. The CRS Strategy provides a legitimate basis, due to the long and intense period of stakeholder consultation and through robust analyses, to advance Nigeria towards REDD+ implementation. As CRS explores strategic partnerships and financing opportunities for implementation of the CRS Strategy, this will be accompanied by building and consolidating the gains of the REDD+ process at the national level and serve as a key lever for work toward development and climate change objectives.

This strategy highlights key strategic objectives and interventions that need to be implemented to achieve the triple function of REDD+, mitigation, co-benefits, and achievement of national development goals.

The CRS REDD+ Technical Committee will work to seek political commitment for REDD+ at the State and National level and facilitate the thinking around priority institutional, policy and legislative related measures that will need to be undertaken. Along this path are urgent issues that CRS needs to address in relation to REDD+ governance, including mechanisms such as free, prior and informed consent, institutional implementation structures and monitoring of outputs. The next phase will be marked by the development of specific proposals to enable the policies and measures to be funded. Proposals that will be developed will contain important capacity building and enabling activities to support REDD+ Implementation. The CRSFC Law (2010) already contains a number of progressive provisions supportive of REDD+ implementation but these are currently dormant and can be revitalized or made operational, e.g., creation of a Forest Trust Fund; creation of a Forest Reserve Fund; development of a Forest Sector Strategy; and development of a Land and Resource Use Plan and Management Plan. Requirements and capacity in order to enforce environmental and social impact assessment requirements including development of a bottom-up grievance redress mechanism premised is needed.

Another priority activity will be to review the Terms of Reference (TORs) of the Forest Moratorium Policy instituted in in 2008 to conform to sustainable management of forests principles. The policy, while it may have worked in the initial stages, has currently failed to contain illegal timber harvesting and corruption in the timber sector, and has largely alienated local communities' participation in sustainable management of forests.

Supporting national level architecture for REDD+ including the safeguards information system and the national forest monitoring system, will be an objective of investments and actions. A number of PLR reforms and safeguard measures will also need to be undertaken. In order to move towards implementation, The CRS Government can move to clarify how the REDD+ Communication Strategy will be implemented. The Safeguards Information System (SIS) at the national level will also need to be designed and set up. The Ecological Fund is an existing instrument to enable The CRS REDD+ Technical Committee to mobilize support for creation of a REDD+ funding window within it.

Following the proceedings of COP 23, the moment is here for CRS to embark on a coherent and robust resource mobilization effort to facilitate implementation of the CRS REDD+ Strategy.

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