Integrated analyses for a REDD+ strategy in Nigeria with focus on Cross River State

Report on private sector engagement status in REDD+ and recommendations

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EXECUTIVE SUMMARY

Reducing Emissions from Deforestation and Forest Degradation (REDD+) is an international effort to create a financial value for the carbon stored in forests through offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. REDD+ ("plus") goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.

Nigeria's forests, which currently extend over 9.6 million hectares, have been rapidly declining over the past decades. The current deforestation rate, estimated at 3.7%, is one of the highest in the world. The REDD+ Strategy for Nigeria intends to enhance the value of standing forests and to incentivize sustainable forest management through a multi-stakeholder approach and a green development perspective. The engagement of private sector is imperative for a number of reasons:

a) Forestry includes operations across a range of sectors in Nigeria and Cross River State. The private sector can, and is encouraged, to play an important role in enhancing REDD+ and sustainable, long term returns on investments in forest resources;

b) The private sector can contribute to REDD+ initiatives through its range of expertise and as part of the solution to mitigating climate change by addressing key drivers of deforestation and forest degradation across key sectors and in REDD+ value chains;

c) Some private enterprises impact directly on deforestation and forest degradation through activities such as agriculture, forestry, infrastructure, etc. and on REDD+ value chains;

d) Private sector engagement in REDD+ can bring additional financing to the public sector financing that presently comprises all of the funding for REDD+ in Nigeria; and

e) The private sector is key in designing and implementing market-based mechanisms such as carbon trading in voluntary or compliance markets.

Against this background a study was conducted to determine the current role of the private sector in deforestation and aligned practices, the current and potential roles and responsibilities of the private sector in financing, developing REDD+ strategies, including investment opportunities, and implementation in Nigeria, with focus on specific opportunities in CRS as the pilot state in this effort. This study identified the key private sector actors whose operations and activities impact on deforestation and also determined potential entry points

for effective engagement opportunities for the private sector in order to achieve REDD+ objectives.

The key drivers of deforestation and forest degradation in Nigeria and Cross River State are:

i. Agriculture (both smallholder and commercial),
ii. Fuelwood use,
iii. Unstainable timber harvesting,
iv. Oil/solid mineral exploration and quarrying, and
v. Infrastructure development and land use.

The proximate causes of deforestation and forest degradation in Nigeria and their associated impacts are summarized as follows:

Sector	Proximate causes of deforestation and forest degradation	Impact
Agriculture	• Extensive and unsustainable crop production practices • Agro-processing reliance on wood fuel • Lack of incentives for agricultural intensification • Use of fire for land preparation	Subsistence agriculture in Cross River State is essential for livelihood, particularly in the rural areas of the State. About 87% of the households in rural Cross River State (CRS) practice farming and the main crops cultivated by the subsistence farmers include cassava, yams, bananas, and plantain. It is estimated that between 2000 and 2014, CRS lost forestland to cropland at a rate of 13 500 hectares per year. Currently farmers are achieving from 28% of potential yields for oil palm to 70% of potential yield for cocoyam. Given the high demand and good returns to crop production, farmers are likely to continue expanding the area under cash crop production and hence continue converting forests into crop lands.
Energy	• Felling of trees for charcoal production • Use of charcoal and firewood as the main source of energy	Over 70 percent of the total population of Nigeria relies on fuelwood or charcoal as their major source of energy for cooking and heating purposes. It is estimated that for the rural areas in CRS the average per capita **fire wood** consumption is 1 525 Kg per annum. Assuming clear-felling, this means the average area of forest cleared per year in CRS through firewood collection is estimated at 12 240 ha. **Charcoal production** is one of the activities leading to deforestation and forest degradation in Nigeria. The bulk of charcoal production is associated with felling of both mature and nearly-mature trees from secondary and in some cases primary forests. The per capita charcoal consumption for Nigeria is estimated of 96 Kg per annum. Assuming clear felling, the amount of hardwood forest land cleared per year to meet local and export demand for Nigeria is estimated at 4 800 ha per annum.
Unsustainable timber harvesting	• Uncontrolled harvesting and encroachment of the protected areas • Overexploitation and unsustainable harvesting	Logging and timber extraction in Cross River State is a contentious issue and its contribution to deforestation and forest degradation. Despite a moratorium on logging from 2011, indications are that illegal logging is proliferate. The illegal loggers are largely private/individual operators without an organized or legal identity.

Sector	Proximate causes of deforestation and forest degradation	Impact
	• Overexploitation and unsustainable use of forests Uncontrolled forest fires	
Oil/solid mineral exploration and quarrying	• Felling of trees to create space for mining site and settlements for labour • Harvesting of timber for mining infrastructure • Clearing of forests and pollution of the environment from mine effluents detrimental to biodiversity integrity	There are currently no further oil exploration activities in Cross River Sate. Cross River State is rich in solid minerals, including limestone, baryte, clay, salt, tin, granite basalt, quartzite, kaolin, and feldspar. 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). 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. 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. While there is no available data clearly indicating exactly the degree of impact these activities have had on the forests and the environment, key informants agreed that there has been significant negative impact on the forests mostly because there is no policy compelling exploring and extracting industries to reinvest and rehabilitate opened up and degraded lands including forest
Infrastructure development and Land use	• Unplanned land use that has no regard for forest integrity and biodiversity conservation	The construction of infrastructure has resulted in the clearance of forests to accommodate infrastructure for the growing population, estimated to be growing at between 2.8 and 3.0 percent per annum. The infrastructure developed include housing, industries, market areas, ports, schools, railways, airports and highways.

The Table below provides a summary of prioritized issues and options for addressing the key drivers of deforestation and forest degradation in Nigeria.

ISSUE	OPTIONS
1.1 Loss of Forests due to Agricultural Expansion	1.1.1 Promotion of Climate Smart Agriculture (CSA) including Conservation Agriculture (CA) and Agroforestry (AF).
	1.1.2 Promotion of efficient use of land through integrated land use planning and management.
	1.1.3 Promotion of afforestation/reforestation programmes
1.2 Energy – High demand for Fuelwood (Firewood and Charcoal)	1.2.1 Formulation of strategies to address charcoal production and utilization and promotion of alternative renewable energy sources including strategic partnerships.
	1.2.2 Scale up fuel woodlots on-farm.
1.3 Unsustainable Timber Harvesting (Legal and Illegal)	1.3.1 Review the Terms of Reference of the Forest Moratorium and ensure their strict compliance with sustainable management of forests.
	1.3.2 Re-valuation of timber resources to determine appropriate license fees, levies and penalties in order to boost revenues and ensure biodiversity conservation.
	1.3.3 Raising awareness among local communities, civil society, private sector, policy makers and the media on the benefits of REDD+.
1.4 Infrastructure Development That Does Not Take Into Account Environmental and Social Safeguards	1.4.1 Enforcing Environmental Impact Assessment (EIA) and Strategic Environmental and Social Assessment (SESA) provisions.
	1.4.2 Developing and enforcing GRM mechanisms that are responsive and central to local community concerns for all major infrastructural developments.

ISSUE		OPTIONS	
1.5	Oil/solid mineral exploration including quarrying that does not take into account environmental and social safeguards	1.5.1	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.
		1.5.2	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.
		1.5.3	Enforcing legislation of NPs as no go-areas for solid mineral exploration and quarrying.

Key Actor Groups engaged with for this study comprised for-profit entities, BMOs, CBOs, NGOs (including community-based environment-focused NGOs), CSOs and relevant key MDAs. The study shows that while relevant government [public sector] bodies are quite conversant with environmental and REDD+ issues, their counterparts in the private sector had quite limited levels of awareness ranging from zero – average depending on their enterprise sectoral type/activities. Thus relevant government agencies, environment-focused NGOs and CBOs knowledge levels were very high while approximately 90% of private sector for-profit organizations had huge knowledge gaps. Interestingly, a few banks and other non-financial institutions, such as insurance companies, have incorporated environment and REDD+ friendly practices in their business (e.g. once-off tree-planting activities under some of their CSR programmes; conducting business plan EIAs prior to lending) while most others in this sub-sector are either ignorant or not motivated to do so.

Globally and in Nigeria, there is a huge funding gap between the requirements to effectively address deforestation and forest degradation and the public funds that are currently available. Hence the private sector and financial institutions are important to tackle this funding gap. The private sector can offer a varied and substantial amount of expertise, skills and innovation that could greatly add to the efficiency and success of REDD+ activities. Roles for investors and asset managers include equity investors or acting as brokers or intermediaries. Debt finance can take the form of loans, leveraged funds or individual projects. Insurance and guarantees are crucial ways to manage both conventional investment risk in the forestry sector as well as risks that are more specific to investments in the area of forest-based climate change mitigation.

Nigerian financial system is made up of the banking (commercial banks and merchant banks) and non-banking financial institutions (NBFIs) - finance companies, micro-finance banks, bureaux-de-change, discount houses, development finance institutions, insurance, and primary mortgage banks - under the supervision of the Central Bank of Nigeria (CBN). Commercial and merchant banks are deposit-taking institutions offering loans (mostly short

term) and providing other services. NBFIs are financial institutions that do not have a full banking licence and thus cannot take deposits. However, they both compete and complement banking institutions by providing alternative financial services such as contractual savings (pension funds and insurance companies), investment intermediaries (finance companies, mutual funds and money market) and consumer credit.

A trend analysis of the credit extended to the private sector by deposit banks expressed as a percentage of GDP for Nigeria shows that while deposit bank credit has generally been on an upward trend since 1991, after the financial crisis in 2008, credit extended to the private sector by deposit banks has been on the decline. The primary reasons is that banks are yet to fully recover from the financial crisis. On average, deposit banks provide loans to the private sector to the tune of 4% - 6% of GDP. A trend analysis of the loans extended by NBFIs expressed as a percentage of GDP for Nigeria shows that from 1996 to 2009 the loans provided by NBFIs has been increasing. With the global financial crisis, the extent loans provided by NBFIs has been spiralling down. NBFIs provide loans between 0.1% - 0.4% of GDP. Thus, for Nigeria, deposit banks are still a major source of investment financing when compared to NBFIs.

One of the key challenges for REDD+ in Nigeria is how to set up a sustainable long-term financing mechanism for making small compensation payments to thousands of smallholder farmers and micro-enterprise businesses that impact negatively on forests. Sustainable forest management efforts may be enhanced by extending small amounts of credit to smallholders to help them establish alternative livelihoods that do not involve deforestation or forest degradation. Microfinance institutions could play an important role in providing the necessary micro-payment and micro-credit infrastructure to support REDD+. To promote alternative livelihoods for local communities and reduce the pressure on the forest, micro-finance institutions can service members of the communities by providing low interest rate loans to community members for eligible “environmental activities”, as determined by the micro-finance institutions governing body.

Insurance companies, pension schemes, and the Nigeria Stock Exchange can play an important role in providing long-term development funds in light of the REDD+ Programme initiative in Nigeria. For example a trend analysis of the insurance premiums collected by insurance companies as a percentage of GDP since 1990 shows that the insurance premiums has been steadily increasing from 1997 to 2009. The premiums have been on the decrease since 2010 due to the impact of the global financial crisis. During 2016, Nigerian regulators have approved plans to enable the investment of as much as $20 billion of pension-fund money in the development of the country’s infrastructure. The domestic market capitalization

of the Nigeria Stock Exchange (NSE) rose from ₦8 910 billion (USD 56.4 billion) in 2012 to ₦44 300 billion (USD 224 billion) in 2016.

To manage investment risk in agriculture, the Central Bank of Nigeria has been implementing the Agricultural Credit Guarantee Scheme Fund (ACGSF) and the Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL). The Fund guarantees credit facilities extended to farmers by banks up to 75% of the amount in default net of any security realized. An analyses of the loans disbursed under the ACGSF shows that the total nominal value of loans disbursed under the fund has been increasing since 1994, increasing from N81 million in 1994 to N12.5 billion in 2014.

The value of ACGSF loans disbursed for plantation crops increased drastically over the loans given to other cash crops as from 2005. The value of loans disbursed for other cash crops was highest in 2014 at N 104 million whilst that for plantation crops was N402 million in 2015. The percentage of ACGSF loans disbursed for cash crops, was higher for other crops (cotton and groundnut) from 1988 till 2002. Since 2003, the percent cash crop loans paid out for plantation crops (i.e. oil palm, rubber, and cocoa) has been increasing. The value of loans disbursed for plantation crops was highest in 2015 at N402 million.

NIRSAL is an initiative of the Central Bank of Nigeria (CBN), the Bankers Committee (BC) and the Federal Ministry of Agriculture & Rural Development (FMARD). It provides guarantee in form of Credit Risk Guarantee (CRG) as a comfort for the Banks to lend and also incentivize the farmers through provision of Interest Drawback Program (IDP) to be paid quarterly based on the agricultural project. The Guarantee ranges from about 30-75% depending on the Agricultural value chain involved. IDP also ranges from 20-40% depending on the category. Thus the REDD+ programme can tap into the ACGSF and NIRSAL for risk management of investment in REDD+ activities.

Following from the green growth approach adopted by the Federal Government of Nigeria, for the finance sub-sector, there subsists a Central Bank of Nigeria Policy mandating all banks, etc. in Nigeria to implement the Nigerian Sustainable Banking Principles (NSBP) evolved and signed off by the Nigerian Bankers' Committee in 2012 – to ensure that banks support and drive environment-friendly practices in the business environment they and their clients operate in. Adoption and implementation of the NSBP is currently low mostly as a result of perceived knowledge gaps of the benefits of implementation.

ACRONYMS

BMO	Business Membership Organisation
CALCCIMA	Calabar Chamber of Commerce, Industry, Mines and Agriculture
CBN	Central Bank of Nigeria
CBN-SSEDC	Central Bank of Nigeria South-South Enterprise Development Centre
CBO	Community Based Organization
CER	Corporate Environmental Responsibility
CO_2	Carbon dioxide
CR -IPB	Cross River Investment Promotion Bureau
CR MEDA	Cross River Micro Enterprise Development Agency
CR-MAN	Manufactures' Association of Nigeria – Cross River Chapter
CR-NASME	National Association of Small & Medium Scale Enterprises – Cross River Chapter
CR-NASSI	National Association of Small Scale Industrialists – Cross River Chapter
CR-NGOCE	Cross River Non-Governmental Organisations Coalition for the Environment
CR-OPS	Cross River Organised Private Sector
CR-REDAN	Real Estate Development Association of Nigeria – Cross River Chapter
CRS	Cross River State
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
EIA	Environmental Impact Assessment
FAO	Food and Agriculture Organisation
FIRS	Federal Internal Revenue Service
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IRS	Internal Revenue Service
LGA	Local Government Area
LGC	Local Government Council
MDA	Ministry, Department, Agency of Government
MFB	Microfinance Bank
MIDC	Ministry of International Development Co-operation
MSME	Micro, Small and Medium Scale Enterprises
NACCIMA	National Association of Chambers of Commerce, Industries, Mines and Agriculture
NANTA	National Association of Nigerian Tour Agencies
NASRDA	National Space Research and Development Agency
NGO	Non-Governmental Organization
NSBP	Nigerian Sustainable Banking Principles 2012
NTFP	Non-Timber Forest Product
OPS	Organised Private Sector
PA	Protected Area
PPD	Public Private Sector Dialogue

PPEM	Public-Private Engagement Mechanism
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RSPO	Roundtable on Sustainable Palm Oil
UNFCCC	United Nations Framework Convention on Climate Change
WB-CRADP	World Bank – Cross River Commercial Agriculture Development Programme

1. BACKGROUND TO THE STUDY

The Terms of Reference refer: This assignment will assess the role of private sector in the implementation of REDD+ and identify strategic opportunities and entry points for private sector engagement. The outputs of this consultancy will be integrated into REDD+ Strategy development, used to enhance private sector engagement in REDD+ processes, and position private sector actors as key collaborating partners in the implementation of a sustainable REDD+ mechanism as it continues to evolve. The engagement of private sector is imperative for a number of reasons:

a) Forestry includes operations across a range of sectors in Nigeria and Cross River State. The private sector can, and is encouraged, to play an important role in enhancing REDD+ and sustainable, long term returns on investments in forest resources;

b) The private sector can contribute to REDD+ initiatives through its range of expertise and as part of the solution to mitigating climate change by addressing key drivers of deforestation and forest degradation across key sectors and in REDD+ value chains;

c) Some private enterprises impact directly on deforestation and forest degradation through activities such as agriculture, forestry, infrastructure, etc. and on REDD+ value chains;

d) Private sector engagement in REDD+ can bring additional financing to the public sector financing that presently comprises all of the funding for REDD+ in Nigeria; and

e) The private sector is key in designing and implementing market-based mechanisms such as carbon trading in voluntary or compliance markets.

1.1 Objectives of the Assignment

There are two core objectives of this analysis of REDD+ private sector investment opportunities in Nigeria:

1. To identify opportunities for engaging private sector to contribute to achieving REDD+ results, that is, by reducing the impact on forests through better regulation/legislation or economic incentives and/or possibly through private sector contribution to REDD+ finance. This entails developing an understanding of the nature, feasibility and magnitude of potential private sector REDD+ investment opportunities in Cross River State and at the national level in Nigeria. This can potentially build on previous UN-REDD Programme work on multiple benefits in Nigeria (see Background Documents).
2. To understand the potential role of the private sector in REDD+ and assist with private sector capacity building to contribute to REDD+ in Nigeria. This second objective is two-fold: (i) to increase awareness and understanding of REDD+ within the private sector, and

(ii) to increase the level of understanding about the private sector amongst REDD+ stakeholders.

1.2 Scope of Tasks

The following tasks will be carried out:

1. Provide a baseline overview of the drivers of deforestation and forest degradation in Nigeria and identify any interventions - especially those involving the private sector—that have been proposed or employed to tackle these drivers. The drivers' analysis should both focus on direct drivers of deforestation and indirect drivers (including e.g. subsidies to farmers or other forms of incentives to currently add pressure on forests)
2. Identify the key private sector players in sectors particularly sectors whose activities impact on deforestation and those that could be relevant in identifying solution. Sectors such as agriculture, mining, forestry, trade, energy, banking and finance amongst others, their type of and potential interventions in the REDD+ value chain, their interests and motivations;
3. Map key bank and non-bank financial actors in the Nigerian financial system and the relevant services they provide.
4. Describe the terms and conditions under which finance and investment are provided to actors in the key sectors identified above (e.g. for debt products: sectors/activities lent to, size/maturity/interest rate of loans, collateral requirements, repayment terms, social and environmental risk policies, etc.).
5. Identify key on-going REDD+ (related) initiatives that are supported by the private sector including the form and nature of their support (e.g. corporate social responsibility, on the ground investments, clean technology);
6. Develop a 'long-list' of possible private sector REDD+ interventions that would address the drivers of deforestation and forest degradation from across multiple sectors and identify what enabling environment (i.e. incentives) will have to be provided by the state/federal government to make it (economically) attractive.
7. Develop a framework using multiple criteria to highlight the private sector REDD+ investment opportunities with the most potential in the short to medium term. The criteria may include the following (among others): GHG abatement potential/environmental impact, level of community/gender benefits and poverty reduction, clarity of land tenure, scalability/potential size of opportunity, unit size of opportunity, relative cost, commercial viability, ease of implementation, return 'break-even time', opportunity cost, likely government interest, compatibility with current livelihoods, risks related to permanence/leakage, and risks and/or difficulties associated with land tenure.

8. Identify a short-list of stakeholders (using a ranking system) who are relevant to the highest scoring potential opportunities, and interview them to deepen understanding of the constraints, opportunities and critical enabling steps necessary for implementation.
9. Interview representatives from financial actors identified above to assess constraints and opportunities to finance high scoring REDD+ activities based on the ranking system described above under point vii.
10. Prepare a summary identifying, classifying and prioritising potential sub-national and national private sector REDD+ investment opportunities in Nigeria, describing critical constraints to these investments, and recommending possible next steps.
11. Produce a summary of opportunities and constraints of the Nigerian finance sector to provide finance and investment for private sector REDD+ activities.
12. Provide a listing of on-going private sector contributions to REDD+ as well as an estimation of potential private sector contribution to REDD+ related programmes or initiatives, and if possible, the delivery mechanisms for the amounts provided;
13. Outline and assess challenges private sector faces or likely to face in the implementation of REDD+;
14. Recommend strategies that should be developed or promoted to enhance private sector engagement in REDD+ including those that may be relevant to:
    a. Incentives to the private sector in reducing emissions from deforestation and forest degradation;
    b. Development of special instruments to facilitate public-private-partnerships such as risk sharing instruments, enterprise development and innovative facilities;
    c. Identification of priority sectors/areas that the private sector can engage in (e.g. REDD+ smart ventures, technologies and opportunities);
    d. Identification of potential role(s) for companies and corporations in REDD+ implementation;
    e. How an enabling environment can be created to enhance private sector engagement in REDD+ with considerations of the existing privileges and incentives for investments including from regulatory, policy and institutional points of view;
    f. How to make a strong business and economic case to the private sector to invest in REDD+;
    g. How to initiate or build on existing platforms to promote dialogue and partnerships around REDD+ investment opportunities;
    h. How private sector can practice and/or facilitate observation of REDD+ safeguards particularly in the areas of managing risks, ensuring full and effective participation of the private sector and respect for the knowledge and rights of communities; and

i. A roadmap for engaging private sector including developing an agenda for a follow-on REDD+ private sector engagement workshop. Building on the analysis and recommendations from the review workshop, the industry/private sector workshop will likely bring together a cross-sectoral group of key experts and business leaders to build momentum, discuss developing systems and approaches, and clarify next steps for REDD+ private sector investment in Nigeria. The cross-sectoral group will collectively combine knowledge of the forest and agriculture sectors (and any other relevant drivers of deforestation and forest degradation), the private sector, improving agricultural productivity, lowering risk, promoting sustainable supply chains, increasing community-level benefits, and related social, legal and institutional issues.

15. Present report to private sector stakeholders on the findings, conclusions, and preliminary recommendations of the analytical work at a workshop/breakfast meeting.
16. Incorporate stakeholder comments in a final report.
17. Prepare a Policy Brief on Private Sector Engagement with the Support of the UN-REDD team.
18. Support the integration of the private sector work into the final Issues and Options report and the draft National REDD+ Framework Strategy and the Cross River State REDD+ strategy.

1.3 Expected Deliverables

The expected deliverables for the assignment are as follows:

i. Inception report including a complete methodology and approach to the task;
ii. Inception workshop/round table with private sector in Calabar;
iii. Interviews, focus meeting, field visits– all resulting in a progress report (with power-point summary) and preparation of draft report;
iv. Internal Review, Revision of Report and participation in High level private sector meeting;
v. Final consolidated report Private sector financing, investment, and engagement opportunities for REDD+ strategy development and implementation in Nigeria, with focus on specific opportunities in CRS;
vi. Support the integration of private sector considerations into Issues and Options report and draft National Framework REDD+ Strategy and Cross River State REDD+ Strategy;
vii. Preparation of Policy Brief for private sector; and

1.4. Methodology

The study used the participatory approach to engage with relevant REDD+ stakeholders in Cross River State. It was hoped that this strategy would also be employed at the National (Federal) level particularly in Abuja and Lagos. For secondary data, the study relied on desk review of programme progress/activity reports, previous analytic studies and relevant documents from other sources. For primary data, the study relied on key informant interviews from sampled private sector institutions with actual or potential impact on drivers of deforestation and forest degradation, the civil society and government institutions. The list of stakeholders consulted is presented in Appendix 1.

2. STATE OF THE FORESTS IN NIGERIA

2.1 Nigeria Forests Overview

Forests in Nigeria are generally divided into three categories, namely, the National Parks, Forest Reserves and Community Forests. The National Parks and the Forest Reserves are managed and controlled by the Federal and State governments respectively through their various agencies. The community forest on the other hand is left in the hands of the local people who have exhibited various levels of traditional management practices (Mbina, 2014).

With an estimated 9.6 million hectares of forest still remaining, Nigeria has lost over 50% of its original forest cover in the last twenty years (GCF, 2014). The remaining forests and reserves in Nigeria continue to be under heavy pressure as the annual estimated deforestation rate is 3.7%, which is among the highest in the world (Eneji, et. al. 2014).

The tropical high rainforest is an important source of raw materials for most industries and factories, paper products, toothpick, different species of food, including timber and non-timber forest products. Other plant and animal medicines and other therapeutic medical cure for most ailments come from forest. Most of the pharmaceutical products in the world come from the forest, therefore, when forests are destroyed, it denies the undiscovered cures for diseases and drugs beneficial for the development of man (Eneji, et. al. 2014; Ayuba et al, 2003 and Ayuba, 2005).

Forest is also home to the majority of biodiversity (species), species of plants and animals and many other organisms, especially the majority of species that have become extinct or endangered world. The forest also acts as a basin and also improves air quality by acting as a carbon sink, and also produces oxygen consumption of man and photosynthesis to produce food of man. Forest through evapotranspiration determine rainfall and replenish the

atmosphere; cools and regulates the Earth's climate; prevents soil erosion; landslides and soil enriched (Eneji, et. al. 2014; Agarwal & Gupta, 2005).

2.2 Cross River State

Over the last decades, Cross River State has lost about 19% of its tropical high forests due to inadequate funding of the Forestry Department, increase in population and immigration as well as plantation establishment (CRS, Forestry Strategy). The population of Cross River State is about 2.89 million (2006 census) with a land mass of about 21, 265km^2. There are about 2000 communities in the rural areas of the state which harbors 70% of the population. The main occupations of Cross Riverians include farming, hunting, extraction and gathering of timber and non-timber forest products. At present, the state has about 31% of the total remaining tropical high forests in Nigeria. These forests are made up of the Forest Reserves, Community forests and Cross River National Park forests (Fon et al., 2014).

GCF member Cross River State (CRS) is home to nearly 50% of Nigeria's remaining tropical high forests, making the state a focal point in efforts to protect the most pristine remnants of Nigeria's forests (GCF, 2014). In CRS the fight against deforestation and forest degradation has taken significant steps forward in recent years with the State enacting a moratorium on logging in 2008, passing a new Law on the Management and Sustainable Use of the Forest Resources of Cross River State in 2010, and undertaking an ambitious reforestation program which has enlisted the help of rural communities to plant indigenous tree species. The significant political will demonstrated by CRS led to its selection as the pilot state for the United Nations REDD program in Nigeria (GCF, 2014).

The State covers a total land area of 21,560 km^2 of which 35% (7610 km^2) is covered by tropical high forest, while 5% is swamp and mangrove forest. Together, these account for about 50% of the remaining rain forest in Nigeria. Of this tropical high forest area, approximately 4000 km^2 was designated as Cross River National Park in 1991. The total forest estate available in Cross River State outside the National Park is 3960 km^2 of which 28% is community forest and 72% is designated as forest reserves (Ogogo, Odigha, and Aya, 2013; Agbor, 2008). CRS has 15 Forest Reserves including the newly constituted mangrove forest reserve, one Wildlife Sanctuary and one National Park in Cross River State. Table 1 presents the Cross River State forest resources. For the purpose of management, the forest land of Cross River State may be classified into three (3) types namely (Fon et al., 2014):

i. Mangrove and swamp Forests which can be found in Calabar Municipality, Calabar South, Odukpani, Akpabuyo,Abi and Bakassi Local Government Areas of the State.

ii. Tropical Rain Forest which exists in Akamkpa, Biase, Yakurr, Obubra, Ikom, Etung and Boki Local Government areas.

iii. The Savannah Forest which could be found in Obudu, Obanliku, Yala, Ogoja and Bekwarra Local Government Areas.

Table 1: Cross River State Forest Resources Ecological Zones

#	**Ecological Zone**	**Area (km^2)**
1	Mangrove forests	480
2	Swamp forest	520
3	Tropical High Forests including the National Park	7,290
4	Plantations	460
5	Other forests	216
6	Other land uses	12,299
	TOTAL	21,256

Source: (Fon et al., 2014; Dunn et al, 1994)

The tropical rainforest in Cross River State has been acknowledged by the International Union for Conservation of Nature (IUCN) as one of the 25 biodiversity hotspots in the world. Extremely rich in fauna and flora many of which are endemic, it has over 1545 species of plants, from 523 genera in 98 families, 6 of these plants are new records in Nigeria and four (4) are new to science and 132 tree species listed by the World Conservation Monitoring Centre as globally threatened. Cross River State is endowed with 119 species of mammals (Ogogo, Odigha, and Aya, 2013; Mamza, 2008).

Based on Mbina (2014) and (Fon et al., 2014) Cross River State Forests can be characterised as follows:

i. Cross River State contains the largest amount of Tropical High forest in Nigeria: 850,000 Hectares;

ii. 30% of Cross River State is forested;

iii. 20,000 people are employed in timber extraction, processing and marketing in Cross River State;

iv. There are 45 local Forest Management Communities in Cross River State;

v. Some areas in Cross River State forest contain up to 1000 species from over 500 genera of higher plants;

vi. Over 434 useful plants and animals[1] exist in the forests of Cross River State generating over 700 non-timber forest products;

vii. The most important non-timber forest products (NTFP) are bush meat (including cutting grass, porcupine and small dear), chewing sticks, bush mango, cane rope and leafy vegetables like afang; and

viii. Cross River State loses well over 7,000 Hectares of virgin tropical forest per year;

ix. The volume of timber from Tropical High Forest (THFs) in Cross River state excluding the Cross River National Park is about 67 million M^3 (Dunn et al, 1994);

x. The volume from forestry plantations of various species is about 8.58 million M3 ;

xi. Over 700 different non-timber forest products have been identified in Cross River State of which over 430 species are harvested in the State. For instance, there are over 50 million matured large stems and 30 million small stems of rattan canes while there are over 2.5 million stands of bush mango.

The major economic plant and animal species found in the forests of Cross River State are presented in Appendix 2.

2.3 Deforestation in Nigeria and Cross River State

The rate of deforestation in Nigeria in the 1980s was estimated at about 400,000 ha per year, while reforestation was at mere 3,200 ha/yr (Eneji, et. al. 2014; FAO, 2007). According to FAO (2007), Nigeria has the highest rate of deforestation in the world as of 2005. Between 2000 and 2005 the country lost 55.7% of its primary forests, and the rate of forest change increased by 31.2%. Between 1990 and 2000, Nigeria lost an average of 409,700 hectares of forest every year (Eneji, et. al. 2014; Odihi, 2003). Between 1990 and 2005, Nigeria lost a total of about 35.7% of its forest cover, or around 6,145,000 hectares (Eneji, et. al. 2014; FAO, 2007). Food and Agricultural Organization (FAO) estimated that Nigeria destroys about 600,000 hectares of her forest every year through indiscriminate exploitation and husbandry (FAO, 2007).

According to NASRDA & FAO, (2015), for Cross River State, the net forest loss between 2000 and 2007 is 39,907 hectares over a 7 year period, while the annual rate of deforestation within the same period is 5,701 hectare (i.e. 0.67%). Similarly, the net forest loss between 2007 and

[1] The forest of Boki local Government Area in Cross River State serves as a sanctuary for swallow birds from Europe. These birds roost in this forest during the European winter and fly back to Europe after the winter.

2014 is 167,382 hectares over 7 years, while the annual rate of deforestation within the same period is 23,911 hectares (i.e. 2.95%). The implications of this is that over the two periods (2000-2007 and 2007-2014) annual rate of deforestation had risen from an average of 5,701 hectares (i.e. 0.67%) to 23,911 hectares (i.e. 2.95%). This is due to increase in developmental activities in Cross River State between 2007 and 2014 period. Based on this trend analysis, if there is no intervention in controlling deforestation in the State (i.e. the 'business as usual' scenario), then the rate of deforestation will increase over time and therefore move the forest cover in the State to the second transition phase of high deforestation that will result in decrease in forest cover from 640,000 hectares in 2014 to 550,000 hectares in 2040 (NASRDA & FAO, 2015).

3. DRIVERS OF DEFORESTATION & LAND DEGRADATION

Drivers of deforestation and forest degradation can be grouped into two categories: direct and indirect drivers (Geist and Lambin 2002, Rademaekers et al. 2010, Oyebo et al. 2010). Direct or proximate drivers of deforestation and forest degradation are human activities and actions that directly impact forest cover and result in loss of carbon stocks (Kissinger et al. 2012). The major direct drivers of deforestation and forest degradation in Nigeria include the following (NASRDA & FAO, 2015; Eneji, et. al. 2014; Fon et al., 2014; GCE, 2014; Oyebo et al., 2010):

i. Agricultural expansion including pasture development - agricultural land is primarily for subsistence purposes, but does occur for commercial production;
ii. High demand for fuel wood and charcoal, as approximately two thirds of the country relies on wood as a primary source of cooking and heating fuel;
iii. Unsustainable timber harvesting, without adherence to relevant laws, policies, or required fees;
iv. Urbanization and infrastructure expansion, including construction of roads, settlements, mines, dams, pipelines, and hydroelectric dams;
v. Forest fires through the annual bush burning practice; and
vi. Oil/solid mineral exploration & quarrying.

Each of these drivers of deforestation and forest degradation are discussed in turn. Identified issues and proposed solutions or options, where available, to these drivers are also presented.

Each of these drivers of deforestation and forest degradation are discussed in turn. Identified issues and proposed options and solutions, where available, to these drivers are also presented.

3.1 Agricultural Expansion

3.1.1 Agriculture Issues

About 70-75% of the population of Nigeria lives in rural areas, and over 80% of the rural dwellers are involved in agriculture and agriculture related activities. The majority of the farmers are smallholder or small scale farmers, who hold over 90% of the total farm holdings in Nigeria. These small farmers produce about 90% of the food that are consumed in Nigeria.

Agricultural expansion or extensification is the main driver of forest loss in Nigeria and in Cross River State and is characterized by shifting subsistence cultivation (slash-and-burn) by smallholder farmers (Fon et al., 2014) and large scale conversion of forest lands to commercial agricultural plantations for palm oil, pineapples, cocoa, rubber, cassava, etc. The underlying cause for shifting cultivation by smallholders is the inherent low soil fertility after cropping on the same piece of land for a couple of years thus forcing farmers to convert more forest lands to farm lands. It is estimated that after a plot of land has been cleared of bush, within three years it loses up to 50% of its fertility (Mbina, 2014). This is further exacerbated by an increasing growing population leading to pressure for more agricultural land, inadequate investment in modern agricultural production technologies and low access to agricultural inputs for intensification.

Agriculture is the mainstay of the CRS economy employing at least 45 percent of the State's labour force and contributing between 40% and 49% of the State GDP[2] over the years. The loss by Cross River State of oil wells has naturally sharply spiked the State's activities to promote agricultural investment opportunities offered by the state to investors and thereby putting further pressure on the forests.[1]

Subsistence agriculture in Cross River State is essential for livelihood, particularly in the rural areas of the State. About 87% of the households in rural Cross River State practice farming (Enang, 2013). The main crops cultivated by the subsistence farmers include cassava, yams, bananas, and plantain. Estimates by NASRDA & FAO, (2015) indicate that between 2000 and 2007, CRS lost 77 148 hectares of forestland to cropland which increased to a loss of 125 355 hectares between 2007 and 2014.

[2] Cross River SEEDS 2012

Estimating from the work by Enang (2013), Odoemenem and Inakwu (2011), and (Ele, Omini, and Adinya, 2013), the average land holding for smallholder or subsistence households range from 1.2 ha to 2.89 ha with about 48% of the households having an average of 1 ha of land. However, there are those who own as small as 0.3 hectares and those who own as large as 4.0 hectares (Ele, Omini, and Adinya, 2013).

Commercial agriculture or cash crop production in CRS is a major source of deforestation. Cash crops cultivated in the State include cocoa, plantain, oil palm, pineapple, and to some extent rice. These crops are cultivated by both the smallholder and large scale commercial farmers. For example, NASRDA and FAO (2015), based on a focus group session conducted in Kayang community, in one season, smallholder farmers harvested about 124.6 tonnes worth N43,648,000 ($264,533). Furthermore, using remote sensing, NASRDA and FAO (2015), identified deforestation hot spots driven by large scale plantations in Awi, Akamkpa local government area with about 1400 hectares of forest land converted to crop land.

Table 2 shows that on average, currently farmers are achieving from 28% of potential yields for oil palm to 70% of potential yield for cocoyam whilst the local demand across all crops is high to very high. Given the prevailing crop yields, the estimated gross margin computations per hectare show that except for cocoyam with negative returns per ₦ invested, the returns per ₦ invested range from ₦0.14 for cassava to ₦3.57 for rice (Table 3). Thus, given the high demand and good returns to crop production, farmers are likely to continue expanding the area under cash crop production and hence continue converting forests into crop lands.

Table 2: Major Crop Production Characteristics of Cross River State

Crop	Area Under Production (Ha)	Production (tonnes)	Yield (Kg / ha)	Potential Yield (Kg / ha)	Actual Yield / Potential Yield (%)	Subsidies	Demand
Yam	333,680	3,431,427	10,284	20,000	51.4%	No	High
Cassava	440,538	8,810,750	20,000	30,000	66.7%	No	High
Rice	82,950	290,325	3,500	6,000	58.3%	Yes	Very High
Maize	179,250	681,150	3,800	7,000	54.3%	No	Very High
Plantain	400	2,800	7,000	14,000	50.0%	No	High
Cocoyam	48,000	336,000	7,000	10,000	70.0%	No	High
Oil Palm	36,950	184,750	5,000	18,000	27.8%	Yes, improved oil palm seedlings	High
Cocoa	108,000	162,000	1,500	2,500	60.0%	Yes	High

Source: Personal communication - Ministry of Agriculture, Cross River State

Table 3: Major Crop Gross Margin Analysis for Cross River State

Crop	Crop Price per N/Kg	Production Costs / ha (₦)	Gross Revenue / ha (₦)	Gross Margin / ha (₦)	Return per (₦) invested (₦)
Yam	100	300000	1,028,360	728,360	2.43
Cassava	20	350000	400,000	50,000	0.14
Rice	300	230000	1,050,000	820,000	3.57
Maize	200	250000	760,000	510,000	2.04
Plantain	150	350000	1,050,000	700,000	2.00
Cocoyam	15	250000	105,000	- 145,000	- 0.58
Oil Palm	112.5	450000	562,500	112,500	0.25
Cocoa	1124	400000	1,686,000	1,286,000	3.22

3.1.2 Proposed Options for Reducing Agriculture Expansion into Forest Lands

The following options has been proposed to serve as entry points for resolving this driver:

i. Integrated land use planning through the Forest Sector Strategy and Land and Resource Use Management Plan (to designate areas for possible expansion);

ii. Promotion of efficient use of land through integrated land use planning and management.

iii. Improve crop productivity, i.e. production per hectare so that forestry land that is already converted to agriculture is intensively used instead of continuing to convert more forest land. This will be achieved through provision of improved seed or crop varieties, use of organic fertilizer, improved extension services so as to promote the adoption of improved agronomic practices per unit of land.

iv. Cross River is rapidly developing its eco-tourism potentials, and its internationally being acknowledged as a leading tourism destination in Nigeria. Non-consumptive community-based eco-tourism can be promoted as an alternative source of livelihoods. Whilst getting some of the rural population from agriculture, eco-tourism may present a sound foundation for sustainable forest management with a great potential for income generation.

v. Deforested areas due to agricultural expansion can be restored through afforestation (e.g., through adoption of assisted natural regeneration technologies) and reforestation through planting of suitable indigenous or exotic tree species.

3.2 High demand for fuelwood (charcoal and firewood)

3.2.1 Issues around charcoal and firewood

Firewood: In most developing countries, wood is the most reliable source of fuel therefore, people will destroy trees for that purpose. The incessant fuel scarcity has increased the dependence of most people on firewood as a source of fuel thereby increasing the pressure on the forests

Over 70 percent of the total population of Nigeria relies on fuelwood or charcoal as their major source of energy for cooking and heating purposes (Onoja and Emodi, 2012). About 70% of the households in Nigeria use firewood as the main source of fuel for heating and cooking; slightly above quarter (27%) use kerosene, while only 1.1% and 0.84% use gas and charcoal respectively (Table 4).

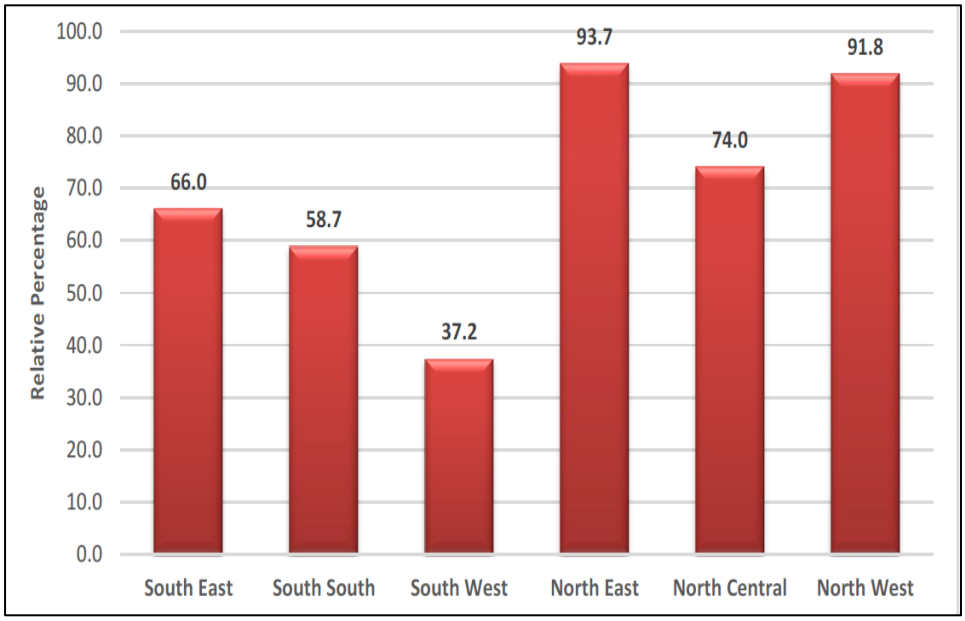
Table 4: Main Sources of Fuel for Heating Cooking (%)

Source of fuel	**Percent**
Fuel Wood	69.80
Charcoal	0.84
Kerosene/Oil	26.55
Gas	1.11
Electricity	0.52
Crop Residue or Sawdust	0.09
Animal Waste	0.07
Other	0.84
Total	**100.00**

Source: UNDP (2008); FMENV, 2014

Figure 1 presents the percent population (inclusive of both urban & rural populations) dependent on firewood for heating and cooking by region in Nigeria. In Northern Nigeria, household's reliance on firewood ranges from 74% in the North Central to 92% and 94%, respectively in North East and North West (Sa'ad and Bugaje, 2016). The Northern States are the most wood deficient in the country where deforestation and desertification are most prevalent. As a result of wood deficit, sometime the North has to rely on the Southern Nigeria for supply of charcoal. South West is more cosmopolitan and it has the lowest rate of firewood use in the country.

Figure 1: Percentage of Households Dependent on Firewood for Cooking by Regions in Nigeria



Source: Sa'ad and Bugaje (2016)

Both rural and urban households in Cross River State depend on firewood as a primary source of energy for cooking, heating, preservation and agro-produce processing at rudimentary levels (e.g. cassava processing into garri, oil palm, etc.) (Fon, et al., 2014). Commercial wood sellers abound in both rural and urban centres in the State.

The rural communities of in Cross River State rely on dry and dead wood collected from forests. The firewood is collected mostly in proximity to the community. Estimates based on NASRDA & FAO (2015), indicate that in the rural areas of CRS, the average fire wood consumption is estimated at 9 150 Kg per household per annum (ranging between 2 600 Kg to 19 760 Kg per household per annum across communities). This translates to an estimated annual per capita firewood use of 1 525 Kg. This compares well with studies elsewhere which indicate annual per capita firewood use of about 1.23 ton (Guveya and Sukume, 2009; FAO, 1998). Assuming clear-felling and that the stock of wood per ha is 443.67 tons (derived from Gallagher, Hendrick, and Byrne, 2000 and NASRDA & FAO, 2015), the average area of forest cleared per year in CRS is estimated at 12 240ha (ranging from 3 480 ha to 26 430 ha per annum).

Charcoal: Charcoal production is one of the activities leading to deforestation and forest degradation in Nigeria, a situation aggravated by illegal commercial logging (Jamala et al.,

2013; Olori 2009). The bulk of charcoal production is associated with felling of both mature and nearly-mature trees from secondary and in some cases primary forests (Jelili, Saliu, and, Abiola, 2015; Jamala et al., 2013; Adeniyi, 1995). Emissions during charcoal production are significant compared to those from charcoal burning (Jelili, Saliu, and, Abiola, 2015). Charcoal is used for heating and cooking, and casting bronze and other metals. Food sellers and caterers who cook for large gatherings prefer to use charcoal as an alternative source of energy for it is relatively cheap and easy to handle.

Awoyemi *et al*., (2006), indicate that in Nigeria known charcoal production areas include places like Oyo, Isheyin, Saki Igbo-Ora, Ogbomoso- all in the western part of the country; Jebba, Omu Aran, Egbe, Kabba in the Central States; Minna, Jos and Kaduna. Hardwood charcoal is produced abundantly during dry season (from October to early June of each year) in; Oyo, Ogun, Ondo, Ekiti, Osun, Enugu, Rivers, Cross River, Kwara, Kogi, Abuja and Benue States (Jamala et al., 2013; Karekezi and Majoro, 2002).

Use of charcoal in CRS is a relatively new phenomenon which is increasing. Charcoal is used in the urban area for cooking (when power goes out), ironing, and roasting fish or plantains whilst charcoal dust is used for protection against thunder protection. In Calabar, there is only one small market for charcoal with only up to 5 sellers of charcoal with each seller selling up to about one hundered 48 Kg bags of charcoal per month. Salami and Brieger (2010) indicate that a 48 kg bag of charcoal can last a household a month. Assuming an average household size of 6 persons, this translates to a per capita charcoal consumption per annum of 96 Kg. Assuming that 0.84% of the CRS population uses charcoal, the current total annual demand for charcoal for CRS is estimated at 2 900 tonnes. Assuming clear felling, the amount of hardwood forest land cleared per year to supply charcoal for CRS is estimated at 55 ha. At the national level, assuming that only 0.84% of the Nigerian population use charcoal, the demand for charcoal is estimated at 116 000 tonnes per annum. This translates to 2 200 ha of hard wood forest clear felling per annum to meet local demand.

Nigeria is a charcoal exporter, with a large market in the EU, USA and Asia (Jamala et al., 2013). Nigeria has been exporting charcoal since 1904 (Light and Sound, 2009). The charcoal export prices range from $170 - $300/ton (Jamala et al. 2013). Nigeria has a comparative advantage in the production and export of hardwood charcoal over other African countries that export charcoal – the climatic condition for Nigeria is conducive for the production of hardwoods. In 2013, the net profit of producing charcoal for export was N5 933 per tonne (Euro 30 / t) after paying for production costs, processing fees, container loading costs, local Government tax, and charcoal Association levy (Jamala et al., 2013). Charcoal is mainly

produced from tropical hard wood, although there are other sources like coconut shell (Dayo, 2007). In 2013 Nigeria supplied 24% (i.e. 136 800 tons) of Europe's charcoal imports (TFT, 2015). Around 40% of France's charcoal imports (90 000 tonnes per year) come from Nigeria. This is a concern because Nigeria has problems with deforestation (TFT 2015). To meet the EU annual charcoal demand, Nigeria clears an estimated 2 600 ha. Thus, Nigeria clears at least 4 800 ha of hard woods per year to meet local and export charcoal demand.

The unregulated nature of the firewood and charcoal industry poses a great threat to Nigeria's forests through deforestation and forest degradation (Eneji, et. al. 2014). A complete ban on the use of firewood and charcoal might be counterproductive as the majority of the population is largely dependent on fuelwood as a main source of energy.

3.2.2 Proposed Options for Reducing the High Demand for Fuelwood

With the continued increase in the prices of fuel-wood substitutes, in the absence of alternative sources of affordable energy, coupled with the low level of rural electrification in Nigeria, firewood and charcoal will remain the main sources of energy for heating and cooking (Enang, 2013). The following options have been suggested to curb deforestation and forest degradation from firewood use and charcoal production:

i. Seeking for alternative options for the efficient production and utilization of fuelwood, e.g., use of retort kilns in charcoal production, briquetting and pelleting;
ii. Promoting the adoption of thermal efficient technologies such as cook stoves;
iii. Exploring the scaling up of other alternative renewable energy sources such as biogas, liquefied petroleum gas, solar, geothermal, wind, and hydro-electric power;
iv. Establishment of fuel woodlots of fast-growing exotic and/or indigenous tree species on farm, community wastelands, and support to the management of existing home-garden and homestead trees.

Past efforts of the Nigerian government to reduce firewood consumption have so far been unsuccessful due to both repeated shortages of cooking gas and kerosene and their relatively high price (Sa'ad and Bugaje, 2016). Moreover, commercial energy like electricity and LPG requires initial capital stock such as kerosene stove and electric and gas fired cookers which are very expensive and sometimes, the supply of their fuels are not reliable (Sa'ad and Bugaje, 2016).

Apart from the economic factors for sticking to firewood and charcoal, other factors also matter for fuel choice. In some areas, especially in urban areas, it has been observed that the uptake of modern fuels such as LPG often goes hand-in-hand with continued wood usage. In this

case subsidies on modern fuels like LPG to discourage biomass use may not necessarily induce households to abandon wood fuel to bring about the intended results. The fundamental reason why some households stick on traditional fuels is due to cultural factors (Sa'ad and Bugaje, 2016). Traditional cooking techniques and taste preferences might make people prefer wood fuel, even in situations where wood fuel is as expensive as the available alternatives. For example, Hausa-Fulani households in Northern Nigeria always prefer to use wood sometimes with clay pots in traditional three stone fire-wood cooking stoves in cooking, believing the food would be tastier than the one cooked with aluminium pots in a kerosene stoves, which they believe have some unpleasant odour.

3.3 Unsustainable Timber Harvesting

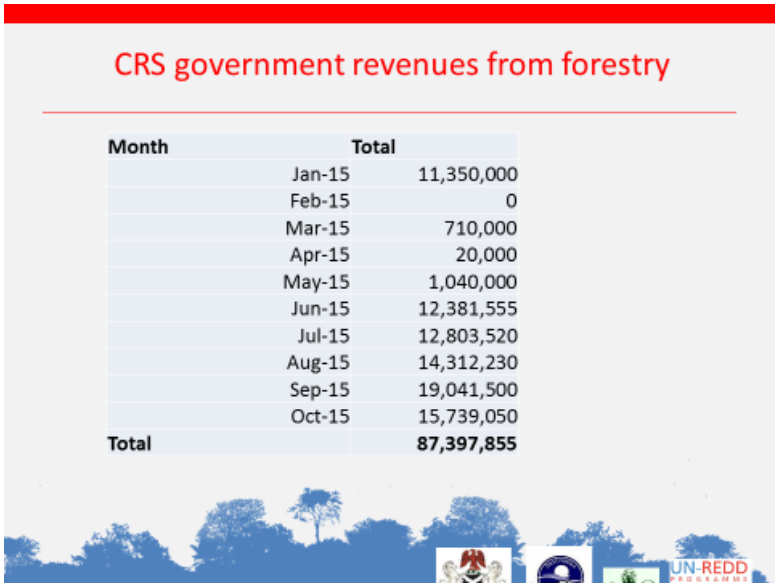
3.3.1 Timber Harvesting Issues

A major contributor to forest loss in the Nigeria as a whole, including Cross River State is logging and timber extraction. At present, sawn timber is indispensable in construction. Therefore many trees are felled and sawn without replanting measures leading to deforestation (Fon, et al., 2014).

A study by NASRDA & FAO, (2015) on the drivers of deforestation and forest degradation in Cross River State under the auspices of this REDD readiness programme suggested that "logging and timber extraction in Cross River State is a contentious issue and its contribution to deforestation and forest degradation". The study confirmed the ongoing ban or moratorium on logging from 2011, and identified the fear of prosecution by an anti-deforestation task force set up to enforce the ban as a major challenge to quantify the extent of timber extraction in the State. However, the report provided revenue indications from two timber markets in Ikom and Obubra before and during the ban: before the ban in 2010, the two timber markets had a combined income of ₦97 800 000 ($592,727.3) per annum; during the ban: they earn ₦5 760 000 ($34,909.09) per annum (mid 2015 estimate and prevailing currency conversion rate). According to the report, income from logging may have dropped, but the moratorium may have increased the activities of illegal loggers and timber extractors, thus contributing to the dearth of data. However, the nearest estimate to the volume of wood extraction is provided in the drivers study: "Before the ban, a trader could buy 20 tonnes of timber during the rainy season compared to 10 tonnes that is currently obtainable with the existence of the ban. Similarly, during the dry season, a trader was able to purchase 60 tons of timber. But with the ban in place, it is still very difficult to buy 10 tons".

Obviously, in spite of the ban, the State is still generating revenue from prosecuting illegal logging as seen in the PowerPoint excerpt from the CRS REDD+ Stakeholders' Forum in December 2015 presented in Figure 2. The incidence of illegal commercial loggers has increased[3] due to poor forest management practices due to a range of reasons from lack of funds to lack of capacity and a multiplicity of task forces supposedly doing the same thing and becoming active participants in this growing practice. Due to the moratorium, the government would not grant logging concessions; the illegal loggers are largely private/individual operators without an organized or legal identity.

Figure 2: Excerpt – Revenue From Illegal Logging Prosecution in CRS, 2015



Source: PowerPoint Presentation Excerpt - CRS REDD+ Stakeholders' Forum, December 2015

3.3.2 Proposed Options for Sustainable Timber Harvesting

The following options has been proposed to serve as entry points for resolving this driver:

i. It is not clear why the moratorium was declared. This is especially so when harvesting of timber on state owned plantations has been stopped over the past 7 years. Communities are not benefitting from their timber stocks as they clear land for agriculture. Before the moratorium, one could ask sawyers to cut some timber species on their land for sale before clearing the land. With the moratorium, the timber is just burnt to ashes, as land is cleared for agriculture. In the same vein, due to the moratorium, the communities no longer obtain timber loyalties from timber harvesting.

[3] However, there is a dearth of information on the scale and the different players in the illegal logging activity. Hence it is difficult to estimate the volumes (cubic metres) removed and/or areas deforested (ha).

Hence there is need to review the terms of reference of the forest moratorium and ensure there is strict compliance with sustainable management of forests.

ii. There is need for the re-valuation of timber resources to determine appropriate license fees, levies and penalties in order to boost revenues and ensure biodiversity conservation. This calls for the need by the Forestry Commission to routinely estimate timber stocks and the maximum allowable harvests of different timber species.

iii. REDD+ is a relatively new phenomenon, hence there is need to raise awareness among local communities, civil society, private sector, policy makers and the media on the concept and benefits of REDD+.

3.4 Infrastructure Development

3.4.1 Infrastructure Development Issues

The construction of infrastructure has resulted in the clearance of forests to accommodate infrastructure for the growing population. The urban population is estimated to be growing at between 2.8 and 3.0 percent per annum (Ottong et al 2010). The infrastructure developed include housing, industries, market areas, ports, schools, railways, airports and highways. In Cross River State, some urban centers e.g. Calabar municipality, Ugep, Ogoja, Ikom, and Obudu are already witnessing the problem of rapid population growth NASRDA & FAO, (2015). For example, indications are that the Ikom Fuelwood Forest Reserve covering 1.75 Km^2 is now all under urban development whilst the Ikrigon Forest Reserve covering 5.77 Km^2 is now completely degraded (personal communication with CRS REDD MRV unit).

The private sector plays a major role in any government's decision to deliver such programmes as part of their mandates to the people: real estate developers, road construction companies, etc. are key private sector actors in this area. Feedback from REDAN Cross River Chapter and the CR Ministry of Works indicates that since 2014, when the State Government engaged the services of a contracted firm to develop a low income housing estate for civil servants in Akpabuyo LGA, there has been no such activity in the state as at the time of this study – although the current Governor has promised (August 2016), as part of his mandate, to develop such estates for internally displaced Nigerian citizens in the Bakassi LGA (as a result of Nigeria ceding some parts of its territory to Cameroon during the administration of the first democratically elected President Olusegun Obasanjo 1999 – 2007). As at the time of this report, no contract has been awarded for this. The prevailing macro-economic conditions especially as they impact on cost of borrowing by the private sector, was also cited as a key barrier to real estate developers in the private sector which REDAN represents.

Road construction is typically engaged in and driven by the Government as part of its promised mandate to the people to deliver road infrastructure. In Cross River, at the time of this study, the most topical issue, and example of this, is the on-going bid by the current government administration to build a super highway which is designed to run from Calabar, in the southern part of the state, to Obudu in the northern part. This highway is 260 kilometres long and will run from Calabar South, through Calabar Municipal, Akamkpa LGAs to the Obudu directly affecting mangrove forests, the CR National Park, buffer zones, the forest reserves in Ekuri, Ukpon, Afi and 185 communities along the way. Typically, the services of private sector firms are contracted by government for this purpose. However, as at the time of this report, the state is yet to receive approval from the Federal Government of Nigeria pending its receipt of a satisfactory EIA report by the Federal Ministry of environment and so work is yet to commence officially on the super highway. There are, however, unverified reports that some forest clearing activities have commenced.

3.4.2 Proposed Options on Infrastructure Development

The following options are proposed to deal with unsustainable infrastructure development:

i. Enforcing Environmental Impact Assessment (EIA) and Strategic Environmental and Social Assessment (SESA) provisions. There is need to enforce the existing Environmental Impact Assessment (EIA) and Strategic Environmental and Social Assessment (SESA) regulations in the process of infrastructure development.

ii. There is need to develop and enforce GRMs (Grievance Redress Mechanisms) that are responsive and central to local community concerns over all major infrastructural developments. In this way socially and environmentally sustainable infrastructure will be developed.

3.5 Oil/Solid Mineral Exploration & Quarrying

3.5.1 Oil/Solid Mineral Exploration & Quarrying Issues

There are currently no further oil exploration activities in Cross River Sate. Between 1999 and 2007 there were tentative oil exploratory activities by Addax Oil Co. Ltd and an indigenous Nigerian firm Moni Pulo Nig. Ltd. However, the ceding of oil wells to Akwa Ibom State and of the Bakassi Peninsula to Cameroon within this period saw the cessation of activities in this sub-sector in Cross River by 2007 and consequently there is yet to be actual oil mining activities in Cross River State (although this could always change given the recent discovery of oil in commercial quantities in a similar coastal state of Lagos at the time of this report).

Cross River State is rich in solid minerals, including limestone, baryte, clay, salt, tin, granite basalt, quartzite, kaolin, and feldspar (Muthui and Adedoyin, 2016). 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). 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, Odukpani, Ikom, Obubra, Ogoja and Biase. At the moment, there is only one limestone company, the United Cement Company of Nigeria (UNICEM Lafarge) in Mfamosing community in Akamkpa which mines limestone for cement and accounts for approximately 50% of UNICEM's total cement production in Nigeria. 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 (Muthui and Adedoyin, 2016).

While there is no available data clearly indicating exactly the degree of impact these activities have had on the forests and the environment, key informants agreed that there has been significant negative impact on the forests. It was also confirmed that none of these operations have ever engaged in environment or forest protection activities. Most of the companies listed under these operations have either left the State or ceased operations in the main due to lack of government patronage (funding capacities) or have relocated to other states where taxes are lower. It is noteworthy also that with the Federal Government focus back on solid mineral exploitation on a massive scale to shore up its revenue base against the backdrop of sharp drops in global oil prices and the consequent need for diversification, it is to be expected that medium to large corporate solid mineral actors will be back in the forefront of activities which will further negatively impact on the environment and the forests.

The main problem experienced with the mining/quarrying operations is that for some of the operations EIAs are not conducted. In cases where the EIAs are done, there is no monitoring to ensure that the provisions in the EIAs are followed for sustainable environment management. There is no policy compelling exploring and extracting industries to reinvest and rehabilitate opened up and degraded lands including forests (Mbina, 2014). With limited to no monitoring of mining activities, the area (ha) under mining / quarrying that has been not be rehabilitated is not known.

3.5.2 Proposed Options on Oil/Solid Mineral Exploration & Quarrying

The possible options to minimize the impact of mining / quarrying on forest resources include the following:

i. 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;
ii. 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; and
iii. Enforcing legislation of NPs as no go-areas for solid mineral exploration and quarrying.

3.6 Indirect Drivers of Deforestation & Forest Degradation

No integration with other ministries: Government agricultural programmes, and the potential expansion of the solid minerals sector, have a significant impact on forestry in Nigeria, with this largely being overlooked in national planning processes. Forestry and the environment in general, is not effectively integrated across national planning, despite the presence of mainstreaming mechanisms (such as the inactive biodiversity inter-ministerial committee).

Land tenure: Land tenure laws fail to formally recognize community tenure of land removing an incentive for villages to manage their land resources more effectively. The rights of communities over the forest sector worsened following the Land Use Decree of 1978.

Weak capacity at Federal level: The management of forest resources and the right to generate revenue from the forest estate are both vested in the State Governments at present. The 1978 Land Use Decree, which vests all land in the hands of the State Governors, strengthened this mandate. The role of the Federal Government appears somewhat limited, although the Federal Department of Forestry (FDF) holds the remit to advance national forest policy. The FDF is in a weak position, having suffered from a lack of capacity development over last fifteen years. The National Forest Development Committee (NFDC) is the forum that brings together all the State Forestry Directors and is chaired by the Director of the FDF. It provides an important institutional link between the Federal authority and the States. In recent times it has been involved in guiding forest policy and legislation development.

Weak capacity at state level: This lack of capacity and funding situation is reflected at the state level, where the State Forestry Departments lack capacity to manage forests effectively. On the other hand, forestry plays a pivotal role in State finances for example, in Ekiti State, with 40 % of Internally Generated Revenue being raised from timber royalties and license fees in 2002. Nevertheless, the funding of government agencies remains weak and there is very limited civil society capacity to compensate for this deficiency.

Absence of forest management planning: An important cause for deforestation within the forest reserves can be linked to state forestry departments who have abandoned any form of forest management for natural forest since the 1970s. As a result, reserve forests are being treated as an infinite resource with no effective policies in place to regulate their harvesting. An example of this is the practice of allocating short-term concession of 1 to 3 years that encourage annual re-entries thereby totally degrading the forests. In many reserves management amounts to salvage logging for the last remaining trees.

High revenue targets and low timber fees: The forest revenue system of the states has also contributed to the forests' demise. The allocation of concessions is by discretion and annual timber removal is driven by the states' revenue targets. These are set administratively without regard to what actually exists in the forest or what can be sustainable harvested. A World Bank Forestry Economic Study for Nigeria in year 2005 showed that low timber fees have had a direct impact on the efficiency of forest industry, costing the state significant losses in revenue as well as causing wastage of valuable timber resources. Other reasons for degradation in the forest reserves include inefficient wood-utilization by industry and, therefore, a higher demand for industrial grade timber, and illegal logging.

Ban on wood exports: In addition, the ban on log and sawn timber export has contributed significantly to this inefficiency by keeping prices lower than their true competitive levels. This has continued to protect the inefficiency of the wood industry. According to this World Bank study's analysis, four states (for which complete data are available) subsidized the forest industry to the tune of US $6.5 million in 2003 through a failure to adjust their fees to their real levels and a failure to capture revenues lost through illegal logging. This study estimated that between 2001 and 2003, the four states lost US $ 18.7 million from these sources.

De-reservation by state governments: In addition, forest estates are being de-reserved by some state Governments and the State Forest Departments who have been resist the spate of requests from corporate and influential individuals for excisions from the forest estate for the establishment of agricultural cropland. The unfortunate impression has thus been created that the forest estate exists as a land bank as the demands for de-reservation continue nationwide.

Demographic factors: A growing rural population and migration to the agricultural frontier increases the pressure on forests. An increasing population in urban and rural areas also raises the demand for food and other land-based commodities, thus, requiring more land to produce them. The population distribution in Cross River State has continued to be on the rise. Figures from the 1991 and 2006 population censuses conducted in Nigeria shows that the

population of the State was 1,911,297 and 2,888,966, respectively (NPC 2010). This indicates a population increase of over 50% over a 15 year period. In addition, the population density of the State increased from 134/sq.m in 1991 to 293/sq.m. 2006 (Ottong et al. 2010). With an annual growth rate of 3%, the population is projected to be 5,222,299 by 2025 (Ottong et al. 2010). This will further increase the pressure on the forests through the clearance of forest areas for more farmland, infrastructural expansion, and logging activities to meet the rise in the demand for wood (NASRDA & FAO, 2015).

Technological factors: Lack of appropriate technology for the sustainable management of the forests can indirectly cause deforestation and forest degradation. With appropriate agro-technical change, large forest areas that would ordinarily be converted to crop land can be salvage and thus reduce deforestation and forest degradation. One of the direct drivers of deforestation in Cross River State is the slash and burn method used by subsistence farmers for farmland expansion. This can be discouraged by the availability of organic fertilizers and sustainable agro-forestry practices. However, the availability of high technology farming methods also supports the establishment of large scale plantation and thus increases the rate of deforestation NASRDA & FAO, (2015). Technological improvements can affect deforestation rates. The adoption of land extensive technologies inevitably results in the expansion of agriculture at the expense of forests.

Cultural factors: Social and cultural habits often exert pressure on forests thus resulting in deforestation and forest degradation. Sacred groves and forest areas are often protected from land conversion and degradation. However, other cultural factors exert pressure on forests. The majorities of forest communities with a few exceptions is unaware of any alternatives to unsustainable exploitation and are often divided amongst themselves as to how to best exploit the forests for their development. In a typical village individuals supported by logging interests are often pitted against hunters and NTFP collectors. Chiefs are often compromised by loggers and are unable to protect the forests for the good of the majority in the village who may depend on NTFPs and bush meat and other forest products to supplement farming income. Divided communities are often far more vulnerable to predatory logging interests and so within a few generations, their forests are cleared while the villages remain poor.

Another example, in Edondon community, CRS, land ownership is through various local practices such as farmland ownership i.e. after farming in a place for a long time, the land becomes the property of the farmer NASRDA & FAO, (2015). The implication is that farmers tend to clear more land with the understanding that the land will eventually belong to them. Another means of owning land is through the clearing of virgin forest i.e. the first person to

clear a virgin forest for farmland owns the land. These and other cultural practices put pressure on forests and drive deforestation as well as forest degradation.

3.7 Prioritized Issues and Options for Addressing Drivers of Deforestation and Forest Degradation

A summary of prioritized issues and options for addressing the key drivers of deforestation and forest degradation are presented in Table 5.

Table 5: Key issues and options for Addressing Drivers of Deforestation and Forest Degradation

ISSUE		OPTIONS	
1.2	Loss of Forests due to Agricultural Expansion	1.2.1	Promotion of Climate Smart Agriculture (CSA) including Conservation Agriculture (CA) and Agroforestry (AF).
		1.2.3	Promotion of efficient use of land through integrated land use planning and management.
		1.1.4	Promotion of afforestation/reforestation programmes
1.3	Energy – High demand for Fuelwood (Firewood and Charcoal)	1.3.2	Formulation of strategies to address charcoal production and utilization and promotion of alternative renewable energy sources including strategic partnerships.
		1.3.2	Scale up fuel woodlots on-farm.
1.4	Unsustainable Timber Harvesting (Legal and Illegal)	1.4.1	Review the Terms of Reference of the Forest Moratorium and ensure their strict compliance with sustainable management of forests.
		1.4.3	Re-valuation of timber resources to determine appropriate license fees, levies and penalties in order to boost revenues and ensure biodiversity conservation.
		1.3.4	Raising awareness among local communities, civil society, private sector, policy makers and the media on the benefits of REDD+.
1.5	Infrastructure Development That Does Not Take Into Account Environmental and Social Safeguards	1.5.2	Enforcing Environmental Impact Assessment (EIA) and Strategic Environmental and Social Assessment (SESA) provisions.
		1.5.2	Developing and enforcing GRM mechanisms that are responsive and central to local community concerns for all major infrastructural developments.
1.6	Oil/solid mineral exploration including quarrying that does not take into account environmental and social safeguards	1.6.1	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.
		1.5.3	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.
		1.5.4	Enforcing legislation of NPs as no go-areas for solid mineral exploration and quarrying.

4. FINANCIAL INSTITUTIONS OF NIGERIA

Globally and in Nigeria, there is a huge funding gap between the requirements to effectively address deforestation and forest degradation and the public funds that are currently available. Hence the private sector and financial institutions are important to tackle this funding gap. Roles for investors and asset managers include equity investors or acting as brokers or intermediaries. Debt finance can take the form of loans, leveraged funds or individual projects. Insurance and guarantees are crucial ways to manage both conventional investment risk in the forestry sector as well as risks that are more specific to investments in the area of forest-based climate change mitigation.

Nigerian financial system is made up of the banking (commercial banks and merchant banks) and non-banking financial institutions (finance companies, micro-finance banks, bureaux-de-change, discount houses, development finance institutions, insurance, and primary mortgage banks) under the supervision of the Central Bank of Nigeria (CBN). These institutions and the products they provide are briefly described in turn.

4.1 Banking Institutions

Commercial and merchant banks are deposit-taking institutions offering loans (mostly short term) and providing other services. *Commercial banks* clearly dominate the banking system. *Merchant banks* are designed more as wholesale banks but are increasingly emulating commercial banks in the way they operate. They cater for the needs of corporate and institutional customers, and are encouraged to provide medium and long term financing (World Bank, 2000).

Banks' current loan conditions are unattractive for middle-income mortgage borrowers given a combination of high loan rates (variable rates, currently above 30%, based on high margins) and modest tenors of the loans (3 to 5 years, sometimes up to 8 years). The minimum required equity is usually a substantial 25%. Given the high interest rates, longer terms may not contribute much to greater loan affordability. A key issue will be how to reduce their transformation risks, costs of funds and margins, while extending the terms of their loans (World Bank, 2000).

4.2 Non-Banking Financial Sector

NBFIs are financial institutions that do not have a full banking licence and thus cannot take deposits. However, they both compete and complement banking institutions by providing alternative financial services such as contractual savings (pension funds and insurance

companies), investment intermediaries (finance companies, mutual funds and money market) and consumer credit (Rateiwa and Aziakpono, 2015).

Mishkin (2007) classifies NBFIs into two main categories, namely contractual savings institutions and investment intermediaries. Contractual savings institutions are financial intermediaries that obtain funds from individuals and institutions on a contractual basis, at regular intervals. They mostly invest in corporate bonds, stocks and mortgages. These institutions include life insurance companies, short term insurance and pension funds. On the other hand, investment intermediaries are financial institutions that facilitate purchase of capital and money market instruments. These include finance companies, mutual funds and money market institutions. Table 7 shows the characteristics of these institutions in terms of the assets and liabilities they hold.

Table 7: Characteristics of NBFIs

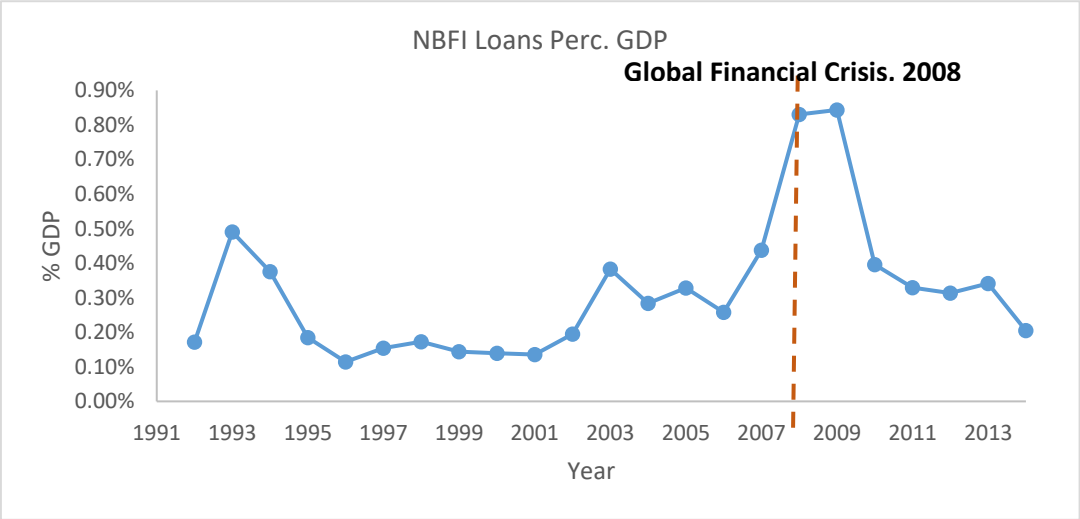
Type of intermediary		**Liabilities (Source of Funds)**	**Assets (Use of Funds)**
Contractual savings institutions	Life insurance companies	Premiums for policies	Corporate bonds and mortgages
	Short-term insurance companies	Premiums for policies	Corporate bonds, stocks and government bonds
	Pension funds	Employer and employee contributions	Corporate bonds and stocks
Investment intermediaries	Finance companies	Commercial paper, stocks and bonds	Consumer and business loans
	Mutual funds	Shares	Stocks and bonds
	Money market	Shares	Money market instruments

Source: Mishkin (2007)

The Figure 2 presents the trend in loans extended by NBFIs expressed as a percentage of GDP for Nigeria. The Figure shows that from 1996 to 2009 the loans provided by NBFIs has been increasing. With the global financial crisis, the extent loans provided by NBFIs has been spiralling down. NBFIs provide loans between 0.1% - 0.4% of GDP.

The Figure 3 presents the trend in credit extended to the private sector by deposit banks expressed as a percentage of GDP for Nigeria. The Figure shows that while deposit bank credit has generally been on an upward trend, after the financial crisis in 2008, credit extended to the private sector by deposit banks has been on the decline. The primary reasons is that banks are yet to fully recover from the financial crisis. On average, deposit banks provide loans to the private sector to the tune of 4% - 6% of GDP. Thus, for Nigeria, deposit banks are still a major source of investment financing when compared to NBFIs.

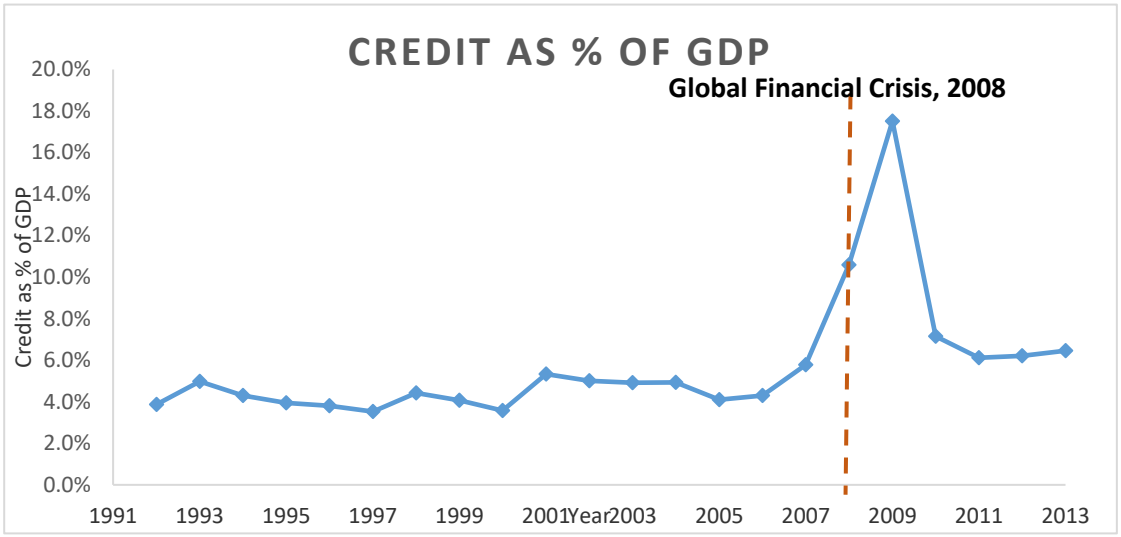
Figure 2: Credit Provision by NBFIs[4] Expressed as Percent of GDP for Nigeria: 1992-2014



Source: Based on CBN Statistical Bulleting (2015)

[4] This include loans from finance companies, micro-finance banks, and mortgages and exclude financing from development finance institutions.

Figure 3: Credit to the Private Sector by Deposit Banks Expressed as Percentage of GDP for Nigeria: 1992-2013



Source: Based on CBN Statistical Bulleting (2015)

4.2.1 Finance Companies

Finance companies engage in short term non-bank money lending, leasing, hire purchase, factoring, LPO financing, export financing, electronic funds transfer and issue of vouchers, coupons, credit cards and token stamps (Acha, 2012). Finance companies are not authorized to mobilize deposits from the public; they depend on borrowings - from other financial institutions, individuals and companies - and owners' equity to perform their intermediation role. Finance companies provide financial services to individual consumers and to industrial, commercial, or agricultural enterprises. The permitted activities of finance companies are presented in Table 8.

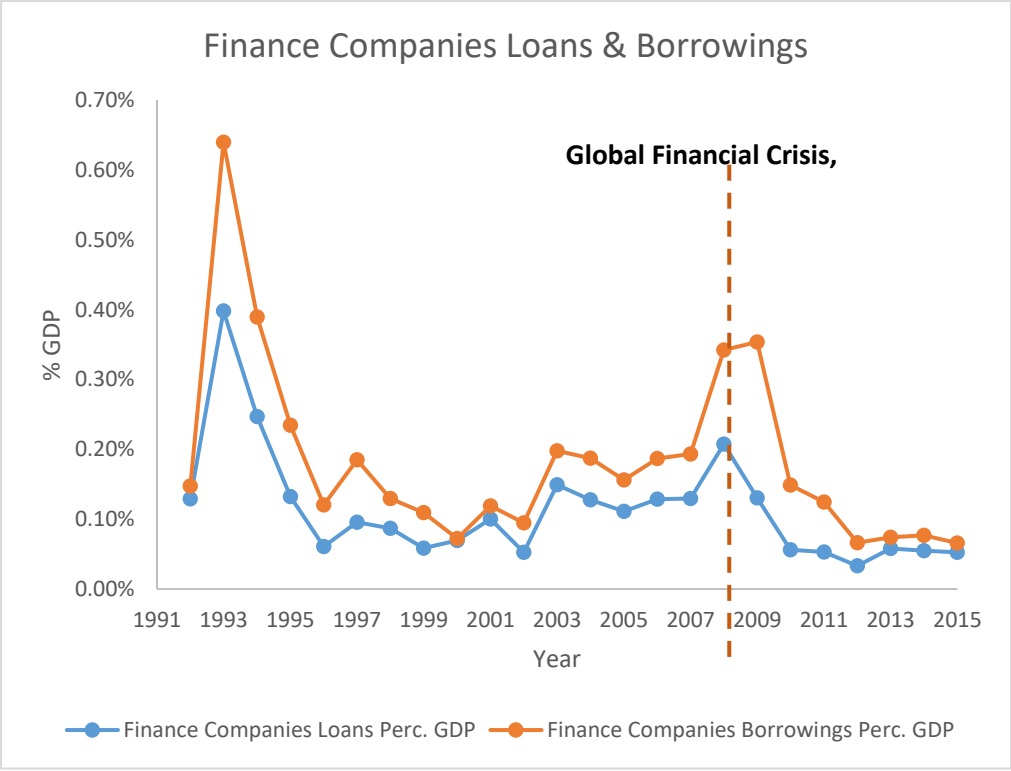
An analysis of the borrowings and loans provided by finance companies as a percentage of the GDP are presented in Figure 4. The value of loans provided by finance companies as a percentage of the GDP has been at most 0.4% in 1992 and is currently less than 0.1% of GDP. The loans provided by finance companies decreased during the period 1993 to 1996. From 1997 till 2008, there has been a general increase in the value of loans provided. Since 2009 there has been a decrease in the value of loans provided as a percentage of the GDP.

Table 8: Permitted Activities of Finance Company Operators

Permissible Services	**Description**
Consumer Loans	This includes the provision of consumer and business loans to individuals and the Micro, Small and Medium Enterprises (MSMEs).
Funds Management	This entails the management of funds on behalf of customers/ clients based on agreed tenor and rate.
Asset Finance - Finance Lease - Hire Purchase	 Finance lease is a lease agreement with the option of purchase by the lessee at the end of the lease period. Hire purchase involves the acquisition of goods through instalment payments over a given time frame.
Project Finance	The financing of infrastructure/ industrial projects via a loan structure that relies primarily on the project's cash flow for repayment. This covers the provision of finance for such projects promoted by small scale ventures, public/ private partnerships and concessions.
Local and International Trade Finance - LPO Finance - Import and Export Finance	 Local trade finance/ supply finance provides contractors and vendors with the financial support to execute local purchase orders (LPOs) and work orders for their client companies. International trade finance is designed to facilitate the export and import of goods.
Debt Factoring	The business of purchasing debts/ receivables from clients at a discount and making a profit from their collection.

Source: CBN (2014)

Figure 4: Finance Companies Borrowings and Loans as Percent of GDP (1992 – 2015)



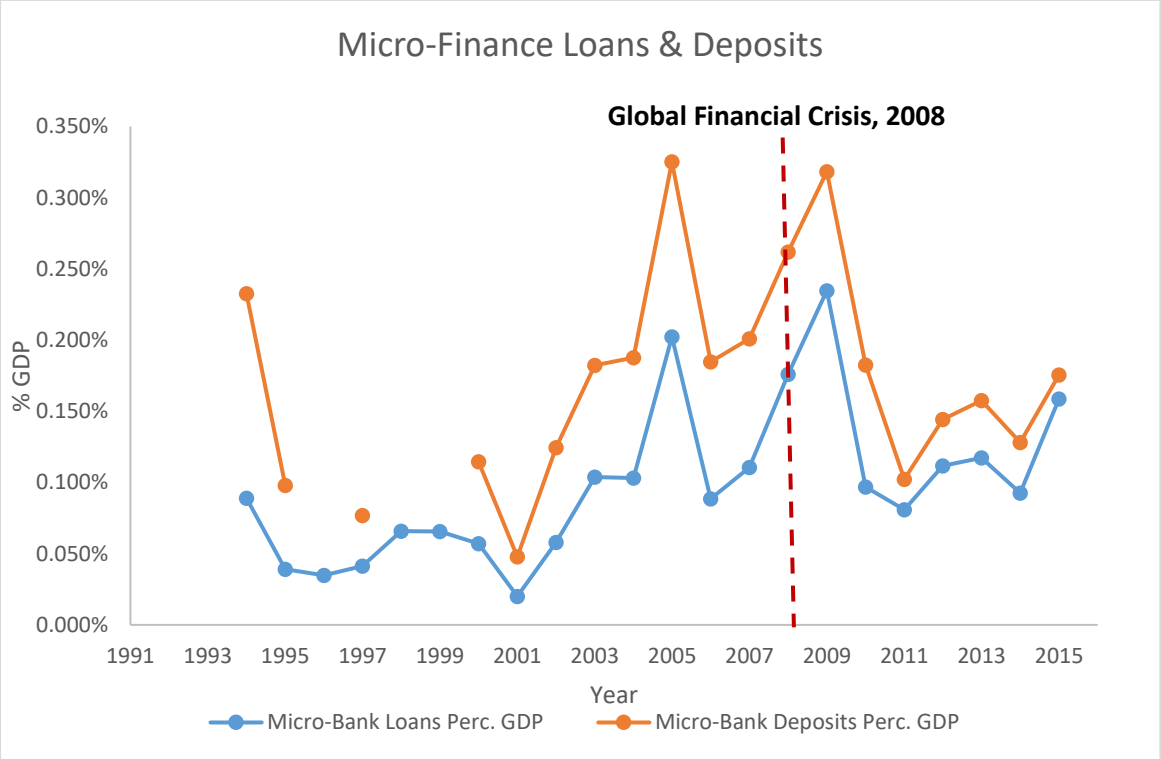
Source: CBN Statistical Bulletin, 2015

4.2.2 Micro-Finance Banks

Formerly known as community banks (Acha, 2012), micro-finance banks are self-sustaining financial institutions owned and managed by local communities such as community development associations, cooperatives, town unions, individuals etc. Micro-finance banks are unit banks and they mobilize deposits from customers in form of savings, current and fixed deposits, they grant credit to their customers and provide limited banking services (Lorchir, 2006).They are not allowed to participate in the foreign exchange market neither do they belong to the bank clearing system. Micro-finance banks play active role in rural development by mobilizing rural savings and financing investment at the grassroots (Bamisile, 2004).

An analysis of the deposits and loans provided by micro-finance institutions as a percentage of the GDP are presented in Figure 5. The value of loans provided by finance companies as a percentage of the GDP has been on a general increase from 2001 to 2009 and has been at most 0.2% in 2009. From the 2014 financial year, the loans given by micro-finance institutions seem to be on the increase.

Figure 5: Micro-finance Banks' Deposits and Loans to the Economy (1992–2015)



Source: CBN Statistical Bulletin, 2015

One of the key challenges for REDD+ in Nigeria is how to set up a sustainable long-term financing mechanism for making small compensation payments to thousands of smallholder farmers and micro-enterprise businesses that impact negatively on forests. Sustainable forest management efforts may be enhanced by extending small amounts of credit to smallholders to help them establish alternative livelihoods that do not involve deforestation or forest degradation. Microfinance institutions could play an important role in providing the necessary micro-payment and micro-credit infrastructure to support REDD+. To promote alternative livelihoods for local communities and reduce the pressure on the forest, micro-finance institutions can service members of the communities by providing low interest rate loans to community members for eligible “environmental activities”, as determined by the micro-finance institutions governing body.

4.2.3 Bureaux De Change

Bureaux de change are authorized to buy foreign currency from the public and not from banks (Akpan, 1999). Through their operations bureaux de change help to attract hard currency into the country by offering prices better than the official rate and by availing Nigerians abroad who remit monies home a channel to do so. Thus NBFIs like bureaux de changes encourage capital inflow as they they boost the foreign exchange reserves of the country (Acha, 2012).

4.2.4 Discount Houses

The first set of discount houses began operations in Nigeria in 1993. They were established to act as intermediaries between the CBN, the licensed banks and other financial institutions. Discount houses mobilize funds for investment in securities by providing discount/rediscount facilities in government short-term securities (Acha, 2012). The presence of an avenue to discount securities encourages banks and other investors to buy them and by so doing government is provided with development funds on one hand and open market operations became more effective as a monetary policy instrument on the other.

4.2.5 Development Finance Institutions

Development finance institutions (DFIs) popularly known as development banks are specialised institutions established to foster development in specified sectors of the economy. The DFIs in Nigeria are the Bank of Industry (BOI) and the Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB). Apart from mobilizing their own funds, the DFIs obtain significant grants and loans from the government and international financial institutions, like the World Bank or the African Development Bank for onward lending. DFIs provide long term loans to for long-term real investments like equipment and industrial infrastructural

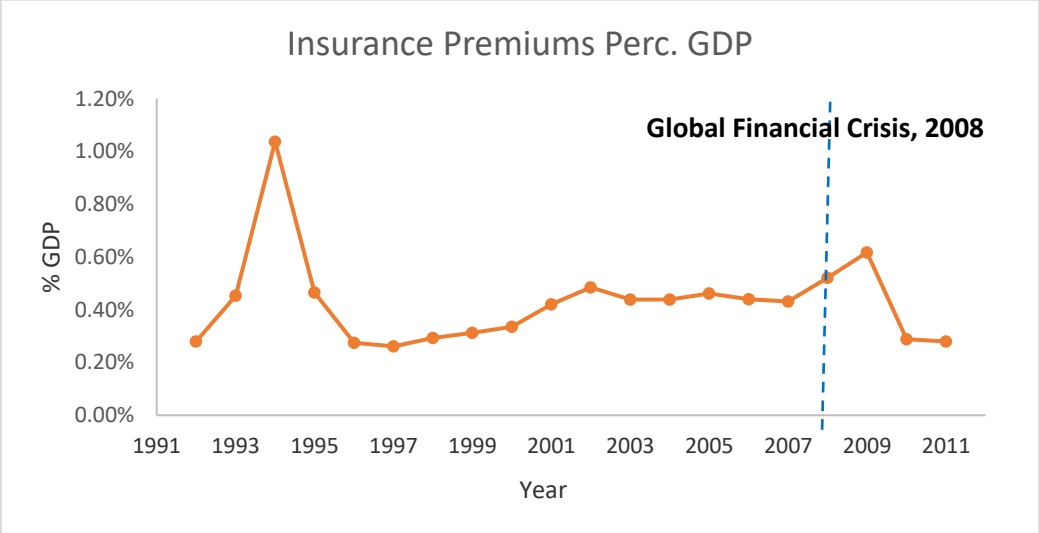
developments (Acha, 2012). DFIs also extend technical and managerial expertise to the loan beneficiaries.

4.2.6 Insurance Companies

These are institutions that undertake to indemnify their customers from economic loss. They mobilize savings through the premium paid by the insured; from this pool of savings they are able to indemnify the few that suffer loss. The insurance business consists of life, non-life as well as re-insurance. Insurance plays a very active role in development, (apart from the psychological assurance it gives to investors). Insurance also plays an active role in capital formation and is a source for long-term development funds (Acha, 2012; Dorfman, 2005; Harrington and Niehaus, 1999).

An analysis of the insurance premiums collected by insurance companies as a percentage of GDP is presented in Figure 6. The insurance premiums has been steadily increasing from 1997 to 2009. The premiums have been on the decrease since 2010.

Figure 6: Insurance Premium (1992 – 2011)



Source: CBN Statistical Bulletin, 2015 Data

4.3 Green Growth & Financial Instruments in Nigeria

The Federal Government of Nigeria adopted the green growth approach through its Path to Sustainable Development Through Green Economy of 2012 (FGN, 2012). According to UNEP (2011), green economy is an economy that results in improved human well-being and social

equity, while significantly reducing environmental risks and ecological scarcities. At the operational level, the green economy is seen as one whose growth in income and employment is driven by investments that (FGN, 2012):

i. Reduce carbon emissions and pollution;
ii. Enhance energy and resource efficiency;
iii. Prevent the loss of biodiversity and ecosystem services ; and
iv. Includes investments in human and social capital, and the recognition of the central position of human well-being and social equity as core goals, which are promoted by growth in income and employment.

Green growth seeks to overcome the barriers to longer term growth, which includes addressing upfront costs or externalities, but also policy and behavioural constraints. It seeks to provide incentives for changing behaviour which will bring economic and welfare gains. The green growth approach cuts across sectors and combines various policy instruments, including economic, regulatory and social marketing initiatives (FGN, 2012).

Financial Services: By adopting the green growth approach, the government recognizes that the Nigerian financial sector, beyond its traditional intermediation activity, has a social, environmental and sustainability role, and that the business activities of the sector have a direct impact on the community and environment.

Private Sector Participation: Through appropriate mechanisms, the private sector is supported and enabled to play a more active role in government's drive to accelerate the rate of economic growth and development that is imperative for achieving sustainable development in the country. Some of the benefits that Nigeria derive from effective partnership with private sector include (FGN, 2012):

i. Availing finance for clean projects;
ii. Technical support for projects from banks and other financial institution and partners;
iii. Clean supply chain through the firm's product cycle; and
iv. Best practices as the private sector lead in sustainable development.

Agriculture and Food Security: Through the green growth initiative, support towards addressing environmental issues in agriculture focuses on promoting the use of climate smart agricultural technologies and practicing sustainable agricultural production and processing (FGN, 2012). These include the use of improved (drought tolerant) seed varieties, change in seeding dates, low tillage, rain water harvesting, soil conservation practices and grazing land

management. Weather index crop and livestock insurance is being introduced under the Nigerian Incentive-Based Risk Sharing System for Agricultural Lending Scheme (NIRSAL).

4.3.1 Nigerian Sustainable Banking Principles

In 2012, the banking Sector, through the CBN developed and adopted sustainable banking principles. Nigerian Sustainable Banking Principles (NSBP) of 2012 comprises 9 core principles by which all banks and signatory discount houses are to abide in order to protect the environment in which they and their customers operate in. From these principles, the banking sector recognizes that the business activities of the clients that Banks fund can have potentially negative impacts on the environment or local communities where their clients operate (CBN, 2012). These negative impacts can include air or water pollution, destruction of biodiversity, threats to human health and safety, violations of labour rights, or displacement of livelihoods. Each of these issues may have hidden external costs which in turn hinder the overall growth prospects of the economy and society. When Banks provide financial products and services to clients with poor environmental and social (E&S) performance, they not only enable such clients to impose these negative impacts on the environment and society, but expose themselves to risk in the form of credit risk, reputational risk, and legal risk (CBN, 2012). In particular, the NSBP provides specific guidelines that frame the role of the Banks with regard to driving sustainable investment in and lending to three sectors critical to Nigeria's continued economic growth: agriculture, power and oil and gas.

From this study, there are significant knowledge gaps among bank and non-bank financial institutions about the need to protect the environment, REDD+, and ensuing benefits. The key informant interviews conducted with bank and non-banking institutions in CRS indicate that most banks are not conversant with the NSBP (see Appendix 3). Apparently there are key communication / sensitization gaps which need to be urgently addressed both internally and by the CBN by enforcement through close monitoring. However, there is quite a high level of interest to understand REDD+ and its benefits. The banking sector is eager to develop green banking products to enable the sustainable management of the environment.

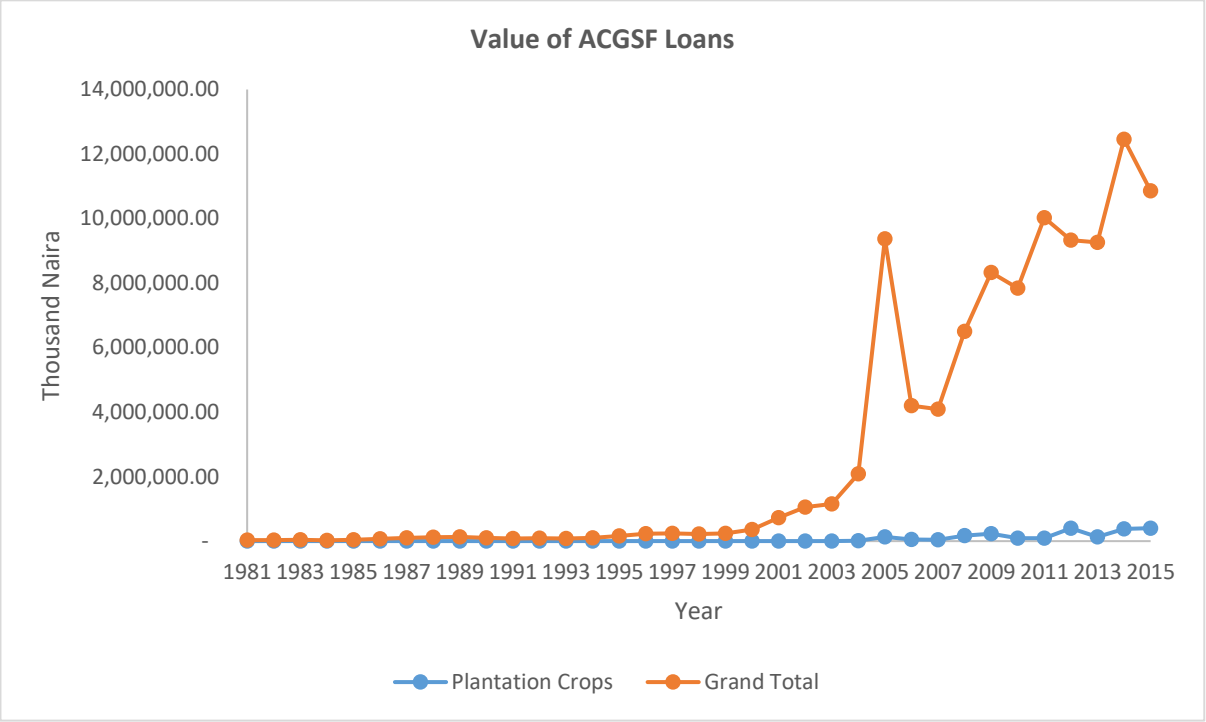
4.3.2 Agricultural Credit Guarantee Scheme Fund (ACGSF)

The Fund guarantees credit facilities extended to farmers by banks up to 75% of the amount in default net of any security realized. The Fund is managed by the Central Bank of Nigeria, which handles the day-to-day operations of the Scheme. Between 1978 and 1989 when the government stipulated lending quotas for banks under the Scheme, there was consistent increase in the lending portfolios of banks to agriculture, but after the deregulation of the

financial system, banks started shying away by reducing their loans to the sector due to the perceived risk.

An analyses of the loans disbursed under the ACGSF is provided in Figures 7 to Figure 10. Figure 7 presents the total nominal value of loans disbursed under the ACGSF[5] and the value of loans given for plantation crops, i.e. oil palm, rubber, and cocoa. The general trend is that the nominal value of loans disbursed for agriculture crops has been increasing since 1994, increasing from ₦81 million in 1994 to ₦12.5 billion in 2014. The value of loans disbursed for plantation crops was highest in 2015 at ₦402 million.

Figure 7: Value of Loans Under ACGSF (1981 – 2015) (₦ '000)



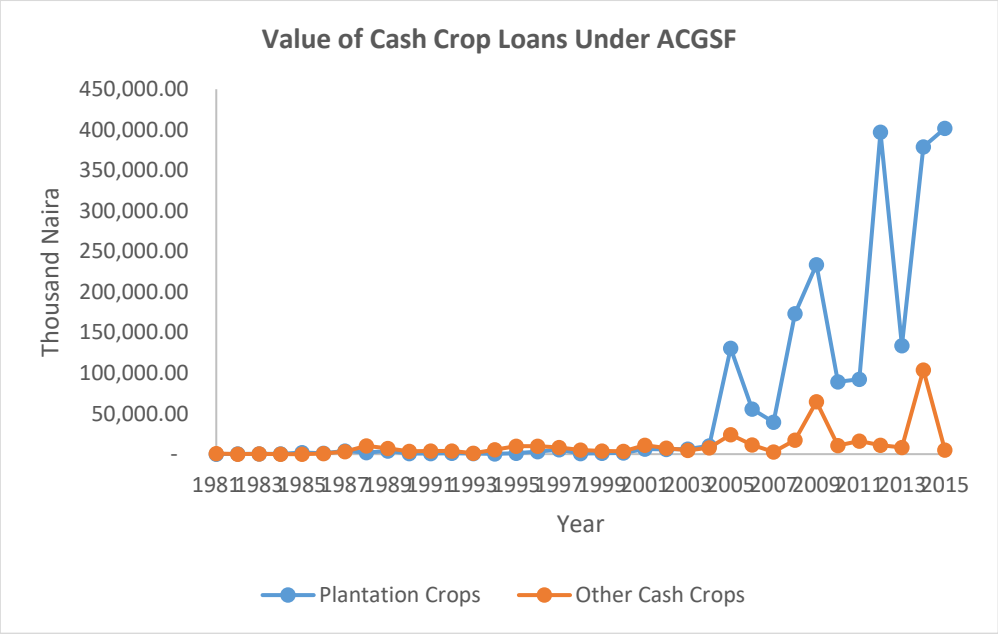
Source: CBN Statistical Bulletin, 2015 Data

Figure 8 presents the value of loans disbursed to cash crop only, categorized into plantation crops and other cash crops (i.e. cotton and groundnut). The Figure shows the value of ACGSF loans disbursed for plantation crops increased drastically over the loans given to other cash crops as from 2005. The value of loans disbursed for other cash crops was highest in 2014 at ₦ 104 million whilst that for plantation crops was ₦402 million in 2015. Figure 9 shows that the percentage of ACGSF loans disbursed for cash crops, was higher for other crops from 1988

[5] The agricultural commodities supported under the ACGSF are oil palm, rubber, cocoa, cotton, groundnut, grains, tubers, other crops, and livestock.

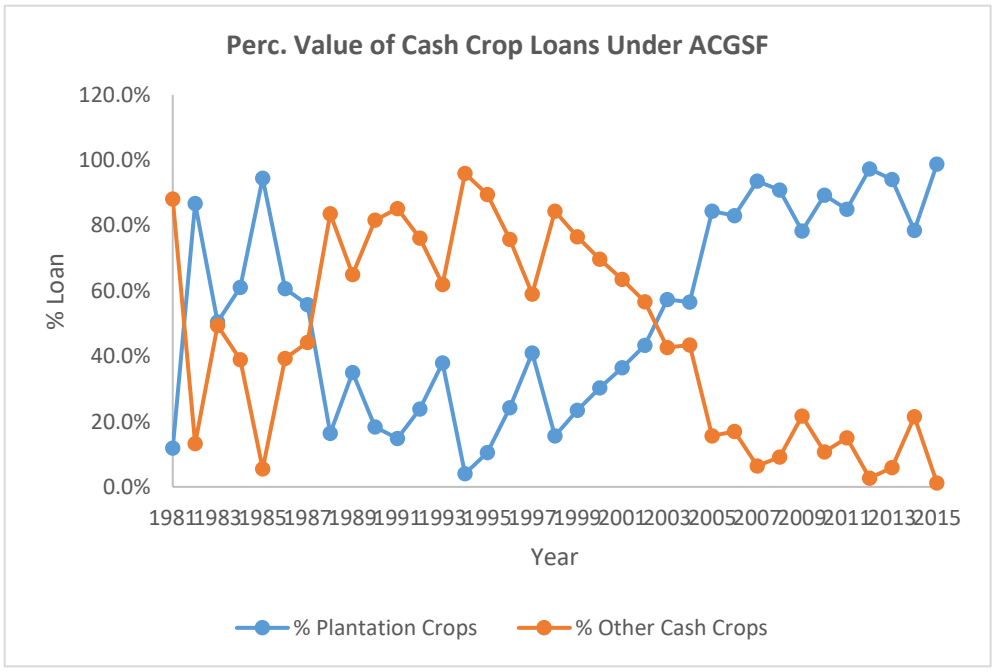
till 2002. Since 2003, the percent cash crop loans paid out for plantation crops has been increasing. The percent value of ACGSF loans disbursed for plantation crops decreased from a high of 4.4% in 1985 to a low of 0.2% in 1994. From 1995, there has been a general increase in the percentage ACGSF loans disbursed for plantation crops.

Figure 8: Value of Cash Crop Loans Under ACGSF (1981 – 2015) (₦ '000)



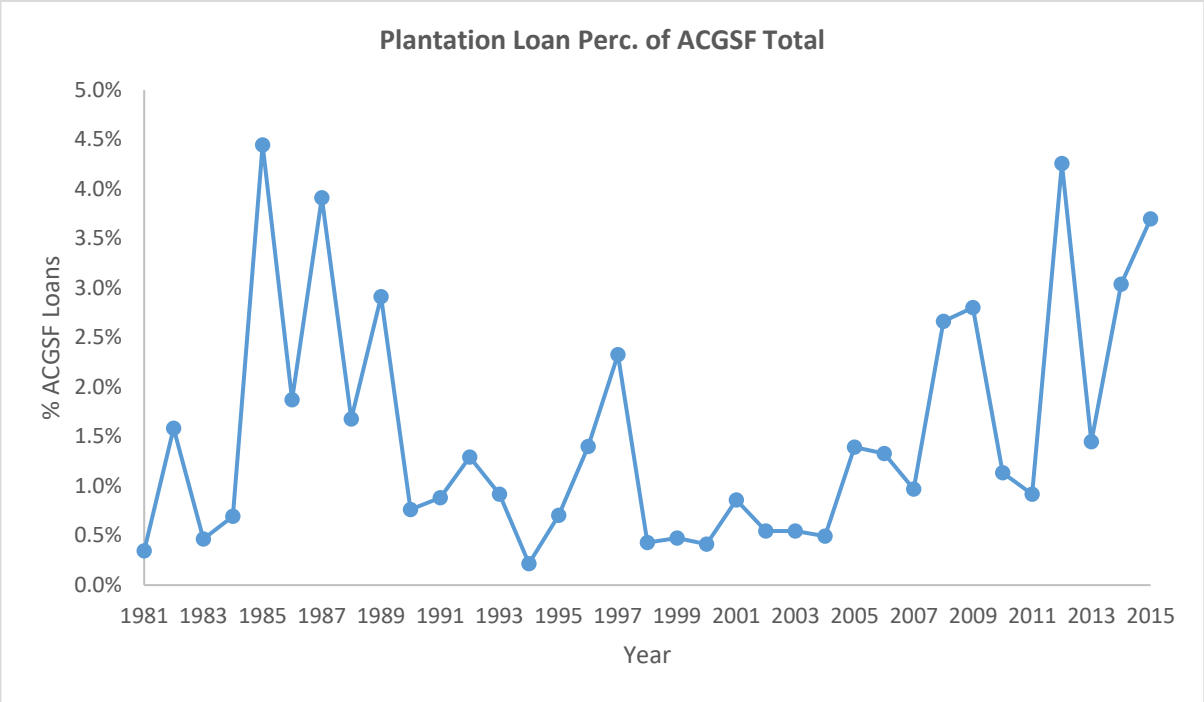
Source: CBN Statistical Bulletin, 2015 Data

Figure 9: Percent Value of Cash Crop Loans Under ACGSF for Plantation and Other Cash Crops (1981 – 2015)



Source: CBN Statistical Bulletin, 2015 Data

Figure 10: Percent Value of Loans Under ACGSF for Plantation Crops (1981 – 2015)



Source: CBN Statistical Bulletin, 2015 Data

4.3.3 Nigeria Incentive-Based Risk Sharing System for Agricultural Lending

The Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL) is an initiative of the Central Bank of Nigeria (CBN), the Bankers Committee (BC) and the Federal Ministry of Agriculture & Rural Development (FMARD). It provides guarantee in form of Credit Risk Guarantee (CRG) as a comfort for the Banks to lend and also incentivize the farmers through provision of Interest Drawback Program (IDP) to be paid quarterly based on the agricultural project. The Guarantee ranges from about 30-75% depending on the Agricultural value chain involved (nirsal.com). IDP also ranges from 20-40% depending on the category.

NIRSAL was established in 2011 based on learnings from the gaps that were noticed while implementing earlier credit guarantee programs which failed to have the desired impact. It was designed to encourage the growth of bank lending to the agricultural sector by providing risk mitigation, financing, trading and strategic incentives and technical assistance to Agribusiness with a start-up capital of ₦75 billion provided by the Central Bank of Nigeria in partnership with the Alliance for a Green Revolution in Africa (AGRA). NIRSAL is different from earlier agricultural credit guarantees because it is structured to incorporate all major stakeholders along the nodes of agricultural value chain such as input producers, farmers, agro-dealers, agro-processors, industrial manufacturers and exporters.

NIRSAL's goal is to promote increased production and processing of the greater part of what is produced to enhance earnings along agriculture the value chains. NIRSAL's strategic objective is to increase total value of agricultural lending- from the current 1.4 percent to 10 percent of total bank lending by 2026 by generating $3 billion of additional agricultural lending in order to boost food production levels, stimulate inclusive growth, create jobs and increase the standard of living of farmers who constitute the greater majority of our population. NIRSAL's plan is to further facilitate lending to 3.8 million agricultural producers out of the estimated 14 million agricultural producers in the country within the next 10 years by providing guarantees through intermediaries including Microfinance institutions and cooperatives. NIRSAL is implemented in partnership with several institutions. The major partners are presented in Table 9.

NIRSAL is a new approach that tackles together the agricultural value chains and the financing value chain through the following:

a) Fixing the agricultural value chains, so that banks can lend with confidence into cohesive and complete value chains;
b) Encourages banks to lend into the agricultural value chains by offering them strong incentives and technical assistance; and
c) Engages in active market access development in partnership with key buying groups, states, private investors, farmer groups and processors.

Table 9: NIRSAL Major Partners

Major Partners	**Other Partners**
Central Bank Nigeria (CBN)	**Financial Institutions**
The Bankers Committee (CEOs of deposit money banks, specialized banks and discount houses)	Access Bank
Federal Ministry of Agriculture & Rural Development (FMARD)	Jaiz Bank
Bank of Industry (BOI)	**International Agencies**
Bank of Agriculture (BOA)	GAIN
International Fund for Agriculture Development (IFAD)	USIAD MARKET
African Development Bank (AfDB)	**Agri-Related Business**
Raw Materials Research and Development Council (RMRDC)	Connect Rail Services Limited
Nigerian Investment Promotion Commission (NIPC)	The Nigerian Agribusiness Group (NABG)
	Capital Agric. Services

NIRSAL is based on five pillars that aim to “de-risk” agricultural lending and lower the cost of lending for banks. USD 500 million is divided across the pillars as follows:

a) Risk-sharing Facility (USD 300 million). To break down banks’ perception that agriculture is a high-risk sector, NIRSAL will share their losses on agricultural loans.
b) Insurance Facility (USD 30 million). The facility’s primary goal is to expand insurance products for agricultural lending from the current coverage to help reduce credit risks and increase lending across the entire value chain. NIRSAL therefore champions the entrance of new private sector insurance providers into the market in partnership with the National Insurance Commission, expanding the coverage of existing products provided by the Nigerian Agricultural Insurance Corporation (NAIC), and piloting and scaling new products, such as weather index insurance, new variants of pest and disease insurance etc.
c) Technical Assistance Facility (USD 60 million). NIRSAL will equip banks to lend sustainably to agriculture. At the same time, it will equip producers to borrow and use loans more effectively, and produce more and better quality goods for the market.
d) Holistic Bank Rating Mechanism (USD 10 million). This mechanism rates banks based on two factors: the effectiveness of their agricultural lending and its social impact.
e) Bank Incentives Mechanism (USD 100 million). To complement NIRSAL’s first three pillars, this mechanism offers banks additional incentives to build their long-term capabilities to lend to agriculture.

By the end of 2015, NIRSAL had guaranteed loans totalling N61.16 billion to agriculture and disbursed N753.35 million as rebate to borrowers who paid back loans on time between 2013 and 2015. This was the period when the agency was still a project implementation office under incubation within the Development Finance Department of the Central Bank of Nigeria (CBN). To date, NIRSAL has also guaranteed up to 207 agricultural value chain projects valued at N39.49billion under the Growth Enhancement Scheme (GES) programme of the Federal Ministry of Agriculture & Rural Development (FMARD) and paid $2.2 million (₦439.09 million) as interest draw back to beneficiaries on 91 agriculture related projects. Between 2013 and mid-2016, the institution trained 157,000 farmers/primary producers in 6 value chains including rice, cocoa, cotton, tomatoes, sesame, and soybeans.

4.3.4 Pension Funds

Pension funds constitute a large pool of funds that can be channelled to sustainable investment as they can be a source of funds for long-term investments under the REDD+ programme. This is mainly due to the long-term horizon of pension funds. However the investment of pension funds into long-term investments is limited. This is because pension fund managers are guided first and foremost by the principle of fiduciary duty, whereby they are obliged to act in the long term best interests of the beneficiaries of the fund. Pension funds are also subject to stringent regulatory requirements. This leads them to invest conservatively, in "tried and true" instruments.

During 2016, Nigerian regulators have approved plans to enable the investment of as much as $20 billion of pension-fund money in the development of the country's infrastructure (Bala-Gbogbo, 2016). This new instrument allows pension funds to invest in infrastructure bonds (e.g. for social housing and roads programs outside the public budget). With this new instrument, the REDD+ programme can tap into the pension funds for funding up-front investments in, for example, afforestation and reforestation activities.

4.3.5 Sustainable Stock Exchange

Stock markets are significant sources of capital for investment. Stock exchanges exert significant influence on listing companies through their listing requirements, especially the Environmental, Social and Governance (ESG) policies which define the three central factors in measuring the sustainability and ethical impact of an investment in a company or business. Corporate governance codes increasingly include CSR and sustainability issues and various stock exchanges around the world have instituted some form of ESG disclosure policy (i.e. transparency and procedures) in response to government regulation (SSEI, 2015). ESG disclosure requirements at the listing stage can have a significant impact on the business or legal developments relating climate change issues, since public listing is a key source of capital for many companies.

In addition, a number of industry-led initiatives operate through or around the stock market, such as special indices, and provide avenues for greening investment behaviour. Across the globe, several stock exchange regulators have policies that address sustainability – but the focus remains on ESG disclosure, rather than on incentivizing "green". With reference to the Nigerian Stock Exchange (NSE) the following is noted (SSEI, 2016):

i. The number of listed companies on the Nigerian stock exchange is currently 186;
ii. The domestic market capitalization for Nigeria rose from ₦8 910 billion (USD 56.4 billion) in 2012 to ₦44 300 billion (USD 224 billion) at the beginning of 2016.

iii. The NSE has signed the Sustainable Stock Exchange (SSE) commitment letter and has prepared the SSE Communication to stakeholders; and
iv. At the moment the NSE does not require ESG reporting as a listing rule and does not offer written guidance on ESG reporting. However, the NSE provides ESG related training.

4.3.6 Public-Private Partnerships

Public-private partnerships (PPPs) have been long recognized as a viable vehicle to help deliver a public service for which the private sector party bears significant risk and management responsibility. PPPs promote much needed inclusive governance and serve as a key tool to inject private sector capital into such public service delivery projects.

Fazeli, Martel, and Roberts (2016) reiterates the effectiveness of such partnerships and gives some pointers to how governments and private sector can work together to drive economic development and progress the transition to low carbon economies, the key of which are:

i. **Establishing lines of communication and coordination:** Public-private partnerships and regular communication and coordination with State Energy Officials (SEOs) can help cultivate optimal policy environments over time.
ii. **Leveraging states' comprehensive energy planning process:** Early and continued input into energy plans may help set a positive, stakeholder-driven policy direction and may increase the likelihood of creating an energy policy environment that is friendly to investors, companies and their customers.
iii. **Including utilities and large energy users in legislative and regulatory discussions:** Meaningful participation of the largest utility customers in energy-savings efforts is critical for realizing the benefits of energy efficiency and renewable energy investments. These customers often have unique needs and programs must be tailored to meet them.
iv. **Utilizing partnerships to implement incentives and financing:** Grants and incentives represent key tools to promote the expansion of clean energy markets, tap into the benefits of energy technology-based economic development and job growth, and create platforms for effective public-private partnerships.

For Nigeria, PPPs can be forged between the public sector and private sector actors in the energy sector and other sectors impacting on the key drivers of deforestation and forest degradation to raise the much-needed capital to invest in REDD+ activities. The private sector actors that can be considered to pilot PPPs for this purpose can include the bank & non-bank

finance sector and the big corporates in the agribusiness sector like PZ Cussons, Nestle, and Wilmar International.

4.3.7 Green Bonds

Green bonds are created to encourage sustainability and the development of brownfield sites. More specifically, green bonds finance projects aimed at energy efficiency, pollution prevention, sustainable agriculture, fishery and forestry, the protection of aquatic and terrestrial ecosystems, clean transportation, sustainable water management, and the cultivation of environmentally friendly technologies. Green bonds can be issued by the public or private sectors, and the multi-national banks or corporations. The issuing entity guarantees to repay the bond over a certain period of time, plus either a fixed or variable rate of return.

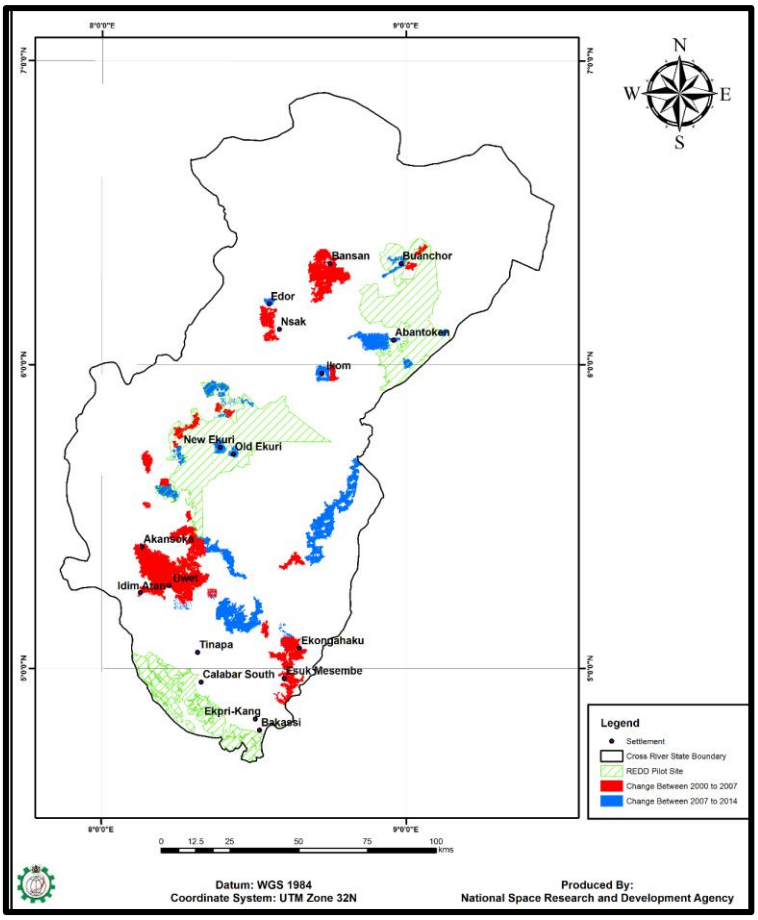
Green bonds have the potential to deliver the low-carbon, climate resilient infrastructure needed in Nigeria. Nigeria, like most countries around the world, faces vast investment needs for the transition to a sustainable, low-carbon and climate resilient economy. The government has made it clear that private sources of finance are needed and therefore, tapping into the international capital markets, as well as domestic capital is crucial for the country. Nigeria's Intended Nationally Determined Contributions (INDC) document puts the target for the nation's contribution towards climate improvement and following a low-carbon path to progress $142 million between now and 2030 (*cf. reports in the Daily Times & Daily Trust newspapers of Sept. 14, 2016*). To meet the investment needs gap towards a low-carbon development path, there is significant market potential for Green Bonds in Nigeria to develop climate change mitigation and adaptation interventions. Green Bonds can be used to mobilise funds from investors who have strong environmental focus, require transparency and have lower risk appetite (*cf. reports in the Daily Times & Daily Trust newspapers of Sept. 14, 2016*).

The tax-exempt status of green bonds makes purchasing a green bond a more attractive investment compared to a comparable taxable bond, providing a monetary incentive to tackle prominent social issues such as climate change and a movement to renewable sources of energy.

5. REDD Projects within CRS - Private Sector-Supported REDD+ Related Activities

CRS is implementing three REDD pilot projects (GCF, 2010). The REDD+ sites relative to hotspots location for deforestation in Cross River State are shown in Figure 11.

Figure 11: Location of REDD+ Project Sites, CRS



Source: NASRDA & FAO, (2015).

Ekuri – Iko Esai - Okokori - Etara- Eyeyeng – Owai - Ukpon River Forest Reserve REDD+ Project (94,000 ha): The Ekuri – Iko Esai - Okokori - Etara-Eyeyeng – Owai - Ukpon River forests are located in the Akamkpa and Obubra and Etung Local Government Areas of Cross River State. The area is bounded to the east and south by the Cross River National Park boundary, to the west by the Iko Esai lands and to the north by community farmlands. Old and New Ekuri jointly established the Ekuri Initiative as an NGO to conserve and manage their 33,600ha community forest sustainably for purpose of community development.

Iko Esai's forests are contiguous with those of Old and New Ekuri. An NGO called the Centre of Education, Research and Conservation of Primates and Nature (CERCOPAN) has worked

with Iko Esai for over 7 years to help protect approximately 20,000 hectares of Iko Esai's community forest. In addition, there are Forest Management Committees in several of the other villages in the proposed project area including Iko Esai, Etara, Eyeyeng, and Owai. Besides community forest lands, the pilot also includes the Ukpon Forest Reserve which is administered by the Cross River State Forest Commission in partnership with the communities.

Afi Mountain/Mbe Mountains REDD+ project (approx 50,000 ha): This forest area contains several contiguous management units. These include:

a) Mbe Mountains – is surrounded by 9 villages and has a population of the critically endangered Cross River gorilla. In 2005 the Conservation Association of the Mbe Mountains (CAMM) was established by WCS and another NGO called Development In Nigeria (DIN).
b) Afi Wildlife Sanctuary – being managed by the Afi Partnership that includes WCS, Pandrillus, the Nigerian Conservation Foundation & Fauna and Flora International (FFI).
c) Afi Forest Reserves – being managed by the CRSFC.
d) Community forests to the south - these belong to the villages of Bashu, Bashua Danare, Bendeghe Afi, Iso Bendeghe and the 9 Abo villages. All these villages have Forest Management Committees (FMCs) and have been supported in the past by the DFID community forestry programme and another community forestry programme run by an NGO called Living Earth.

Cross River Mangroves (58,900 ha): This mangrove forest is known to be richer in biodiversity than mangroves elsewhere in West Africa. It is disturbed, but probably less so than most other coastal areas of Nigeria with intensive fishing and the harvesting of crabs and shellfish. The government gazetted the Cross River Mangroves as a new forest reserve in 2008.

Wilmar International (26,000 ha): The company has to date acquired the existing oil palm estates previously run by the state. These are the Ibiae and Calaro estates which the company is replanting on previously degraded land in Akamkpa and Biase LGAs; there are three (3) other acquired estates between these LGAs which the company is not using yet pending resolution of outstanding issues including with the Cross River National Park. The project is self-funded via a joint venture with PZ Cussons Ltd. Wilmar International:

i. Currently produces palm oil basically for by-product processing by PZ Cussons in Lagos State but has the capacity to produce for a large direct consumption market in Nigeria.

ii. Currently has a total of 2,014 local employees. Executive staff comprise 25 local and 30 expatriate staff; this makes the company the largest employer of labour in the state.

iii. Needs more land – a total of 50,000 hectares; it has an existing holding of 26,000 hectares out of which 10,000 hectares are developed. With 50,000 hectares, it can set up a refinery in the state and create a lot more employment and provide alternative livelihoods for increasingly unemployed young people in the state and help stem the rural-urban migration.

iv. Has a strong and viable out-grower Scheme which it has set up to provide a win-win solution for both itself and its host communities. The current Out-grower Scheme comprises more than 40 co-operatives (each cooperative comprising of at least 20 farmers) with more being set up. To qualify to participate in the out-grower scheme, each member of a co-operative should have a maximum of 5 hectares of land. Out-growers are educated on best practices with respect to oil-palm farming, identification and conservation of "reserve areas" based on RSPO requirements;

v. Is also running, in partnership with the Central Bank of Nigeria (CBN), the Anchor Borrowers' Programme, which is structured as a commercial agricultural loan scheme to support its out-growers. Under this programme, Wilmar provides high quality seedlings and all other inputs and extension services to its out-grower communities to enable them plant crops whose cultivation does not impact negatively on their community forest areas and which they can both consume and sell - for which there is high existing demand locally. The proceeds of these communities' produce then serve as repayment for the loan, usually repaid over a term that is comfortable for them based on seasonal and farm-ready processes considerations; the farmers are also incentivized by the company (paid a monthly stipend) so that the community forests can be conserved. This is a standard internal business model for Wilmar International.

vi. In addition, Wilmar is a member of the Roundtable on Sustainable Palm Oil (RSPO) and is, by this, expected to operate within the principles and technical requirements of the RSPO. Hence due to its membership of the RSPO is fully eco- or environment conscious. It is also keenly aware of REDD and UN-REDD+. It has a standing internal corporate policy not to venture into Greenfield areas to set up plantations, etc. (pers. Comm). The company follows its global parent holding company's "zero deforestation" policy**.** The company passed through a competitive bidding and free, prior, and informed consent processes to meet government's requirements and acceptance by affected communities.

vii. Has a CSR policy under which it additionally plans to support environmental education from primary school level and support the planned afforestation and reforestation activities of the current Cross River State Government initiative. The company is

currently working out an internal scheme to 'impose' an "internal carbon tax scheme" on its own employees based on measurable carbon emissions from the use by its own staff across all levels of its own company vehicles. The tentative/proposed structure is to measure on a monthly basis the amount emitted by its staff and apply a pre-agreed internal tax rate on this. The monthly total will be aggregated and paid over to Cross River State as part of its contribution to the State's sustainable greening activities. It also intends to use a part of these internal 'carbon tax' proceeds to fund tree-planting activities and planting of various other agri-value chain seedlings to support the provision of alternative livelihoods. The scheme, as at the time of this study and report was/is still being worked out in both in partnership with the Cross River government and with the out-grower communities and its own staff. There is also a plan to agree and put in place a structure for monitoring, measurement and evaluation of this proposed scheme for accountability and transparency purposes.

6. Key Private Sector Actors & Barriers to Participation in REDD+

6.1 Key Private Sector Actors

The key private sector actors in CRS categorized by driver of deforestation are listed in Table 6.

Table 6: Key Private Sector Actors Impacting on Deforestation and Forest Degradation

Type of Activity	Actors
1.Subsistence Agriculture	Predominantly rural farming communities in most parts of the state.
2. Commercial Agriculture	Key agricultural value chains in Cross River include oil palm, other commercial crops, e.g. cocoa, pineapple, rubber, and cashew. Key private sector actors in CR: Oil Palm - Wilmar Ltd (large scale); Real Oil Ltd (SME); and Pineapple (Dansa Foods Ltd).
3. Fuelwood consumption	All rural communities & some urban largely for domestic use and/or limited commercial activities in the urban areas such as cooking for events, functions, etc.
4. Logging & timber extraction	In spite of the subsisting ban on logging in CRS, this has persisted. Due to the subsisting logging ban, no organized private sector actors in CR.
5. Energy producers	MSMEs, etc. engaged in charcoal production for domestic use and export to markets in the Middle-East & Eastern Europe – increasing demand = more high value trees being cut down. No organised private sector actors in CR.

Type of Activity	Actors
6. Mining / Quarrying	Various solid mineral mining by SMEs/large companies. In the past 17 years, 29 companies (38 including those named below as road construction contractors) have engaged in solid mineral mining activities – especially limestone quarrying – in Cross River: L.C.C. Company; Expanded Mining Nig. Ltd.; HZ Blazer Co.; Saturn Co; Mark-Sino Co; Win-Xin Co.; Two Brothers Co.; Uranus Co.; S&V Nig. Ltd.; Faith Plant Global Ltd.; H&K [Power/Racon] Co.; Crushed Rock Nig. Ltd.; Predeco Nig. Ltd.; Thejan Nig. Ltd.; Piccolo Nig. Ltd.; Sactone Nig. Ltd.; Ideke Nig. Ltd.; Prod Nig. Ltd.; Genec Nig. Ltd.; Ding Zheng Ltd.; Star Advantage Co.; Wings of Heaven Co.; Japaul Mine Co.; Enerco Co.; Xin-Xin Co.; SK Touch Co.; Lafarge Holcim Cement Co. Ltd. (formerly UNICEM before its takeover by Lafarge); Rufus Ventures Ltd.; Zing Zheng Co.
7. Infrastructural development	Real estate development; road construction, etc. undertaken to drive economic development and facilitate access to markets – policies of government. Companies that have been involved in road construction in the past 17 years in Cross River are: Arab Contractors Nig. Ltd., RCC Construction Co. Ltd., Hi-Tech Nig. Ltd., Zenith Construction Nig. Ltd., Sematech Nig. Ltd., CCECC Nig. Ltd., Julius Berger Nig. Ltd., Gitto Construction Ltd., Setraco Nig. Ltd. (all also have been involved in varying degrees in quarrying activities in the state)

6.2 Barriers to Private Sector Participation in REDD+

The key barriers to private sector participation in REDD+ in Nigeria include the following:

i. Low levels of eco-awareness among the private sector;
ii. Low awareness of existing environmental funding opportunities among civil society organizations and REDD+;
iii. Low levels of private sector stakeholder engagement in REDD+; and
iv. Low levels of awareness and involvement by bank and non-bank financial institutions, etc.

6.2.1 Low level of eco-awareness among the private sector

Private sector actors appear to be non- to ill-informed about eco-issues in general and about REDD+ specifically. Direct feedback from key informants indicates this to be largely the result of non-inclusion or non-consultation by public sector actors prior to or during the process of evolving policies and/or passing laws that affect the environment, etc. Additionally, historical functional “segregation” of system actors, e.g., the public sector works separately from the private sector, communities, civil society and non-governmental actors all work in parallel trajectories, barely or very occasionally crossing in need – thus there is no conscious effort at

inclusiveness across all sectors/groups resulting in widespread ignorance on the part of key private sector actors whose roles can be fundamentally supportive to sustaining REDD+. This phenomenon has also impacted on the private sector's respective CSR activities as it appears that there is no CSR programme that is either extensively or directly focused on the protection of the environment beyond, in negligible cases, one-off tree-planting activities. The options to increase the level of eco-awareness among the private sector are presented in Table 7.

Table 7: Options to Increase the Level of Eco-Awareness among the Private Sector

Options	Description
1. Education/sensitization of private sector about REDD+.	The private sector is well-organized at both state and national levels [organized private sector (OPS) and these organizational vehicles can be easily used to educate and sensitize private sector actors by the public sector, relevant NGOs and CSOs [civil society organizations] through attendance at their [OPS] respective organizational annual general meetings, website posts, media channels. The conscious and sustained engagement of leadership of private sector actors' host communities by key private sector actors and the public sector together with CSOs in regular all-inclusive town hall meetings will also effectively support widespread education and sensitization (e.g. Wilmar Nigeria Ltd., largest oil palm cultivation business in CRS that has held monthly all-stakeholder town hall meetings to both educate and involve stakeholders in their internal policy decision-making processes, media chats, etc.). Development of key knowledge management and dissemination tools for UN-REDD+ will also be a critical success factor in promoting this across all groups and actors.
2. Promotion of Public Private Sector Dialogues (PPDs) involving local communities, civil society and other key actors to evolve a robust and holistic policy for Corporate Social Responsibility (CSR) and/or Corporate Environmental Responsibility [CER]	The Public-Private Engagement Mechanism (PPEM) is a globally tested tool for inclusive governance and for obtaining required buy-in of all stakeholders that are critical to the sustained successful implementation or enforcement of a policy or law. The lack of it ensures that policies are confusing and contradictory, not effective, laws are non- or poorly enforced, etc., resulting in no wins for either government or private sector and/or other key actor groups. Public-Private-Sector Dialogues (PPDs) are the outputs of establishing PPEMs as a key governance tool and should be used by ALL actors – spearheaded by government [public sector] to facilitate activities by the private sector that will ensure adherence to REDD+ principles and continued awareness of the same: all policy making and law passage processes should, as a matter of principle, be submitted to PPDs BEFORE they are made and/or passed to ensure holistic buy-in of all key groups and, consequently, their application and enforcement.

6.2.2 Low awareness of existing environmental funding opportunities among civil society organizations and REDD+

In CRS, there is very limited knowledge by NGOs, CSOs and CBOs about actual and potential sources of cheap [low single digit] funding to support the direly needed establishment of alternative livelihoods for communities who are both affected by deforestation activities and who continue to engage in activities that impact negatively on the forests as they do not see alternative ways of forging their livelihoods. Currently, very few donors are supporting enterprise capacity building efforts in this regard targeting a few NGOs and CBOs but are not able to link these efforts with both capacity building efforts and supporting funding access already existing within the system they operate in (banking sector, public sector and private

sector limited CSR funds, etc.) to target beneficiaries due to the issues of lack of education, ignorance and working along parallel trajectories. There are also, on the part of these donors, issues of project focus, budget limitations that truncate their efforts, etc., resulting in knowledge and information gaps among NGOs, etc. Public sector actors such as MEDA are also unaware also of REDD+ and their potential role in its implementation by supporting the establishment of alternative livelihoods for affected target audiences while existing potential funding sources are practically oblivious of REDD+, etc., and the potential business development that exists for them, e.g., by expanding their deposit and interest income base. The options to increase the awareness of environmental funding opportunities are presented in Table 8.

Table 8: Options to Increase Awareness of Environmental Funding Opportunities

Option	Description
1. Promotion of platforms for information sharing among CSO/CBOs on climate change and financing (knowledge bank)	NGOs, CBOs, etc., have existing coalitions that can be strengthened to constitute a dynamic information channel(s)/vehicle by alliance – both to obtain relevant information from the banks – particularly the micro-finance banks (some of which already fund micro-enterprises to commercially cultivate non-timber forest and other cash crops:- e.g. UNICAL Mfb, Ekondo Mfb, LAPO Mfb; Bank of Agriculture and Bank of Industries which fund SMEs, and similarly; CBN-EDC which both builds entrepreneurial capacity of MSMEs and links them to cheap funding support; MEDA, the CRS agency which also builds MSME entrepreneurial capacity and channels state government counterpart funding for on-lending at low single digit rates to MSMEs in the State, etc.). The banking sector is also well organized in Nigeria at both state and national levels - both retail and micro-finance banks have their respective organized platforms [Nigerian Banks' Association, Nigerian Micro-Finance Banks' Association, Association of Bank & Non-Bank Financial Institutions which includes insurance companies] and these vehicles can be easily accessed and used inclusively by relevant government MDAs [MEDA] to disseminate needed information about their services/share information on climate change, etc.; by NGOs, etc., to access needed information about capacity building and funding support and share information on climate change, UN-REDD+, other eco-information, etc.; and bank and non-bank actors to give out information about their products and services, developments in the finance industry, etc., that affect target beneficiaries, and get input to win-win financial product development that will resolve macro-economic issues for sustainable development of alternative livelihoods. The media, both public and private sector owned, will be key partners in promoting such platforms as will be UN-REDD+ Knowledge Management tools in supporting them. The platforms exist but do not function co-existentially on the basis of sharing (a) common interest – this should be actively encouraged and pursued by all these groups of key REDD+ stakeholders.

6.2.3 Low level of awareness by bank actors about UN-REDD+ and green banking products

In 2012, the Central Bank of Nigeria (CBN), as the banking regulator in Nigeria, issued directives to be adhered to by all banks including micro-finance banks in Nigeria, to operate within their business environments in ways that will protect the environment. This was as a

direct result of the 2012 Nigerian Sustainable Banking Principles (NSBP) – comprising nine (9) core environmental protection principles which were earlier in that year developed and signed up to by the Nigerian Bankers' Committee. The NSBP is binding on all banks in Nigeria. However, it appears that about 80% - 85% of banks interviewed were either not aware of this policy or were vaguely aware – the result being that only a few are engaged in one-off insignificant afforestation activities under their CSR programmes and only one banking institution [Access Bank] appears to stand out in its conscious efforts to embed NSBP in its banking/credit processing and disbursement operations (although admittedly a lot more can be done). This gap appears to be caused by both intra-bank systems (communication/education gaps between bank head offices and their branch networks) and externally (non- to weak monitoring and enforcement activities by the regulator CBN and lack of engagement/inclusiveness by government and other non-government key actors) – again, issues highlighted above. There is insignificant knowledge across the board in this sub-sector (as with private sector actors generally) about the UN-REDD+ and specifically about green banking. The options to increase the awareness of bank actors about REDD+ and green banking products are presented in Table 9.

Table 9: Options to Increase the Awareness of Bank Actors About UN-REDD+ and Green Banking Products

Options	Description
1. Engaging with the banking sector to support investments in all aspects of the REDD+ Programme.	The PPDs highlighted earlier are critical here. ***Initially critical*** is the need for UN-REDD+ state and national teams/UNDP to specifically engage with identified strong key actors in the banking industry in Nigeria (state and national) and i) educate them about REDD+ including benefits to them of fully keying in based on experiences in similar jurisdictions, including on green banking products and services; and ii) elicit from and evolve in partnership with them investment opportunities to explore and promote in the Nigerian eco- and business environment. The outcomes of these initial engagements will feed into and drive subsequent PPDs, etc.
2. Promoting and enforcing Certified Emissions Reductions (CER) for companies and industries to operate in ways that protects the environment.	Industry in Nigeria is largely ignorant about CER. A CER is a certificate which is issued every time the United Nations prevents one tonne of CO_2 equivalent being emitted through carbon projects registered with the Clean Development Mechanism (CDM) - these include for example replacing coal fired electricity with clean technology, or methane capture from landfill sites or industries using alternative clean renewable sources of power to replace electricity generating sets. The CDM ensures that each carbon project would not have happened anyway (additionality), and independently establishes a baseline estimating the future emissions in the absence of each project. Once a project is registered and implemented, the CDM issues just enough CERs to cover the monitored difference between the baseline and the actual emissions. When a company/industry offsets its carbon footprint with a carbon offset company [e.g. Clear], the latter buys the correct number of CERs on their behalf and then retires them through an Emissions Registry [e.g. the UK Emissions Registry] to make sure they are not used again. So in essence, the company/industry's contribution makes sure that less greenhouse gas

Options	Description
	emissions get pumped into the atmosphere somewhere else, which offsets a specific proportion of their carbon footprint. CERs can be bought in bulk to get a good price, and pass that discount on to the offset company's customers. This process guarantees that the carbon offset paid for is both genuine and cost-effective. This is virgin territory in Nigeria and the private sector, including the banking sub-sector, needs to be educated fully about this to enable the informed exploration of opportunities in business/market environment development to sustain this in the country– this should also be the subject matter of an initial education engagement of the private sector including the banking sub-sector as highlighted above with the close involvement and in partnership with the CBN and key OPS groups at the state and national levels in Nigeria.

6.2.4 Low levels of private sector stakeholder engagement in REDD+

A review of the report on Participatory Governance Assessment for REDD+ and Natural Resources Management in Nigeria (UNREDD Programme, 2015) revealed a number of shortcomings in relation to stakeholder participation (Matakala and Okonofua, 2016):

i. Community members are averagely informed through community level meetings as well as direct participation in forest resources management;
ii. There are a number of similar carbon-based projects but with different objectives and messages, sometimes leading to conflicting messages on carbon credit mechanisms and REDD+ implementation phases. The situation creates apathy and builds mistrust in communities;
iii. Generally, local communities are not adequately sensitized on the procedures and expectations of the REDD+ process, especially with regard to when to expect payments and benefits from REDD+ process as well as non-carbon benefits;
iv. There are strong concerns and high anxiety that local communities' interests (social, economic and environmental) will not be realized through the REDD+ process;
v. There is low level of knowledge among communities on financial mechanisms and rights to carbon credits;
vi. There is low community awareness about causes and impacts of deforestation and forest degradation on local livelihoods, forest ecosystems and climate change;
vii. Civil society awareness about REDD+ and funding opportunities is weak;
viii. Private sector awareness about REDD+ in general is weak; and
ix. REDD+ awareness among media houses/institutions is generally weak.

The options to enhance private sector stakeholder engagement in REDD+ are presented in Table 10.

Table 10: Options to Enhance Private Sector Stakeholder Engagement in REDD+

Options	Description
1. Definition of clear roles and responsibilities of all stakeholders in REDD+ and in consultation with the stakeholders (MDAs, civil society, private sector, academia, local communities, the media, etc.).	Stakeholder engagement and participation in REDD+ planning, implementation and evaluation are key pre-requisites for REDD+ success, ensuring transparency and accountability in decision-making. It is also recognized low participation could be as a result of low levels of awareness about REDD+ and hence the need for purposive actions to involve all key stakeholders and raising awareness among all stakeholders about REDD+.
2. Strengthening the existing UN-REDD+ Stakeholder Forum and other REDD+ Working Groups and Technical Committee.	These platforms already exist but they are generally weak and uncoordinated. Strengthening them would aid REDD+ implementation and monitoring.
3. Amending the CRS Forest Commission Law to expand membership on the Commission to include representation from Ministry of Agriculture, Ministry of Water Resources, Ministry of Lands and Housing, Surveyor General's Office and possibly open it up beyond the public sector to include academia, private sector, civil society, local communities and the media.	Opening up representation to include other relevant public sectors and beyond the public sector would ensure balanced representation across all relevant stakeholders, transparency and accountability in REDD+ decision-making.
4. Reactivating the Cross River State Climate Change Council as promulgated under the CRSFC Law (2010).	As an apex body, the Council is responsible for coordinating all climate change issues in CRS. Its reactivation would help contribute to clear institutional arrangements at State level. Membership on the Council would also be required to be robust enough balance across all stakeholders.
5. Engaging with established and organized networks/platforms of private sector, civil society, community-based organizations, academia and the media in REDD+ discourse in order to raise awareness.	Established stakeholder networks/platforms offer a great opportunity to heighten awareness about REDD+ and facilitate buy-in with the advantage of reaching greater numbers associated with those platforms.

REFERENCES

Acha, I.A. 2012. Non-Bank Financial Institutions and Economic Development in Nigeria. **International Journal of Finance and Accounting** 2012, 1(2): 14-22

Agarwal, A., and Gupta, K. 2005. Decentralization and participation: The governance of common pool resources in Nepal's Terai. **World Dev.**, 33, pp. 1101-1114.

Agbor, C.O. 2008**. Forestry: the Environment and Poverty with Special Reference to Cross River State.** Invited Paper Presented at the Stakeholders' Summit on the Environment held in Calabar, Nigeria, June 2008.

Akosim, C., Tella, I.O., and Jatau, D.F. 1999 Vegetation and Forest Resources. In: Adebayo, A.A. and Tukur, A.L. eds. **Adamawa State in Maps.** Yola, Nigeria, Paraclete Publishers.

Ayuba, H.K. (2005) **Environmental Science: An Introductory Text Book**. Kaduna, Apani and Loud Book.

Ayuba, H.K., Aji, Y.M., and Msheliza, D.S. 2003. **Cultural Dynamics in Resources Utilization, Conservation and Management among Rural Communities in Maiduguri, Borno State**. SalonePselio, Education Service.

Bala-Gbogbo, E. 2016. **Nigeria Eyes $20 Billion Pension Funds for Infrastructure**. Bloomberg

Bdliya, P. M. **Small Scale Farming in Nigeria: Problems and Prospects.** A paper presented at a National Workshop organized by National Productivity., Benin City (1998). 21st – 23rd July

Central Bank of Nigeria (CBN). 2014. **Revised Guidelines for Finance Companies in Nigeria**.

Central Bank of Nigeria (CBN). 2012. **Nigerian Sustainable Banking Principles.** Financial Policy & Regulation Department

Clarke, R., Lamb, L., and Schwarzer, S. (2003) **Global Environment Outlook 3: Past, Present and Future Perspectives**. UNEP.

Edame, G.E., A.B. Ekpenyong, W. M. Fonta, and EJC Duru. 2011. Climate Change, Food Security and Agricultural Productivity in Africa: Issues and policy directions. ***International Journal of Humanities and Social Science*** *Vol. 1 No. 21 [Special Issue - December 2011]*

Ele I.E., Omini G.E., and B.I. Adinya. 2013. Assessing the Extent of Commercialization of Smallholding Farming Households in Cross River State, Nigeria. ***IOSR-JAVS****, Volume 4, Issue 2 (Jul. - Aug. 2013), PP 49-55*

Enang E.E. 2013. Growth in Farming Population and Land Depletion and Deforestation in Rural Communities of Cross River State: The Case of Obubra Local Government Area, Nigeria. **Journal of Educational and Social Research** *Vol. 3 (2) May 2013*

Eneji, C-V.O, D.A. Ogar, C.K. Essien, and A.G. Bullum. 2014. **An Assessment of Deforestation Rates in Bekwarra Local Government Area of Cross River State, Nigeria.** *Journal of Environment (2014), Vol. 03, Issue 02, pp. 28-37*

Eneji, V.C.O., Qi, G., Okpiliya, F.I., Aniah, E.J., Eni, D. D., and Afanghideh, D. 2009a. Problems of Public Participation on Biodiversity Conservation: the Nigerian Scenario. **Journal of Impact Assessment and Project Appraisal**, Manchester UK, 27(4), pp. 301-307

Eneji,V.C.O, Qi, G., Jian, X., Oden, S., and Nand Okpiliya, F.E. 2009b. A Review of the Dynamics of Forest Resources Valuation and Community Livelihood: Issues, Arguments and concerns. **Journal of Agriculture, Biotechnology and Ecology**, 2(2), pp. 210-231.

FAO. 2007. **Deforestation in Nigeria**. FAO.

Fazeli S., R. Martel, and A.G. Roberts. 2016**. Private-Public Partnerships to Advance Low-Carbon State Energy Policies.** A NASEO-Ceres Issue Brief

Fon P., O.A. Akintoye, T. Olorundami, C.O. Nkpena, S.U. Ukata, and E.U. Harrison. 2014. **Forest Resources of Cross River State: Their Potentials, Threats and Mitigation Measures.** *IOSR Journal of Environmental Science, Toxicology and Food Technology (IOSR-JESTFT).Volume 8, Issue 6 Ver. III (Jun. 2014), PP 64-71*

GCF. 2010. **GCF Database: Cross River State, Nigeria**. Version 4

GCF. 2014. **Strengthening Forest Carbon Accounting Systems in Cross River State, Nigeria: Sample Design and Work Plan.** Technical Report prepared for Cross River State Forestry Commission with funding support from the Governors' Climate and Forests Task Force.

Geist, J. Helmut and Eric F. Lambin. 2002. Proximate Causes and Underlying Driving Forces of Tropical Deforestation. ***BioScience*** 52 (2):143.

Ibrahim, A.M. (2002) **Introduction to Environmental Problems and Management**. Kano, Wa'adallah Environmental Consults.

Kissinger, G., Herold M. and De Sy V. 2012. **Drivers of Deforestation and Forest Degradation.** A Synthesis Report for REDD+ Policymakers. Lexeme Consulting, Vancouver Canada.

Mamza, J. U. 2008. **Biodiversity Conservation, Resource Utilization and Rural Livelihood Options in Cross River State.** Paper presented at the Stakeholders' Summit on the Environment, Calabar, June 2008.

Mavunganidze, Z., Madakadze, I., Mutenje, M. and Nyamangara, J. 2013. Factors affecting the choice of conservation agriculture practices adopted by smallholder cotton farmers in Zimbabwe, **African Journal of Agricultural Research**, Vol. 8(17), pp. 1641-1649.

Mbina, A.A. 2014. **Deforestation in Obubra Local Government Area: The Challenges before the Cross River State Anti-Deforestation Commission.** Civil and Environmental Research, Vol.6, No.7, 2014

NASRDA & FAO. 2015. **Study on the Drivers of Deforestation and Forest Degradation in Cross River State**. A collaboration between the National Space Research and Development Agency and the Food and Agriculture Organization

Ogogo A.U., Odigha O. & Aya F. A. (2013). Ecological Restoration and Climate Change Mitigation Strategies Cross River State, Nigeria. **International Journal of Research in Applied, Natural and Social Sciences (IJRANSS),** Vol. 1, Issue 1, June 2013, 13-18. Impact Journals

Oates, J.F., McFarland, K.L., Groves, J.L., Bergl, R.A., Linder, J.M., and Disotell, T.R. (2003) **Protecting Forests**.

Fauna in Cross River, Nigeria. In: Taylor, A.B., and Goldsmith, M.L. eds. **The Cross River Gorilla: Natural History and Status of a Neglected and Critically Endangered Subspecies**. Cambridge, UK Cambridge University Press, pp. 472-497.

Odihi, J. (2003) Deforestation in Afforestation Priority Zone in Sudano-Sahelian Nigeria. **Applied Geography**,
23(4), pp. 227-259

Odoemenem I.U. and J. A. Inakwu. 2011. **Economic analysis of rice production in Cross River State, Nigeria.** Journal of Development and Agricultural Economics Vol. 3(9), pp. 469-474, 12 September, 2011

Ogunjobi, J.A., Meduna, A.J., Oni, S.O., Inah, I.E., and Enya, D.A. 2010. Protection Staffs' Job Perception in Cross River National Park, Southern Nigeria, Middle-East. **Journal of Scientific Research**, 5, pp. 22-27.

Ohen S.B. and E.A. Ajah. 2015. **Cost and return analysis in small scale rice production in Cross River State, Nigeria.** International Research Journal of Agricultural Science and Soil Science, Vol. 5(1) pp. 22-27

Oloruntoba, A., and Adetokumbo, O. (2006) determinants of household's participation in social forestry in a zone of northern Nigeria.Journal of food. **Agriculture and Environment**, 4(2), pp. 320-326.

Oluwasola O., Idowu, E. O. and Osuntogun D. A. (2008). Increasing agricultural household incomes through rural-urban linkages in Nigeria, African Journal of Agricultural Research Vol. 3 (8), pp. 566-573

Omoregbee, O.R. and T. Iyamu, 2014. **Management Systems Framework for Addressing Farmers Constraints in Cross River State of Nigeria.**
G.J.C.M.P.,Vol.3 (4):86-91

Onyenkazi, H.A. and Adeniji, O.B. (2013). Comparative Assessment of the Impact of Private and Public Extension Services on Food Security in South-South Nigeria, SWISS Journal of Applied Sciences, Vol. 2, Issue. 9, pp. 21 – 29.

Oyebo, M., Bisong F. and Morakinyo T. 2010. **A Preliminary Assessment of the Context for REDD in Nigeria**. Url: http:// www.gcftaskforce.org /meeting /documents /Nigeria_National _Update_ GCF_2 011.pdf

Rademaekers, K., Eichler L., Berg J., Obersteiner M., Havlik P. 2010. **Study on the evolution of some deforestation drivers and their potential impacts on the costs of an avoiding deforestation scheme.** URL: http://ec.europa.eu /environment / enveco /biodiversity /pdf / deforestation _drivers _report.pdf

Rateiwa, R. and M.J. Aziakpono. 2015**. Non-Bank Financial Institutions and Economic Growth: Evidence From Selected African.** University of Stellenbosch Business School

Rigg, J.D. (2006) 'Land, farming, livelihoods and poverty: Rethinking the links in the rural South'. **World Development**, 34, pp. 180-202

Robert, S. 2007. **Tropical Deforestation in Southern Chittagong, Bangladesh Using Remote Sensing and Modelling (GISIEM4): Problems, Prospects and Research Needs**. Canada, pp. 1-3.

Sa'ad S. and I. Bugaje. 2016. Biomass Consumption in Nigeria: Trends and Policy Issues. **Journal of Agriculture and Sustainability**, Volume 9, Number 2, 2016, pp. 127-157

Sustainable Stock Exchange initiative (SSEI). 2016. **Nigerian Stock Exchange**. http://www.sseinitiative.org/fact-sheet/nigeria-stock-exchange/

Sustainable Stock Exchange initiative (SSEI). 2015. **Model Guidance on Reporting ESG Information to Investors: A Voluntary Tool for Stock Exchanges to Guide Issuers**.

Titilola, S.T. 2000. **Environment and Sustainable Agricultural Development in Nigeria**.

World Bank. 2000. **Nigeria Financial Sector Review.** Financial Sector Unit Economic Management and Social Policy Department Africa Region

APPENDIX 1: LIST OF STAKEHOLDERS CONSULTED

Public Sector	Donors	NGOs/CBOs	BMOs/OPS	Key For-Profit Organisation	Bank & Non-Bank Financial Institutions (cf. Appendix 3 below)
Commissioner, Min. of Climate Change & Forestry	WB-CRADP [World Bank – Cross River Commercial Agriculture Development Programme]	CR-NGOCE	CALCCIMA	Wilmar Ltd.	
Tourism Bureau	CUSO	The Mangrove Action Watch	NACCIMA	Dansa Foods Industries Ltd.	
Min. of Agriculture		Dansa [Dangote Pineapple Plantation] Community	CR-MAN		
CR-Forestry Commission		Wilmar Outgrower Community/Community Leaders	CR-NASSI		
CR MEDA		The Ekuri Initiative/Ekuri (old & new) Community leaders	Cross River Hospitality Practitioners Association		
CR -IPB		REDD+ Site: Endondon Community, CRS	Cross River Timber Market Association		
MIDC			NANTA		
CR State Planning Commission			CR-NASME		
CBN-SSEDC			CR-REDAN		
CRNP – Cross River National Park					
CR Dept. of Mineral Resources					
UNDP, Abuja					
Federal Ministry of Agriculture & Rural Development					

APPENDIX 2: ECONOMIC PLANT AND ANIMAL SPECIES OF CROSS RIVER STATE FORESTS

A2.1 CRS Economic Non-Timber Plant Species

Plant	Common Name	Vernacular	Use
Medicinal plants			
Drypetes flouribonda	Drypetes		Bark is used for the treatment of heart diseases
Enantia chlorenta			Bark is used for the treatment of malaria fever
Morinda lucida		Mbubuk ikon	Root and bark are also used for the treatment of malaria fever
Alstonic boonei		Ukpo	Bark is used for the treatment of sexually transmitted diseases
Cnestis ferrugina			The root is used as an aphrodisiac
Schomatorphytum magnificum			This is used in the production of anti-snake venom
Fagara species		ukek	The bark of this plant suppresses sickle cell anemia
Milicia excelsa	Iroko		Has anti-fungal action
Garcinia mannii	Chewing sick	okok	Has antibacterial property therefore prevents tooth decay
Carica papaya	Pawpaw		Used in the treatment of bile problems, swellings and malaria fever
Nauclea Latifolia			Leave is used to remedy stomach infections
Elaes guineensis	palm tree	Eyop	Oil from the fruit is used in the treatment of coughs while kernel oil is used in the preparation of antidote against poisons. Juvenile epilepsy, convulsions and skin diseases are treated with preparations from the palm tree
Bryophyllum pinnatum			The leaves are used to cure respiratory diseases such as asthma, whooping cough and bronchial problems
Harungana madagascariencis		Oton	Leaves are used to cure skin infections while latex is used to heal fresh wounds
Sida acuta			Used as laxative for pregnant women
Vegetables, Fruit, Beverages			
Gnetum africanum		Afang	Vegetable
Labianthera africanum			Vegetable
Hensia spp		Atama	Vegetable
Pipers guinenses	Hot leaf	Etinkeni	Spice/Vegetable
Gondroema spp		Utasi	Vegetable
Bombax spp and ceiba spp	silk cotton tree	Ukim	Vegetable
Pterocarpus santalinoides		Mkpa	Vegetable
Pycnanthus anglolenses		abakang	Edible fruits
Elaes guinenses	palm tree	Eyop	Edible fruits, oil and wine, broom
Raphia hookerii	Raffia palm	Ukot	Wine and building mats
Raphia vinifera	Raffle palm	Ukot	Wine, and building mats

Plant	Common Name	Vernacular	Use
Nypa palm			Sugar, building mats and ornaments
Cocus nucifera	Coco nut	Isip Mbakara	Beverage, fruit and building mat
Butyrospermum paradorum	shear butter		Nuts-produce oil
Coula edulis		Ekom	Edible fruits
Tomatoccus spp	wrapping leaf	Nkong	Wrapping leaves
Mitragyna spp	owen		Wrapping leaves

Source: Fon et al., (2014)

A2.2: Economic Timber Species

Plant	Common Name / Vernacular*	Plant	Common Name / Vernacular*
Indigenous Timber Species			
Baillonella toxisperma	mimusops	Terminalia ivorensis	Black Afara
Brachystegia spp	achi	Tripoohiton sclero xyon	obeche
Entandrophragma spp	Mahogany	Alstonia spp	Ukpo*
Khaya spp	Mahogany	Mitragyna spp	Abura
Lovoa trichiloides	Cedar	Oxystigma spp	Ntufiak*
Milicia excelsa	Iroko	Stauditia stipitata	Iyip okoyo*
Nauclea diderrichii	Opepe	Lophira spp	Eki/Ironwood
Piptadiniastrum afrianum	Ukong*	Chysophyllum spp	Udari*
Poga oleosa	Enoi*	Uapaca guineensis	Mkpenek*
Ptercarpus osun	cam wood)** / Ukpa*		
Species for Poles			
Harungana madagascarienses	Oton*	Rhizophora spp	Red mangrove
Xylopia spp	Atarabang*	Avecinia spp	White Mangrove
Nauclea spp	Opepe	Bambusa vulgaris	Indian bamboo
Plantation Species			
Tectona grandis	Teak	Cedrella spp	Mahogany
Gmelina arborea	Gmelina	Tripolochiton sleroxylon	Obeche
Lovoa trichilioides	cedar		

Source: Fon et al., (2014)

A2.3: CRS Economic Animal Species

Animal	Common Name	Animal	Common Name
Aquatic Animals			
Tilapia sillii	Tilapia	Ethmals fimbriate	Bonga fish
Chrysichthys spp	catfish	Periophthalmus spp	Mud skipper
Tympanotonus fuscatus	Periwinkle	Grypheae gasor	Oyster
Anadera spp	Clam	Penaeus notalis	Crayfish
Reptiles			
Order :Ophidia	Several species of snakes	Order: Crocodilia	Alligators, Crocodiles, Monitor lizards
Order Testudinata	Tortoise and Turtles		
Primates			
Artocebus spp	Pottos		
fam: cercopithecidae	Monkeys	Papio anubis	Baboons
Pan troglodytes	Chimpanzees	Papio leucophaeus	Drills
Gorrila gorilla	Gorillas		
Rodents			
Order:Rodentia	Several species of rats	Epixerus ebi Squirells	
Atherurus Africana	Porcupine		
Large mammals			
Trichochus senegelensis	Manatee	family: Bovidae	Antelope
Hyppoppotamus amphibius	Hippopotamus	Hylochoerus meinertshbani	Bush Pig
Loxodonta africana	Elephants	Syncerus caffer	Buffalo
Panthera leo	Lions	Panthera pardus	Leopard
Birds			
Sagittarius serpenarious	Secretary Bird	Platelea alba	African spoon bill
Bucorvus spp	Horn bill	Family Ardeida	Heroes and egrets
Family: pelecanidae	Pelicans	Family; cioniidae	Storks
Family: Agypiidae	Vultures	Family: Anas spora	Water foul
Family: Columbidae	Parrots	family phasianidae	Francolins, Quails and Guinea fowls

Source: Fon et al., (2014)

APPENDIX 3: MAP OF SAMPLE BANK & NON-BANK ACTORS IN CROSS RIVER STATE

S/No.	QUESTION/ NAME OF ESTABLISHMENT	ECO BANK	DIAMOND BANK	GUARANTY BANK	ACCESS BANK	INTERNATIONAL ENERGY INSURANCE (IEI)	INDUSTRIAL AND GENERAL INSURANCE (IGI)	ROYAL EXCHANGE	LEADWAY ASSURANCE	UNICAL MFB	EKONDO MICRO FINANCE BANK	BANK OF AGRICULTURE	BANK OF INDUSTRY
1	Business Type	Banking	Banking	Banking	Banking	Insurance	Insurance	Insurance	Insurance	Banking	Banking	Banking	Banking
2	Respondent Contact Details. NAME:	Mr. Igbe Peter/Ayuga Eguma	Aniebiet Robinson	Thomas Onorieyereraye	Chioma Onyema	Emem Dorgu	Nicholas Ekanem	Victor Bassey	Taiwo S. (DaSilva)	Thomas Ogbidi	Francis Ajibogun.	Ovat Dickson	Chidinma Ezenwa
	Designation	Relationship Managers	Account Officer	Branch Manager	RM	Admin.	Branch manager	Retail Manager	Branch Head	Head of Credit	Manager	Head of Credit	Customer Care
	Phone Number	08033018268	08034323802	08037705276, 08113933616	08143811592	07035334521	08023003458	08035909577	08129997098	08037701096	08033908770	08037956529	07039822716
	Email	pigbe@ecobank.com	arobinson@diamonbank.com	thomas.onorieyereraye@gtban.com	chioma.onyema@accessbank.com	esuamygal@yahoo.com	niekanem@iginigeria.com	vbassey@ymail,com	t-dasilva@leadway.com	tomyhills@yahoo.com	frankajibogun@gmail.com	dicksonovat@yahoo.com	chidinmaezenwa3@gmail.com
	Business Address	22 Murtala Mohammed High Way, Calabar.	7 Mary Slessor Way, Calabar	11 Calabar Road, Calabar.	10 Calabar Road, Calabar	38 MCC road, Calabar.	32 Nelson Mandela Street, Calabar.	103 Ndidem Usang Iso Road, Calabar.	141 Ndidem Usang Iso Road, Calabar.	UNICAL Main Campus	43 Murtala Mohammed High Way, Calabar.	Opposite Atakpa police station Watt Mkt	115 Ndidem Usang Iso Road.
3	What types of products and services do you currently offer?	Current accounts, savings accounts, overdrafts & loans, electronic/mobile banking	Savings account, current account, overdrafts & loans.	GT Salary Advance, GT Mortgage, CBN Agric Credit Guarantee Scheme, School fees advance, GT auto, Current Account, Max advance, Max Plus, Savings Account, general overdrafts & loans	Savings Account, Current Account, Auto loans, loans etc., agro credit, etc	General, 3rd party Insurance, comprehensive, marine.	General Insurance, Life Insurance, Savings Plan, Group Life Insurance, Key man Insurance, Agric Insurance Scheme	General Insurance. Life assurance product. Mortgage protection, Term assurance, agric credit scheme	Non-life & Life Insurance Products	Salary Account, Co-operative Societies, Current Account, Savings Account, Micro Credit (MSMEs), Overdraft, MSME agric credit/micro	Savings Account, Current Account, ESP (Ekondo Savings Plus) etc.	Loans and Savings Accounts. Saving mobilization and granting of credit for Agric & Micro enterprises.	Develop entrepreneurs that are in production, processing and manufacturing by way of Equipment financing directly or by way of lease, etc.

S/No.	QUESTION/ NAME OF ESTABLISHMENT	ECO BANK	DIAMOND BANK	GUARANTY BANK	ACCESS BANK	INTERNATIONAL ENERGY INSURANCE (IEI)	INDUSTRIAL AND GENERAL INSURANCE (IGI)	ROYAL EXCHANGE	LEADWAY ASSURANCE	UNICAL MFB	EKONDO MICRO FINANCE BANK	BANK OF AGRICULTURE	BANK OF INDUSTRY
										enterprises in agric and allied sectors.			
4	What business sectors do your customers predominantly belong to? [Including micro agri-businesses, agri-produce co-operatives, market women, etc in micro agri-produce or enterprise, etc].	Mostly SMEs engaged in trading and services; a few medium to large corporates engaged in mostly contracts; mostly agro-allied customers for the SMEs; civil servants.	Trades & services; wholesalers & retailers in consumables and other commodities – mostly SMEs; govt/other contractors.; Agri-businesses, enterprises	Civil servants; SMEs in the various trades and services; public sector; govt contractors; agri-businesses, etc	Trading & services/manufacturing/distribution, oil and gas/telecoms, Agric Credit Guaranty scheme – SME on-lending via CBN SME funds, oil palm /other economic crops farming through CBN anchor programme.	Private individuals and corporates [SMEs & large] engaged in trade and services.	Private individuals & corporates in different trades & services; agri-businesses [farming, local equipment fabrication, etc]	Private individuals, co-operatives and corporates in trades, services, agri-produce/enterprise	Commercial /Individuals in wholesale, retail trade; Micro-Agric and Allied Sectors.	Private individuals, MSMEAS and organized co-operatives mainly in agri-enterprise	Civil Servants and MSMEs in various trades, services and agric.	By official mandate 60% of customers are Agro-focused. But in reality more than 60% Agro-focused customers are on their books.	At least 50% SMEs engaged in agro businesses; others in manufacturing, production.
5	What are the types of loans or credit you offer to your customers i.e. overdrafts, etc? [including to the agri-business sector – micro, small, medium or large].	Agric over draft, agric credit guarantee scheme backed loans. Act as funding intermediaries between CBN/donor agencies and recipients/beneficiaries. (2). Employee credit (3). School finance facility (4) overdraft (5). Advance payment guarantees &	Term loan, agric financing, medi-loans (to take care of medical bills), advance payment guarantees, bank guarantees & indemnities, personal loans	Gt Salary Advance, School fee advance, agri-loans,etc;	Overdrafts & term loans; CBN Agric Scheme backed loans, advance payment guarantees and performance bonds	Not applicable.	Loans given to policy holders only for either private or commercial purposes in the various business sectors named above. A policy holder can get up to 80% of what is in their investment account	We give loans to policy holders only in the business sectors named above.	No loans	Micro-credit	Term loans, overdrafts etc in business sectors indicated.	Micro loans & Macro loans. Any loan not more than N250,000 is micro. Loans above N250,000 are macro and only granted to Agro-based customers.	Equipment Financing only.

S/No.	QUESTION/ NAME OF ESTABLISHMENT	ECO BANK	DIAMOND BANK	GUARANTY BANK	ACCESS BANK	INTERNATIONAL ENERGY INSURANCE (IEI)	INDUSTRIAL AND GENERAL INSURANCE (IGI)	ROYAL EXCHANGE	LEADWAY ASSURANCE	UNICAL MFB	EKONDO MICRO FINANCE BANK	BANK OF AGRICULTURE	BANK OF INDUSTRY
		performance bonds.											
6	What are the typical terms and conditions of such loans/credit i.e. tenor, interest rate, repayment terms [e.g. any moratorium, etc]? [including to the said agri-business sector at all indicated levels above].	Mostly short term loans (4 years maximum), interest rate is between 28% - 30% P.A.; moratorium usually given for agric loans depending on produce cycle	Collateral required including, guarantors, Tenor: 6-12 months, interest rate: 17%-30%, repayable on monthly basis.	Terms and conditions differ depending on the type of loan. Tenor also depends on the type of loan. The interest rate is between 15%-28% for a maximum of 4 years	Collateral required, the business should not be a new one/ start-up, must have proven track in the business engaged in; lend up to 4 years tenor maximum; interest rate is from 15%-26% per annum, moratorium period ranges from 6-12 months depending on business cycle.	Not applicable.	No further collateral required since the customer is already a policy holder - policy document serves as collateral. The tenor is based on the tenor of the policy. No interest charged.	There is no condition to get the loan since only policy holders can get loans. A policy holder can get up to 90% of their contribution. The tenor is dependent on the tenor of the policy.	Not applicable	3 guarantors required. Tenor is between 6-12 months, Interest rate is 28% P. A. Moratorium is granted on a case by case basis.	Collateral or guarantors required depending on the amount involved. Tenor is 6-18 months, interest rate is 3% per month. Moratorium is 3-6months.	Micro Loans - collateral not required. Tenor is determined by the cashflow of the project. Moratorium is also based on the project cycle. Interest rates are 12% for Agric loans and 20% for Non -agric loans. Macro loans - only given Agro focused customers. Collateral required. Interest rate is 14% PA.	Interest rate 9% PA, Tenor 5 years, Moratorium – 6 months - 1 year max in some cases. Collateral includes other Bank Guarantees / Guarantors / physical assets.
7	Do you currently run a CSR [Corporate Social Responsibility] programme?	Yes	Yes	Yes	Yes	Yes	Yes.	Yes.	yes	Yes.	Yes.	No.	Yes.
8	If so, what does it address? Who are the beneficiaries	Supply drugs, malaria testing kits to host communities – one major mission in this	Sponsorships of school sports; support the less privileged by settling	As directed from the Head Quarters.	Mostly for indigent women in micro-enterprisecapacity building	Sports & tourism [the Calabar Carnival]	Secondary school basketball games. Development of young	Not done at branch level. Also visit orphanages yearly	Care for children with disability -	Student Union Activities.	Contribute to the education sector by supporting schools		We provide matching funds with the State Government for SMEs to access

S/No.	QUESTION/ NAME OF ESTABLISHMENT	ECO BANK	DIAMOND BANK	GUARANTY BANK	ACCESS BANK	INTERNATIONAL ENERGY INSURANCE (IEI)	INDUSTRIAL AND GENERAL INSURANCE (IGI)	ROYAL EXCHANGE	LEADWAY ASSURANCE	UNICAL MFB	EKONDO MICRO FINANCE BANK	BANK OF AGRICULTURE	BANK OF INDUSTRY
	of this programme?	area per annum.	their verified medical bills.		e.g. adire [tie-dye] fabric production.		talents and capacity building for youth corpers for free in various skills.	during festive periods.	especially Autism.		debates/competitions		without charge from the bank.
9	Have you ever heard about the REDD [Reducing Emissions from De-forestation and Forest Degradation] programme in Cross River or elsewhere? Have you heard about carbon credits? If not, would you be interested in attending a forum to learn about it and the opportunities it offers your institution?	Not really/vague understanding but interested in learning more to see how to key in.	No but willing to attend a forum/for a to learn.	Yes but not in-depth. Will be interested to learn more.	Not quite, at branch level, but interested in learning more	No but willing to learn.	Yes and interested in more information about how to key in.	No but interested to learn.	No but interested to know about everything.	Yes at the State level but interested in attending any workshop.	No but interested.	No but interested in learning about it.	No but interested in learning about it.
10	Do you give loans to customers involved in business activities that use renewable and/or alternative sources of	No - the agric credit guarantee scheme was not successful for them.	Yes	Yes via the CBN Agric Credit Guarantee Scheme.	EIAs conducted on all loan facility applications. If the loan will be used for environmental -unfriendly projects then there is no disbursement.	No.	No	Not applicable	Not applicable	Yes. We give loans to honey producers. We also have term loans for Agric purposes that do not impact	No.	Yes - Agric loans give consideration to the environment	Yes - Agric equipment financing loans. Also give consideration to the environment.

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	energy that do not involve carbon emissions?				Loans also granted to agri-businesses that use alternative/renewable energy.					negatively on the environment depending on the type			
11	Have you heard of "green financing" – e.g. ensuring that customers applying for loans/credits in the agri-business sector include in their business plans a strategy to ensure that our forests are protected or not depleted? Or financing business ventures whose activities encourage environmental and forest protection? If so, are you currently providing products and services that support this? What are they? If not,	No but interested in learning about it. N/B: UN-REDD can do a comprehensive memo to the bank to include green financing in its lending scheme.	No but willing to learn.	No. Agric loans given by the bank currently is based on subsisting CBN guarantee policy. Interested in learning more.	Not in detail about entire range of potentials in this area but the bank's current EIA loan application vetting is a part of this. Interested in learning more.	No but interested.	No but interested.	No but interested.	No but interested	No but interested.	No but interested.	No but interested.	No but interested.

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	would you be interested in learning more about this?												
12	Would you be interested in finding out how you can set up a CER [Corporate Environmental Responsibility] programme?	Yes	Yes with approval from the management.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes	Yes.	Yes	Yes	Yes
13	Do you think that the private sector, including your institution, can be a key participant in REDD/REDD+?	Yes	Yes	Yes.	Yes.	Yes.	Yes.	Yes.	Yes	Yes.	Yes	Yes	Yes
14	If so, what kind of enabling environment do you think should be provided in order to incentivise private sector participation in protecting the environment and reducing	More awareness should be created among private business operators. Let them see the importance of protecting the environment. Banks can issue a policy statement enabling them to incorporate	Sensitization is key here -it is the most important tool. The bank can issue a policy statement in that regard.	More engagement/interaction between the government and private sector; clear policy direction should be articulated and widely communicated.	Need to create more awareness especially among the small businesses. There should be a law that should ensure that small businesses operate in a manner that protects the environment with incentives	Enforceable laws, dialogue on a continuing basis; fiscal incentives	All private sector players can be involved in carrying out enlightenment campaign giving the private sector reasons why they should be involved in CER. The government can give guides and	Creating more awareness among the members of the private sector. A deliberate policy on CER can be issued.	An environment that will promote good social health and engender sustainable business potentials through widespread education and incentives e.g. tax	Encourage planting of trees and flowers to act as fence instead of walls. Banks can contribute to a fund that will be used to protect our environment.	Create awareness on tree planting. The government can give us tax reduction with the option of investing in the environment.	Give the private sector more knowledge on what REDD and green financing is all about, then we can contribute meaningfully.	Create awareness through workshops by government and UN-REDD+

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	deforestation ?	CER in their activities			to encourage them to do so.		incentives on CER.		rebates for MSMEs, etc.				