SUSTAINABLE FUELWOOD MANAGEMENT PROJECT IN NIGERIA

FINAL DRAFT MIDTERM REVIEW (MTR) REPORT

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Abbreviations and Acronyms

BOP	Bottom of The Pyramid
CLCs	Community Learning Centres
COE	Centre of Excellence
COMOs	Chief Orientation and Mobilization Officers
CRS	Cross River State
ECN	Energy Commission of Nigeria
EE	Energy Efficient
EEEP	ECOWAS Energy Efficiency Policy
EREP	ECOWAS Renewable Energy Policy
FCCPC	Federal Competition and Consumer Protection Commission
FMCs	Forest Management Committees
GACC	Global Alliance for Clean Cookstoves
GEF	Global Environment Facility
GGW	Great Green Wall
GON	Government of Nigeria
IP	Implementing Partners
LGA	Local Government Area
LGC	Local Government Councils
MFBs	Microfinance Banks
MFIs	Microfinance Institutions
MFP	Multifunctional Platform
MTR	Mid-term Review
NACC	Nigerian Alliance for Clean Cookstoves
NAPA	National Adaptation Programme of Action
NBMA	National Biosafety Management Agency
NESREA	National Environmental Standards & Regulations Enforcement Agency
NIM	National Implementation Modality
NOA	National Orientation Agency
NSC	National Steering Committee
PIF	Project Identification Form
PIR	Project Implementation Report
PM	Project Manager
PMU	Project Management Unit
POWA	Police Officers Wives Association
PPG	Project Preparation Grant
PSC	Project Steering Committee
R&D	Research & Development
RE	Renewable Energy
REEIS	Project's Relevance, Effectiveness, Efficiency, Impact and Sustainability
SBAA	Standard Basic Assistance Agreement
SFM	Sustainable Fuelwood Management
SFMS	Sustainable Fuelwood Management System
SLMCs	Sustainable Land Management Committees
SLM	Sustainable Land Management
SON	Standards Organisation of Nigeria
SRMS	Project's Strategy, Results, Management and Sustainability
TVET	Technical and Vocational Education and Training
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
WACCA	West African Clean Cooking Alliance

Acknowledgments

An independent MTR team comprising of Mr. Stephen Ndiboi (International Consultant) and Arc. Makinde Dare (National Consultant) prepared this report. The independent MTR team herewith would like to express its gratitude and appreciation to the following key people who enabled the SFM Project Midterm Review to be successful through their administration, insight and guidance: Mr. Muyiwa Odele (UNDP Nigeria Country Office Focal Point Person), Mr. David Kusimo (GEF Nigeria Focal Point Person at the Federal Ministry of Environment), Prof. Eli Jidere Bala (Director General, Energy Commission of Nigeria), Eng. Okon Ekpenyong (SFM Project Coordinator /Project Manager) and Ms. Grace Ohiowele (SFM Project Administrative Officer). The MTR team would also like to thank all the three states (Cross River, Delta and Kaduna) SFM Project's focal point persons, these are: Ms. Edu Effiom, Mr. Chukwuma Nwose and Mr. Yahya Sale Ibrahim respectively. The states' focal point persons offered important insights into the project progress towards results. Furthermore, the MTR team would like to most sincerely thanks the great contribution and guidance on the performance of the project including areas of improvement that the following government agencies and federal ministries representatives offered; Ms. Oneli Stella (Officer, National Orientation Agency), Mr. Anselim Ogwaku (Deputy Director, Federal Ministry of Finance, Budget and Planning), Mr. Prince Ene Okechukwu (Chairma, Nigerian Alliance for Clean Cookstoves), Eng. Shamm T. Kolo and Kelechi Okoh (Director and Deputy Director respectively at the Federal Competition and Consumer Protection Commission).

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High appreciation is also expressed to all those from the Nigerian Government at the national, regional and local levels that in one way or another devoted their time for the interviews and thus contributed to this midterm evaluation.

Declaimer

This report is the work of an independent midterm review team of consultants and does not necessarily represent the views, or policy, or intentions of the United Nations Development Programme (UNDP), Global Environment Facility (GEF) or the Federal Government of Nigeria.

EXECUTIVE SUMMARY

A. Project Information Table

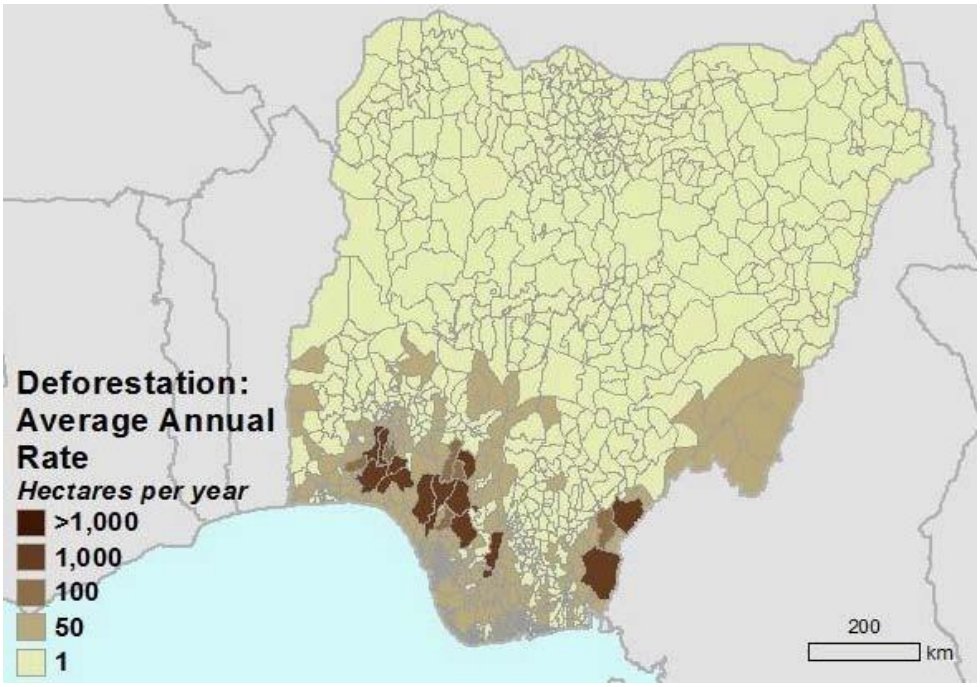
Project Information	
UNDP PIMS ID	5366
GEF ID	5745
Title	Sustainable Fuelwood Management Project in Nigeria
Country	Nigeria
UNDP-GEF Technical Team	Energy, Infrastructure, Transport and Technology
Project Implementing Partner	Energy Commission of Nigeria
Joint Agencies	*(not set or not applicable)*
Project Type	Full Size

B. Project Description

Nigerian fuelwood sector problem is characterised by the following problems:

a) Nigeria has the third highest rate of deforestation in the world: 3.7% or 410,000 hectares of forests annually; with some areas in the South losing over 1,000 hectares/year (See Figure 1). The country has lost almost 50% of its forest resources between 1990 and 2010 when its forest area shrank from 17 million hectares down to 9 million -hectares. With continuation of current trends unaltered it is a matter of just a few decades when all Nigeria's forests might be gone.

Figure 1: Map of Deforestation Rates in Various Regions in Nigeria



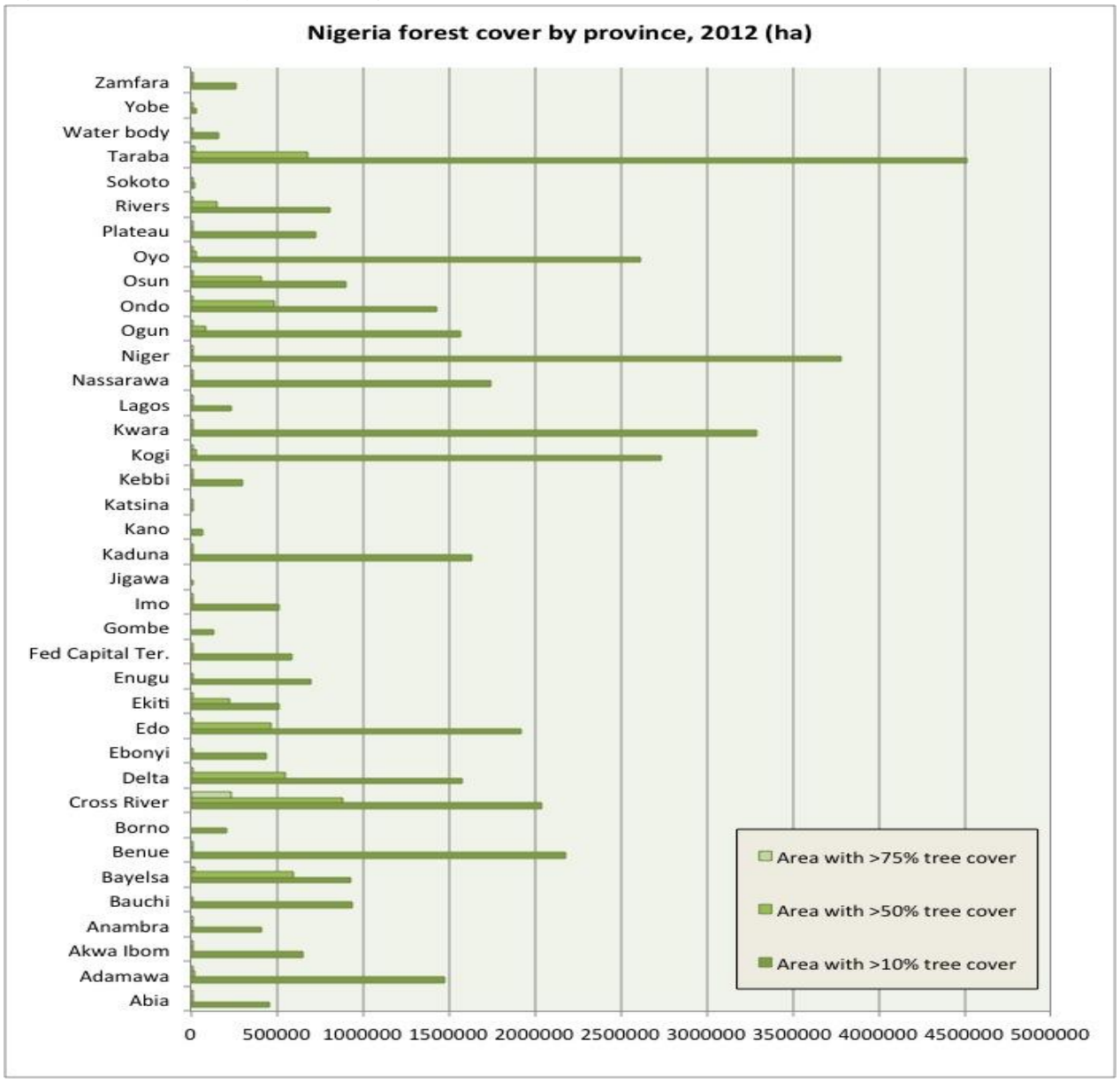
Source: Conservation International, available on-line at
http://www.conservation.org/how/science/Documents/DeforestationGuide_CommoditySourcing_Nigeria.pdf

Figure 2: Map of States in Nigeria

From **figure 2** above (states in Nigeria), **figure 3** below **-** forest cover by state in Nigeria and compared with **figure 1** on deforestation rate in Nigeria, it is apparent that Kaduna State, though having insignificant deforestation rate (about 1 hectare per annum), the state is by its nature of less forest cover and in high demand of fuelwood.

On the other hand, Delta State has a small section that constitute deforestation at the rate of 1000 hectares per annum. When it comes to Cross River State, the larger part of the state is having a deforestation rate of 1000 hectares per annum. The SFM Project, hence do focus on two distinctive areas, one with high deforestation / supply rate and the other with high demand and less forest cover. In between, the SFM Project aims to address the aspects of improved technology for renewable energy (RE) and Energy Efficiency (EE) as well as financing model of de-risking the renewable fuelwood sector in Nigeria.

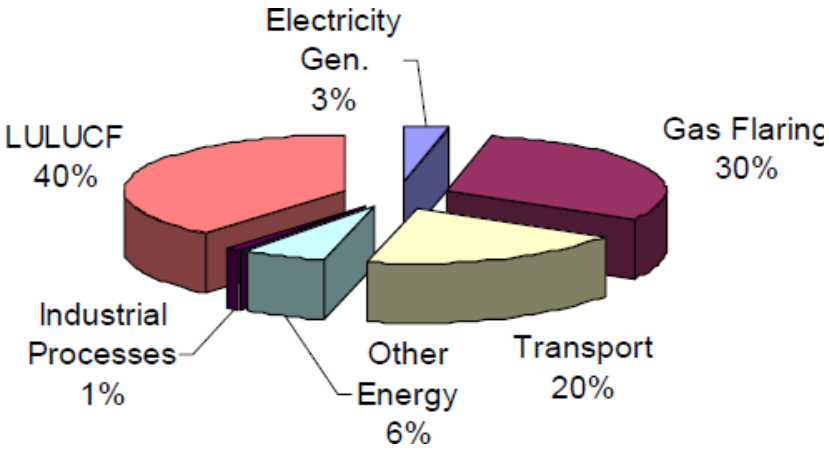
Figure 3: Forest cover by state in Nigeria



Most of Nigeria's rainforests are located in the Niger River Delta. The country's dense forests are concentrated in the states of Bayelsa, Cross River, Edo, Ekiti, Ondo, Osun, Rivers and Taraba. Together those eight states account for nearly 95 percent of Nigeria's land area that has more than 50 percent tree cover.

b) Deforestation is the largest source of GHG emissions in Nigeria: it is responsible for 40% of national CO^2 emissions (See **Figure 4).** According to National Communication to UNFCCC, under baseline scenario emissions from deforestation will increase from 9.5 MtC/year in 1990 up to 26.5 MtC/year in 2030 (based on a conservative deforestation rate of only 2.6%).

Figure 4: Sources of CO^2 emissions in Nigeria



Source: Nigeria's 1st National Communication to UNFCCC

c) Unsustainable and constantly growing consumption of fuelwood by Nigerian households is one of the main causes of deforestation. More than half of the 9.6 million hectares of rain forest belt in the south of Nigeria has been used to meet the demand for fuel-wood in rural and urban areas. Fuel-wood use has grown from 50 mln m^3/year in 1990 up to 70 mln m^3/year and accounts for significantly higher share of forest product use than, for example, commercial logging; the latter makes only 11 mln^3/year in 2010 and didn't register any major changes in the last decades. This increase is largely due to population growth, and also due to the absence of affordable alternatives, especially for the poorest consumers. Furthermore, due to rising prices for fossils fuels, a massive shift from "modern" fuels like kerosene and LPG back to fuel wood has been taking place ("reverse substitution with wood fuel", according to the FAO).

d) First National Communication estimates that about 4.5 mln hectares of fuelwood plantation have to be established annually in order to tackle primary cause of deforestation and help address looming shortfall of fuel wood resources. However, this analysis does not take into account significant, yet unrealized, potential to effectively reduce demand for fuel wood via more efficient cooking solutions, as well as through the use of alternative low-carbon energy sources, such as LPG, biogas or solar energy.

The full-sized project (FSP) titled "Sustainable Fuelwood Management in Nigeria which is being implemented through the Energy Commission of Nigeria (ECN), started on February 7, 2017 and is in its third year of implementation.

The Sustainable Fuelwood Management (SFM) project in Nigeria was designed to address the problem of deforestation in Nigeria. Given that, over half of Nigeria's estimated 170 million inhabitants live below the poverty line, with over 70% of the population still relying on biomass for fuelwood. Rapid deforestation is a major concern with over half of the country's primary forests cut down in the last 10 years, exacerbated by rapid population growth of 2.5%. The unsustainable production and utilization of biomass resources represents one of the key drivers of deforestation and land degradation in Nigeria. In response to this challenge, the Government of Nigeria has secured funding from the Global Environment Facility (GEF) for a sustainable fuelwood management project. The project, which began actual implementation in May 2017, has a GEF grant of $4,410,000 and co-financing of $16,400,000.

The objective of the project is to have a **sustainable fuelwood management in Nigeria that secures multiple environmental and socio-economic benefits, including reduced GHG emission from wood fuel consumption, enhanced carbon storage and sequestration, as well as improved rural livelihoods and opportunities for local development**.

The **Project Objective** will be achieved through i) *supply side management* (the production and procurement of certified fuelwood from sustainably sourced feedstock from; a) woodlands outside the protected forests in Cross River and Delta State in the South and b) from farmer-managed woodlots in Kaduna State in the North and ii) *demand side management* through the promotion of improved stoves/kilns in the domestic sub-sector as an inclusive business to reduce fuelwood demand, improve health and reduce greenhouse gas emissions.

To achieve this, the project has been divided into four main components:

- Component 1: Sustainable Fuelwood Supply
- Component 2: Fuelwood Demand Management
- Component 3: Domestic Industry for Clean Cook Stoves and Other Clean Energy Alternatives
- Component 4: Financial Models for Sustainable Fuelwood Management

The following outcomes are expected from the SFM project:

1. ***Expected outcome of component 1:*** **Models for sustainable fuelwood production demonstrated in:**

    a) At least 10 communities in Cross River and Delta State leading to:
        - 50,000 ha of forestlands under improved multifunctional forest management;
        - Forest Management Committees (FMCs) created/strengthened in SFM

    b) At least 10 communities in Kaduna State leading to:
        - 3,003 ha of degraded land restored with Sustainable Land Management measures like woodlots;
        - SLM Management Committee created/strengthened in SLM

2. Expected outcome of component 2:

a) Improved awareness and acceptance of alternative (renewable and more efficient) energy technologies for domestic, institutional and industrial sub-sectors in Cross River, Delta and Kaduna States.

b) Increased penetration of improved/alternative energy technologies for domestic needs in targeted communities by at least 20% (BAU: 0.1%);

c) Avoided emissions of 40,000 t CO_2 eq/year from combustion of un-sustainable biomass in inefficient cook stoves/kilns (replaced by more efficient or other alternatives)

3. Expected outcome of component 3:

a) Improved efficiency, quality and affordability of domestically manufactured cooking/heating appliances for domestic, institutional and industrial sub-sectors.

b) Strengthened domestic supply chain for EE/RE cooking and heating appliances

4. ***Expected outcome of component 4:***

a) Consumer financing model for EE cook stove/kiln successfully operates.

b) Sales of efficient cook stoves/kilns increased by at least 20% in Cross River, Delta and Kaduna State.

c) Investment in sustainable forest management in Cross River and Delta State increased

The SFM project duration is 5 years starting from Feb 7, 2017 and ending Feb 6 2022 with an overall GEF budget of US $ 4,410,000 and co-financed by UNDP US$300,000, National Government (in –kind) 1,900,000, National Government (Grant) US$2,200,000, MFBs/MFIs US$3,000,000, UNREDD+ US$ 4,000,000, SME US$ 2,000,000, ICEED US$2,000,000, DARE US$1,000,000 total budget US$ 20,810,000.

The project implementation has been following the UNDP's national implementation modality (NIM), according to the Standard Basic Assistance Agreement (SBAA) between UNDP and the Nigerian Government and the UNDP Country Programme Framework.

The Implementing Partner for this project is the Energy Commission of Nigeria with UNDP Country office support. The Implementing Partner is responsible and accountable for managing the project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of resources.

C. Project Progress Summary

The MTR focused on project period May 2017 to October 2019 and sampled various stakeholders, beneficiaries and project sites in four states (Abuja FCT, Cross River, Delta and Kaduna) which were directly supported by the SFM project.

The review utilised data and information from both primary and secondary sources. Primary data was collected directly from key stakeholders through interviews, questionnaires, checklists, focus group discussions, and direct observation. Secondary data was obtained through the review of related literature.

In conducting the evaluation, purposive and random sampling approaches were adopted in the selection of various stakeholders, beneficiaries and project sites within the four states that the MTR team visited. The sampling approach considered core factors including spatial distribution of the interventions, the extent over which specific states have been implemented project interventions, whether the interventions were in rural or urban and the UNDP's national implementation modality (NIM) and the Standard Basic Assistance Agreement (SBAA) between

UNDP and the Government of Nigeria (GON) and the Country Programme. Based on the application of the above-mentioned methodology and the MTR team assessment, the project has progressed well towards full realization of the end of project outcomes.

Many of the Sustainable Fuelwood Management (SFM) Project in Nigeria expected outputs, outcomes and targets are attained or in process of being realised at the time of the mid-term review. The MTR is well timed and is within the intermediate period of the expected 5 years' term of the project.

Although many midterm outputs and associated targets have been efficiently and effectively achieved to date, a few number of expected outputs and targets are outstanding and are in a process of being achieved or planned for the next couple of months (example of these include establishment of at least 25,000 hectares of multifunction forests in the States of Cross River and Delta, establishment of sustainable land management (SLM) woodlots of at least 1500 hectares in Kaduna State and at least 15% increase in the penetration of renewable energy and energy efficient cooking and heating technologies in the three states (Cross River, Delta and Kaduna). Progress towards results expected under Component 1 seems to has lagged behind largely due to lack of community land access in the required size for the establishment of new forests and woodlots. Component 2, on the demand side, has progressed slowly largely due to cost of production and distribution of clean cook stoves.

Component 3 on clean cookstove technological improvement has progressed well, though more need to be done in terms of improving the quality and affordability of domestically manufactured cooking/heating appliances for domestic, institutional and industrial sub-sectors. Furthermore, in order to realise the targets under component 3, the remaining barriers to strengthening of domestic supply chain for energy efficiency and renewable energy cooking and heating appliances should be removed /addressed.

In regard to component 4, the financial support for the clean cookstoves ecosystems has picked on very well and the MFIs and MFBs are well geared towards supporting the various actors in sustainable wood fuel and other energy efficient and renewable energy technologies for heating and cooking, including the entire sustainable forest management supply chain. In the medium term, the financing aspects looks to be working, however, once the demand of the clean cookstoves reaches a tipping point in the three states / country, more financial resources will be required to support the market growth and clean cookstoves supply chain growth and development.

Going forward, there is a critical need to develop and effectively implement Project's Grand Plan towards significantly increasing the supply of sustainable forest wood fuels by way of making sure that the three states achieve the earlier set total target of 53,003 hectares of combine forestlands and woodlots cover. This would be achieved by mobilising federal, state and local government agencies, other stakeholders and beneficiaries and development partner organizations in securing funds and crafting modalities of realising the ambitious targets of increasing forestlands and woodlots cover.

Indeed, there is a strong 'business case' for a second phase of the SFM Project in order to allow consolidation of results and attainment of the outstanding outcomes and targets at the end of the term of the Project. As the Project go towards the terminal stage, implementation should involve a strong message to all stakeholders and beneficiaries that the SFM Project is not only a means for increasing availability of cooking technologies and alternatives fuels but also an intervention that should seek whole sustainable fuelwood management system (SFMS) transformation through measurable results and effects. Having considered the current Project performance status against set targets and related indicators, the MTR Consultant do rate the Project Strategy and Progress Towards Results as well as Implementation, Adaptive Management and Sustainability as summarised in Table 1 and 2 respectively.

Table 1: Project Strategy and Progress towards Results Ratings and Achievement Assessment Summary

Indicator Assessment Key

Green= Achieved	Yellow= On target to be achieved	Red= Not on target to be achieved

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Objective: Sustainable fuelwood management in Nigeria secures multiple environmental and socio-economic benefits, including reduced GHG emission from wood fuel consumption, enhanced carbon storage and sequestration, as well as improved rural livelihoods and opportunities for local development	Level / % of increased environmental services or values	Federal and State Governments Development Plans in 2016	not set or not applicable	Significance increase of the contribution of the SFM Project into environmental services and values	Even if there is no yet an assessment of the % of the increase into the SFM Project into the state or federal governments' environmental services increase, there are clear indication that, if all activities of the SFM Project are implemented, they will certainly result to significant environmental services increase / growth.	Satisfactory (S)	The measures so far undertaken to increase forestlands and woodlots cover, train and create capacity for various stakeholders in sustainable forest management, and increased uptake of renewable energy and energy efficient technologies do crystalize various environmental benefits at different levels in the following areas / aspects: -increased biodiversity -enhanced clean air and water in the focus states -Enhanced climate regulation for example reduced carbon emission from cooking and heating and potential carbon sequestration in the next 3 – years of the SFM Project. -Increased conservation of forest resources -Improved protection of endemic, rare and threatened species in the forest reserves. -Improved soil and landscape protection

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Objective: Sustainable fuelwood management in Nigeria secures multiple environmental and socio-economic benefits, including reduced GHG emission from wood fuel consumption, enhanced carbon storage and sequestration, as well as improved rural livelihoods and opportunities for local development	Level / % of increased economic services or values	Federal and State Governments Development Plans in 2016	not set or not applicable	Significance increase of the contribution of the SFM Project into economic services and values	Even if there is no yet an assessment of the % of the increase into the SFM Project into the state or federal governments' economic services increase, there are clear indication that, if all activities of the SFM Project are implemented, they will definitely result to significant economic services increase / growth.	Satisfactory (S)	There are various immediate, medium- and long-term economic benefits that are being or shall be realized in the lifecycle of the SFM Project. These benefits include: -Establishment of ecosystems where bees can inhabit to enable sustainable crop pollination and where feasible placement of beehives for honey collection. -provision of various renewable and efficient bio-energy resources for industrial, institutional and household cooking and heating needs. -Increased capacity to provisioning of adequate industrial and domestic clean water. -Potential increase in eco-tourism activities in states like CRS and Delta, among others -Increased areas for sustainable grazing based on proven systems like where government allow community to graze in a particular reserve planted with trees but after sometime, they leave the area to allow tropical secondary forests developed where the hitherto grazing have been abandoned. -Increased availability of economically important plants, seedling and fungi in the forestlands and woodlots. -Increased supply of wood products for economic gains. In actual sense, the interventions of the SFM Project will increase the share (% contribution) of the forest sector to gross domestic product (GDP) of Nigeria.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Objective: Sustainable fuelwood management in Nigeria secures multiple environmental and socio-economic benefits, including reduced GHG emission from wood fuel consumption, enhanced carbon storage and sequestration, as well as improved rural livelihoods and opportunities for local development	Level / % of increased socio-cultural services or values	Federal and State Governments Development Plans in 2016	not set or not applicable	Significance increase of the contribution of the SFM Project into socio-cultural services and values	Even if there is no yet an assessment of the % of the increase into the SFM Project into the state or federal governments' socio-cultural services increase, there are clear indication that, if all activities of the SFM Project are implemented, they will definitely result to significant socio-cultural services increase / growth.	Satisfactory (S)	Socio-cultural values are the central themes of Sustainable Forest Management (SFM) and in this regard, SFM Project has been designed to provide the following socio-cultural benefits: -Protect and promote the historic environment and cultural heritage, that is for example; management of historic environment sensitively, value the cultural history and meaning of forests, woodlands, trees and the historic environment, also recognizing the tourism potential of the historic environment, encouraging the development of living heritage and the arts in woodlands and encouragement in the use of Nigerian traditional construction techniques. -Other benefits include; educational, medicinal / health, recreational, spiritual and cultural wellbeing and creation of sustainable employment. Essentially, SFM Project will enable creation of functional communities, where people's perceptions and use of the Forests are similar or compatible and hence, forest managers and researchers can use such functional communities to develop better forest management plans and strategies.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 1: Sustainable Fuelwood Supply Management.	Indicator 1: Hectarage of forest protected and tons of CO2 sequestered by EOP.	REDD+ programme being implemented	not set or not applicable)	- 50,000 ha forest protected under REDD+ programme by EOP - 40,000 tCO2e sequestered	About 600 hectares of forest cover established in Cross River and Delta States	Moderately unsatisfactory (MU)	The targets adopted by SFM Project were based by the REDD+ baseline assessment for Cross River State. In the absence of enough community land to establish the forests, the set targets will be hard to achieve. There are however great efforts towards unlocking the availability of States' forest reserve land for the establishment of large sizes of forests and also to gain acceptance by community and private land owners to allocate land for the establishment of woodlots in Kaduna State, as well as other two states. Efforts include: Several consultative meetings have taken place at the State and community levels to sensitize and create awareness among fuelwood value chain actors. "Flagship" Annual High-Level Political Forum (HLPF)/Summit held in Cross River, Delta and Kaduna respectively in 2017, 2018 and 2019 to secure the buy-in of policy and decision makers in the three States. At the MTR, there was no established levels of carbon dioxide already sequestered

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 1: Sustainable Fuelwood Supply Management.	Hectarage of woodlot established, tons of fuelwood supplied and tCO2 avoided by EOP	No formal woodlot system established in Kaduna State	not set or not applicable	- By EOP, 3,003 ha woodlot farms established - 176,436 tons of renewable fuelwood supplied by EOP and 705,744 tons fuelwood supplied over lifetime - 168,468 tCO2e avoided over lifetime	About 300 hectares of woodlots established in Kaduna Estate points	Moderately Satisfactory (MS)	Even if the potential midterm target of about achieving at least half of end of term hectarage of woodlots wasn't achieved, there are strong foundations laid out in terms of promoting acceptance and actual establishment of the woodlots. Some of the key initiatives undertaken include: -Baseline studies were carried out on the Assessment of Fuelwood Availability and Consumption Rate in Selected Rural Communities in Cross River, Delta and Kaduna States respectively. -In 2018 and 2019, gender balanced technical and business trainings on SFM best practices were carried out in the 3 states. About 270 men and women were trained each state 90 people. The Kaduna, Delta and Cross River State's Governments have committed some forest reserves for woodlot establishment. So far, about 3,500 hectares, 2,000 hectares and 1,000 hectares secured in Kaduna, Delta and Cross River States respectively, hence it is possible that the target of establishing about 3003 hectares of woodlots would be achieved before end of the SFM Project. Lay-out and line-up for at least 20 hectares in each State is completed. A baseline study report on the assessment of the technical and physical availability and utilization of deadwood and the elasticity of the supply in the 3 States has been prepared.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 1: Sustainable Fuelwood Supply Management.	Hectarage of woodlot established, tons of fuelwood supplied and tCO2 avoided by EOP	No formal woodlot system established in Kaduna State	not set or not applicable	- By EOP, 3,003 ha woodlot farms established - 176,436 tons of renewable fuelwood supplied by EOP and 705,744 tons fuelwood supplied over lifetime - 168,468 tCO2e avoided over lifetime	About 300 hectares of woodlots established in Kaduna Estate points	Moderately Satisfactory (MS)	A GIS map has been prepared for about 5,000 hectares of the secured lands in the 3 States. 5 tree nurseries were established in 2018 and 500,000 seedlings transplanted in 2019 in Cross River, Delta and Kaduna States. Several tree nurseries were establishment within the months September and October, 2019 – this period is the beginning of dry season in Nigeria). Resulting tree seedlings will be transplanted into woodlots in the rainy season of year 2020. Even if the at the mid-term it wasn't able to establish how much carbon emission has been avoided, it is apparent that woodlot development will reduce deforestation and hence combined with focus on technological cost effectiveness and technological efficiency will significantly reduce carbon emission to environment and people.
	Volume of tCO2 saved through adoption of renewable energy and energy efficient cooking and heating technology by EOP	No formal or fragmented stove supply chain.	not set or not applicable	- 595,165 tCO2e saved by EOP	To be determined	Satisfactory (S)	Clean cookstoves and fuels are being distributed. There are strong indicators that the clean cookstoves and fuels are gaining acceptance and consumers are buying the energy efficiency technology hence the target on reduction on carbon emission will be realized as projected. SFM Project revolving fund / Established Credit Facility for Clean Cookstoves for SMES has enabled enhanced uptake of the technology.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 1: Sustainable Fuelwood Supply Management.	No. of partners involved in the project towards reaching the project goal by EOP	- REDD+ programme being implemented	not set or not applicable	not set or not applicable)	Over 20 Partners have been involved, for example: -Cross River State Forestry Commission (CRSFC); - Federal Department of Forestry, Abuja - Key members of the Nigerian Alliance for Clean Cookstoves (NACC) - Various other agencies represented in the Project Steering Committee (PSC); - Association of Non-Bank Microfinance Institutions/Banks; - NGOs/CBOs among others	Satisfactory (S)	Indeed, over 30 partners have been involved, including civil society organizations, public agencies, indigenous peoples, the private sector, and microfinance institutions. More institutions, development partners, stakeholders and beneficiaries need to be brought on board in order to provide an enabling environment to identifying innovative ways of realizing hard targets of the project like attainment of 53000 hectares of woodlots and forestland combined. Increased partners will also bring on board various sources of funds for the SFM Project.
	Number of viable multifunctional platforms (MFPs) established in Cross River, Delta and Kaduna State by EOP	- No Multifunctional platforms exist	(not set or not applicable)	- By the end of year 5, 3 multifunctional platforms established, 1 in each of the following states: Cross River, Delta and Kaduna State	- One MFP established in the following states: Cross River, Delta and Kaduna State - Forest Management Committees (FMCs) established	Satisfactory (S)	One SFM Multi-Functional /Demonstration Center established in each State (Cross River, Delta and Kaduna). So, a total of three (3) Multi-functional Platforms/SFM Demo Centres have been built / established. However, more efforts are required in terms of equipping and operationalization of the MFPs. Ideally, the Multi-Functional Platforms are supposed to offer the following services: *- Energy efficient wood/charcoal manufacturing factory* *- carbonization (efficient charcoal making kilns) - engineering designs in progress* *- Cookstoves showroom* Over 10 Forest Management Committees (FMCs) established and are operational

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 2: Improved Management of Demand for Fuelwood and other Alternative Fuels	Level of improved awareness and acceptance of alternative (renewable and more efficient) energy technologies for domestic, institutional and industrial sub-sectors in Cross River, Delta and Kaduna States.	not set or not applicable	not set or not applicable)	Awareness increased by at least 20%	About 30 % awareness achieved	Satisfactory (S)	In August 2019, an awareness and training roadshow that sold 1500 stoves, before show reconnaissance visit before rolling out the road show. Various stakeholders and beneficiaries said the road shows increased clean cookstoves and associated technology awareness. There is however, a need for more awareness and training to existing and potential stakeholders and beneficiaries. Innovative awareness approaches like use of social media (Twitter, Facebook, Instagram, WhatsApp) as well as print and electronic media should be utilized.
	Level or % increase in penetration of improved/ alternative energy technologies for domestic needs in targeted communities.	not set or not applicable	not set or not applicable)	Level of penetration increased by at least 20% (BAU: 0.1%)	About 15 % increase in penetration of improved/ alternative energy technologies for domestic needs, institutional and industrial users are less than 10%.	Satisfactory (S)	In August 2019, an awareness and training roadshow that sold 1500 stoves, before show reconnaissance visit before rolling out the road show. Various stakeholders and beneficiaries said the road shows increased clean cookstoves and associated technology awareness. There is a need to create awareness to the youth for them to become future manufacturers of cook stoves among other clean cooking technologies. Various empowerment and training have been undertaken for end users, more especially women groups in the three focus states.
	Tons of carbon equivalent avoided per year from combustion of un-sustainable biomass in inefficient cook stoves/kilns	- REDD+ programme being implemented	not set or not applicable)	Avoided emissions of 40,000 t CO2 eq/year	Not determined	Satisfactory (S)	Even if the total carbon emissions reduction hasn't been determined, there are indication that the increased uptake of cleaning cooking stoves coupled with upscaled awareness campaign will significantly enable the reduction of carbon emissions per year in all the three target states.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 2: Improved Management of Demand for Fuelwood and other Alternative Fuels	Report on Market Segmentation in Nigeria developed	Preliminary Global Alliance for Clean Cookstoves (GACC) market assessment report in 2012.	(not set or not applicable)	By year 3, 1 detailed report on Market Segmentation in Nigeria developed	Draft detailed market segmentation report in Nigeria developed National Stakeholder's Validation Workshop held in Lagos on 25th June 2019 to review the report. Currently, it is going through peer review and editorial review before final production and dissemination	Highly Satisfactory (HS)	Draft detailed market segmentation report in Nigeria developed and almost finalized as we enter the third year of SFM Project implementation, this commendable.
	Number of women sensitized and trained by EOP	No formal training	(not set or not applicable)	300 women trained and certified as social entrepreneurs by EOP (100 in each state)	60 women per State have been trained during gender sensitive technical and business trainings on SFM best practices conducted in Cross River, Delta and Kaduna States respectively 10 women and men per State were trained during gender sensitive trainings on clean cookstoves production and enterprise in July 2019 A total of 210 men and women trained and certified as social entrepreneurs (70 in each State)	Highly Satisfactory (HS)	It was evident from the various women groups and other stakeholders that were interviewed by the MTR team that varied training on SFM practices, technologies and business were carried out since the inception of the SFM Project. Many of the trained people, and more specially women have become trainers of trainers (ToT) and impactful mentors in the whole clean cookstoves and alternative fuels supply chain in the three focus states in Nigeria.

Measure	Description of Indicator	**Baseline Level**	**Midterm target level**	**End of project target level**	**Midterm Level & Assessment**	**Achievement Rating**	**Justification for Rating**
Outcome 2: Improved Management of Demand for Fuelwood and other Alternative Fuels	Number of domestic cookstoves produced and distributed for BOP by EOP tCO2e saved by EOP and lifetime	No formal stove supply chain	(not set or not applicable)	20,000 stoves produced and distributed for BOP by EOP 595,165 tCO2e saved by EOP Avoided emissions of 40,000 t CO2 eq/year from combustion of un-sustainable biomass in inefficient cook stoves/kilns	5 domestic manufacturing industries for the production of the improved charcoal/wood cookstoves in Nigeria were identified and empowered to produce the stoves used in rural communities where SFM best practices would be promoted. The factories are: • Nenu Engineering Limited, Gwazunu Road, Suleja, Niger State • Roshan Global Services (Manufacturers of Happy Cookstoves) • Evirolife (Ekwuk stove) - Ekwuk Stove. Alesi Community, Ikom, LGA, CRS • Greenland FatiGold Services Nigeria Limited, New Bauchi Road, Saminaka community, Kaduna State • Methano-Green Clean Energy Nigeria Limited, Ushafa, Bwari LGA, Abuja In 2018, 5,000 stoves were produced and distributed In 2019, another 5,000 cookstoves have been produced 90 SFM branded sales booths/kiosks distributed and most installed	Highly Satisfactory (HS)	Initially, many of the micro-finance institutions operating in the three pilot states were not marketing or offering financial products or services for the production or purchase of clean stove/kilns. However, through the interventions of SFM Project, UNDP has provided grants for disbursement as loan to various MFIs and MFBs, in regard, the Projects significantly addresses the affordability barrier by facilitating access to consumer and start up finance for cookstoves manufacturers, wholesalers and retailers, hence increase number of clean cookstoves in the communities. Since year 2017, when the Project began, through the catalytic support from SFM Project to the industries has enabled them to produce on their own over 15,000 wood/charcoal stoves and sold to end-users in the open market.

Measure	Description of Indicator	**Baseline Level**	**Midterm target level**	**End of project target level**	**Midterm Level & Assessment**	**Achievement Rating**	**Justification for Rating**
Outcome 3 Improved efficiency, quality and affordability of domestically manufactured cooking/heating appliances for BOP and Strengthened domestic supply chain for EE/RE cooking and heating appliances	Number of low-cost stoves designed, made and tested for each state by EOP	No specific number of clean cookstove had been designed, made and tested for BOP market.	(not set or not applicable)	At least 1 low cost clean cookstove designed, made and tested for each of the BOP market in Cross River, Delta and Kaduna State by EOP	Participatory and gender sensitive and peer to peer training for local SMEs, distributors and community centers carried out in June 2018 and July 2019 in the three States to build local capacities. In 2018, participatory Cookstoves Technology Development team of academia/ researchers, local manufacturers and marketers of cookstoves as well as representative of end-users was established; Generated concept designs for cook stoves based on end user's needs; Generated Computer Aided Designs (CAD) models for the five different cook stoves Produced detailed engineering drawings for the five (5) different cook stoves Produced five working prototype / physical sample of the five different cook stoves. Expert-Peer Review of the prototype stoves conducted in July 2019 at Lagos.	Satisfactory (S)	From the many stakeholders, clean cookstove manufacturers, wholesalers, retailers and consumers that the MTR team interviewed and discussed with, it was evident that the design and production , as well as testing of the clean cook stoves have reached commendable levels, however, there is need to continues investment in design, production of high quality clean cookstoves, testing and quality labeling in the focus areas. Research and development in clean and affordable cookstoves and technologies still need to be enhanced. Given the many clean cookstoves and associated technologies imported in the country during the SFM Projects, it is the opinion of the MTR team that there has been meaningful transfer of quality production technology of clean cook stove in the country. During the implementation of the SFM Project, aspect of consumer rights has been captured, e.g. entitlement to clean and safe environment, and local content in the clean stoves / alternative energy technologies, including national orientation agency (NOA) policy views. By large, the clean cooking technologies / material are locally available, safe, environmentally friendly and of good quality, however, further improvement is needed.

Measure	Description of Indicator	**Baseline Level**	**Midterm target level**	**End of project target level**	**Midterm Level & Assessment**	**Achievement Rating**	**Justification for Rating**
Outcome 3 Improved efficiency, quality and affordability of domestically manufactured cooking/heating appliances for BOP and Strengthened domestic supply chain for EE/RE cooking and heating appliances	Number of low-cost stoves produced and sold by EOP	No formal local production for BOP market	(not set or not applicable)	20,000 low cost stoves produced and sold in Cross River, Delta and Kaduna State for BOP market by EOP	GEF-UNDP SFM Project Customized wood/charcoal cookstoves presented to local manufacturers for production. A "Trade mark" for the above-mentioned stoves was designed and has since been used to brand cookstove being produced. 5,000 low-cost stoves produced and procured by SFM project. With catalytic support from SFM Project, the local manufacturers have produced over 8,000 low cost stoves. Making a total of over 13,000 low cost cookstoves produced. As per MTR, production of other proto-types have been commissioned and production have commenced. Over 60 youth trained on the production, use and maintenance of energy-efficient cookstoves	Highly Satisfactory (HS)	Various local cookstoves manufacturers and fabricators have trained many peoples on metal fabrication and ceramic, and as a result woman provide ceramics and men metal fabrication services within the cookstove manufacturing the value chain and hence capacity for increased low cost clean cookstoves production. There are meaningful efforts towards establishment of surveillances and certification of low cost and clean cook stoves by government bodies, though, this process should be fast-tracked to ensure safety and quality of the manufacture and distributed cook stoves.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 4: Established and successfully operating consumer financing model for clean cook stove/kiln.	- Number of financial products designed and tested and scaled up by EOP - Volume of loans disbursed by EOP - Number of households reached with clean stoves	No touchable financial products targeted for promoting production and distribution of Renewable Energy and Energy Efficient Cooking and heating technology to consumers.	(not set or not applicable)	- At least 2 financial products (matching rebate, startup loan) designed and tested and scaled up by EOP - USD 500,000 disbursed by EOP - MFIs & MFBs Sensitized on clean stoves by EOP	One financial product for Cross River, Delta and Kaduna States respectively, have been designed, developed and operationalized . Consultative and sensitization meetings with MFBs/MFIs have been held. International consultant engaged to support the development of Payment for Environmental Services & Community Forest Fund Finance Expert engaged to manage the process of grants disbursement. Consultative meeting with the CEOs of MFIs/MFBs held in Abuja. Guidelines for fund management & disbursement developed; M&E framework developed and has been accepted by MFBs/MFIs; US$105,000 disbursed (administrative cost inclusive) About 2000 households sensitized on the benefits of clean stoves through gender sensitive training.	Satisfactory (S)	The MTR found evidence that adequate participatory and gender sensitive training provided to MFIs and MFBs on clean energy financing (CEF) was undertaken for the participants of the three states. In partnership with Ministry of Finance, local banks, MFBs and MFIs have been testing, improving and where feasible been upgrading their financial products and services for the supply and demand of clean stove/kiln. There is however a need on finding innovative government and other source of funding mechanisms for SMES in the supply chain of RE and EE cook stoves and technology supply chain and more particularly creating digital / innovative platform like mobile money to enable consumers access credit to acquire clean cooking technology and also to repay through such platforms. A significant number clean cookstoves – greater that 20,000 targeted at EOP have been sold in the three states. 2018, 5,000 stoves were produced and distributed In 2019, another 5,000 cookstoves have been produced and distributed.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 4: Established and successfully operating consumer financing model for clean cook stove/kiln.	Number of MFBs and MFIs staff trained by EOP	No formal certified training	(not set or not applicable	20 bank/MFI staff each trained in Cross River, Delta and Kaduna State by EOP	20 MFBs and MFIs identified in each State for partnership establishment. Sensitization and awareness forum organized for 5 MFBs/MFIs per State. Working and strong partnership with Associations of MFIs and MFBs has been established. Financial expert engaged to train MFIs/MFBs staff and facilitate disbursements of grants, grants have been disbursed. Consultative meeting with the Association of Non-Bank Microfinance Institution of Nigeria (ANMFIN) held on the 14th September, 2017. 15 MFIs/MFBs staffs trained in each State	Highly Satisfactory (HS)	The target for engaging MFIs and MFBs in formation of formidable platform for disbursement of grants as loans to clean cookstoves, manufacturers, wholesalers, retailers and consumers has been realized. An innovative financing mechanism for the promotion of the uptake of clean cooking technology has been designed, developed and it has been operationalized. There has been commendable training for the MFBs and MFIs staff on best practices of financing clean cooking technology including financing of the entire sustainable forest management ecosystem / actors. At least all the clean cookstoves retailers have been linked with consumers though a seamless platform of providing credit to consumer to acquire clean cookstoves, this in turn has increased sales. There is however, a need to increase the available revolving fund as the demand for clean cookstove increase. The cost of the clean cookstoves seems to be high for the BOP consumers, hence innovative ways like financial deepening funds or federal or states' subsidies should be introduced to enable fast penetration of the clean cookstoves.

Table 2: Ratings for Project Implementation, Adaptive Management and Sustainability

Measure	Achievement Rating	Justification for Rating
Project Implementation & Adaptive Management	Moderately Satisfactory (MS)	Implementation of all the 4 components of the SFM Project has illustrated proper management arrangements, work planning, finance and co-finance, project-level monitoring and evaluation systems, stakeholder engagement, reporting, and communications and is leading to reasonably efficient implementation of the Project. There are however some shortcomings in terms of lack of enough adaptation measures to achieve the seemingly over ambitious target on the establishment of new forestlands in Delta and Cross River States. One of the key levers or aims of the SFM Project is to increase supply of sustainable and renewable forest resource for cooking and heating in the three states focused by the Project. The Project Management should find plausible ways of engaging various stakeholders, development partners and beneficiaries in order to unlock hinder synergies, model / approaches of achieving the targets and indeed extra and enough funds to facilitate the achievement of the Project aspiration of increasing supply side of the sustainable fuelwood management equation. Real time capture, transmission and consolidation of various data/information at the local level / intervention sites that demonstrates progress towards results need to also to made more vigorous and robust and in this regard, technologies like geographical information system (GIS), remote sensing (RS), global position system (GPS), efficient and effective online or web based integrated database management systems (IDBMS) as well application of GEF Tracking Tools should be enhanced.

Measure	Achievement Rating	Justification for Rating
Sustainability	Satisfactory (S) /(ML)	Generally, in Nigeria, there is lack of enough coordination and integration between policies and projects addressing sustainability of fuelwood production and consumption at all levels from local to national. Despite obvious linkages and synergies, the two sides of fuelwood problem, demand and supply, are being addressed in isolation in most parts of the country. These will be an ongoing concern for the SFM Project sustainability. The SFM Project is a special one in that, it is striving to bring together two types of projects and programs. Through at integrated an approach that aim at dealing with a) Sustainable forest management (supply side); and b) Clean energy access (demand side), the Project aims to achieve a truly Sustainable Forest Management System for the three states. The MTR team further notes that, the sustainability of SFM Project's outcomes, in particular of its support to EE market transformation for efficient cook stoves will be ensured via close involvement of three (3) key market stakeholders: local communities, manufacturers and financial intermediaries (MFBs and MFIs). It is the aspiration of the project to create such business model that market will continue growing without further grant support. This is based on the following assumptions: • Demand for improved cook stoves will sustain due to implementation of SFM regime in pilot communities; • Supply of affordable cook stove will be provided by local manufacturers; and • Financing will be made available at affordable terms by partner MFBs and MFIs. The issue of getting enough finance among other resources to support the four component is a challenge to sustainability of the SFM Project outcomes. The federal and state governments, plus other key stakeholders and beneficiaries as well as development partners should come together and identify, design, develop and implement a Grand Plan that mobilizes human, technological and financial resources – and more particularly carry out participatory rural appraisals (PRA) to get the buy in of plausible pathways of SFM Project outcomes realization and continuity.

D. Summary of Conclusions

The SFM Project implementation framework has been well articulated and opportunities and challenges that define the success of sustainable fuelwood management interventions have been considered and integrated in the Project design and implementation. These opportunities and challenges that define SFM Projects success include:

Opportunities;

- Forests are still a valuable resource
- Resource rights are shifting to local people
- New integrated conservation-development approaches are emerging
- Markets are expanding and emerging

Challenges;

- Biophysical barriers to sustainable management of forest resources (these include barriers like low inherent productivity and management for multiple products)
- Policy barriers to sustainable management of forest resources (these include barriers of disenabling forest policy and marginalisation of the forestry sector)
- Economic barriers to sustainable management of forest resources (these include barriers like cash constraints pushing decisions towards high preferences for rapid exploitation and low margins, that is high management and transaction costs)
- Organisational barriers to sustainable management of forest resources (these include barriers like weak local organisations and weak national forestry organisations)

Other key highlight summary aspects of the SFM Project are as follows:

a) Given the circumstance in the firewood sector, the SFM Project is timely, this based on status and trends statistics of the deforestation and forest degradation coupled with imbalance and less functional energy mix in the country's economy;
b) The development of renewable and efficient cooking technology and managing of the firewood demand have been undertaken within the framework of national and local supply chain of the forest and firewood sectors;

c) The key ingredients for success of the SFM Project have been; designing and implementation of effective training and capacity building instruments and focusing of the female gender most critical areas of reducing vulnerability – include addressing climate change and creating sustainable livelihoods for women;
d) Ownership of the project was well envisioned – but can still be enhanced , e.g. state governments are vigorously involved in implementation, some sizeable land have been allocated by communities and state governments for establishment of woodlot, though this should significantly be scaled up / increased if the 53,003 hectares of combine forestlands and woodlots target of the Project is to be achieved;
e) The project has, to great extent been based on result and resource efficiency and effectiveness utilization framework (RREEUF). Most of the government /state project offices have been able to effectively manage their resources in better ways. State projects offices have been utilizing UNDP Harmonised Accounting and Transfer System, whereby payment requests are made and then suppliers are paid directly by UNDP;
f) To great extent the project is an eye opener in regard to Nigerian National Sustainable Energy Provision with sectors relying on firewood;
g) Female gender is a key consideration in realising the objectives of the SFM Project, a good example is in clean cookstove manufacturers where women like Mrs. Happy Amos (Managing Director and founder of clean cookstove enterprise called Roshan Global Services Ltd) and Mrs. Binta Yahaya (CEO and founder of clean cookstove enterprise called Greenland Fati Gold Services) have been effectively enabled to start clean cookstove manufacturing and distribution in various parts of the country;
h) SFM Project is expected to achieve greater environmental, biodiversity and climate benefits once all the activities outlined are successfully implemented;
i) To great extent, targets in component 2, 3 and 4 are being realised, however, component one on increasing sustainable supply of firewood has lagged behind largely because of lack of enough land allocated for woodlot establishment plus lack of enough funds. REDD + hasn't come through after initial assessment, setting targets on new forestlands and woodlots and putting across some commitment of availing funds;
j) Nigeran Land Tenure system (NLTS) is a major hinderance to the realization of component 1 targets, however this can be overcame by why of engaging States Governments in signing MoUs to providing states' forest reserves and a well laid out framework for allowing community to access sustainable firewood and other forest resources from woodlots established in States' forest reserves; and

k) For sustainability of the SFM Project outcome, the SFM Project management should truly create ''Community forestry'', which will be brought into existence when the local communities will be fully enabled to play a significant role in the states' forest reserves and community woodlots use decision-making and the communities are satisfied with their involvement and benefits from the management of the surrounding forest reserves / woodlots and its resources.

As per MTR Consultant, the overall SFM Project rating is that it SATISFACTORY.

This is because most of the Project planned interventions outcomes are all beyond the midterm targets and are above the expected 50% achievement compared to the end term targets. What is remaining is to find innovative ways to fast track the achievement of increasing supply side of the sustainable forest management system among other technological quality refinement, increased awareness and enhanced financial and human resource support of the Project. The target of realising 50,000 hectares of new forestlands is ambitious, however, with proper mobilisation of human, technical and financial resources, including extending the SFM Project to a second phase will enable the aforementioned target to be achieved, of which it will be a significant milestone for the entire SFM Project aspiration and vision.

In order to fast track and efficiently achieve the end of project targets / outcomes, the MTR team has identified various recommendations that need to be taken into consideration in the remaining stage of project execution. These recommendations are briefly outlined in section 'E' below.

E. Recommendation Summary Table

No.	Key Aspects	Brief Description	Responsibility
1.	Capacity building and improvement of the clean cookstove supply chain /research, design and production ecosystem.	The current Multifunctional Platform (MFP) or demonstration centres should not be allocated to individual entrepreneurs given that the initial design/intent and communication to the communities was to have the communities manage the three established MFPs. The Forest Management Committees (FMCs) and/or woodlots sustainable land management committees (Woodlots SLMC) should oversee the management of the MFPs with the guidance of Local Government Councils (LGC) within the Local Government Area (LGA). The MTR team assessed the current use of MFP in Saminaka community in Kaduna and found out that the current occupier - Greenland Fati Gold Services is using the facility sections as follow: - Revenue collection desk - Production / fabrication areas - Show room - Store for raw materials - Restaurant – though has not started There are however, strong community opposition from community for Greenland Fati Gold Services to continue using the facility even if the owner has paid about 1.3Million Naira (USD 3,611) at a consideration to purchasing a section of the MFP and rent consideration for a couple of years. Based on the above, and notwithstanding the recommendation above, the MTR team further to recommend the Project management to consider the following addition recommendations: 1. All the MFPs to be converted to Community Learning Centres (CLCs). The CLC should then be constituted of the following compartments: Inquiry desk, information/ business centre with small library, ICT services were local pay reasonable charges, environmental video facility for the locals to learn on environmental conservation strategies / approaches, the CLC should also have an administration office, a room for showcasing various environmental products and services - more specially cookstoves and clean fuels, there should also be a restaurant that uses clean stoves and fuels and locals should pay reasonable amount for foods offered at the restaurant – restaurant can also be used to promote local foods and balanced	-ECN/PMU -State governments -LGA/LGC -Private investors -FMCs -Wood SLM Committees -MFIs & MFBs -Federal Ministry of Environment -Federal Ministry of Finance, Budget & Planning -Development Partners -Other relevant federal states ministries and agencies -Civil society -Beneficiaries

No.	Key Aspects	Brief Description	Responsibility
		nutrition. Adjacent to the CLC should a demonstration tree nursery and woodlot. There should also be an adjacent local clean cook stove fabrication shed, he / she could also venture in alternative clean cooking fuels. 2. Establish in each of the three states a Centre of Excellence (COE). The COE should link with other learning and R&D institutions in the country and outside the country in order to improve quality and quantity of cook stoves produced in the country. The COE should have the following sections / compartments: -Inquiry desk/ office -Research and design section -Administration office -Show room -Library (more elaborate) -Restaurant to promote clean and sustainable cooking -ICT services section (more like the community learning centre but more elaborate) 3. Establish one in each of the three states a state of the art clean cookstove parts fabrication factory. The factory will be a clean cookstove parts fabrication factory with the best machinery to do so. The fabricator shall not be allowed to finish the cookstoves, but to supply best-made specific parts to the cookstoves to manufactures who will assemble the final products at their cottage industries. 4. Establish at least two clean cookstoves and alternative fuel manufacturers in each of the three states.	
2.	Mobilization of more financial, technical and human resources for promoting the achievement of all the SFM Project expected outcomes.	From the huge target of realising about 50,000 hectares of new forestlands, to the need on significantly creating awareness of cleaning cookstoves, enhancing the purchase of critical numbers (more than 20,000) of clean cookstoves and fuels, huge need for improvement in the efficiency, quality and affordability (pricing) of the clean cookstoves, need for improved sustainable fuelwood supply chain and the large gaps in creating enduring renewable energy (RE) and energy efficient (EE) heating and cooking technological financing mechanism in the country; there is a need for the Management of the SFM Project to unreservedly seek consultative multi-stakeholders forums that will seek ground-breaking ways of mobilizing more human, financial and	-ECN/PMU -State governments -LGA/LGC -Private investors -FMCs -Wood SLM Committees -MFIs & MFBs -Federal Ministry of Environment -Federal Ministry of Finance, Budget & Planning -Development Partners -Other relevant federal

No.	Key Aspects	Brief Description	Responsibility
		technological resources – especially using participatory rural appraisal (PRA)approaches. Mechanisms like establishment of a National Clean Cooking Financing Mechanism / Fund and Financial Deepening Fund for supporting access of clean cooking technologies by industrial, institution and domestic users should be established.	states ministries and agencies -Civil society -Beneficiaries
3.	Awareness creation and training	Though the MTR team found out that significant training and awareness creation has taken place, it also came out from the assessment that more of training and awareness is required in order to enable the SFM Project to reach critical mass for creating the desired transformation. The fuelwood sector has huge a burden of traditional disempowering beliefs and practices and to transform the sector, more people need to be trained and sensitized on the 'workings' of sustainable, clean and affordable cooking technologies. In this regard, the MTR team do recommend the following: • More awareness and training should be undertaken for the existing and potential stakeholders and beneficiaries. Innovative awareness approaches like use of social media (Twitter, Facebook, Instagram, WhatsApp) as well as print and electronic media should be used. • Road shows need to regular and should contain enough clean cookstoves plus enough funds for providing credit facilities to consumers. Federal Government, State, Local Government Areas and traditional leaders should be involved in sensitization prior and during the road shows. • NOA should be used in advocacy and awareness creation in the country. This because NOA has experience in the involve of women in renewable energy and environmental conservation and endeavours of the National Agency for Great Green Wall (GGW) which is dealing with desertification in the northern region of the country. In addition, NOA Chief Orientation and Mobilization Officers (COMOs) have good experience with the Sokoto State project on women and climate change. • Furthermore, cost -benefit scenarios should be illustrated to communities for them to appreciate the project's interventions. For example, health and income benefits and results of unsustainable utilization of forest resources e.g. climate change.	-ECN/PMU -State governments -LGA/LGC -Private investors -Development Partners -Other relevant federal states ministries and agencies - Civil and government agencies organizations -Beneficiaries

No.	Key Aspects	Brief Description	Responsibility
		• There is need to create awareness among the youth for them to become future manufacturers of cook stoves among other clean cooking technologies (including fuels). A good example is the 1973 national youth sensitization program that aimed at empowering the youth to becoming the driving force for local manufacturers. Such youth awareness program with the SFM Project should focus on illuminating the opportunities within the whole value chain of clean cooking technology - including contingency industries like insurance and banking services. • More need to be done in terms of sensitising the supply chain to take up loans with MFIs and MFBs. Relevant federal, state and local government institutions should lead this rather than financial institution in order to create trust of the process. • Enhance continual uptake of clean cooking technologies (e.g. clean cookstoves) through civil and government agencies organised groups throughout the country. This is because civil and government agencies organization are capable of quick uptake of technology for example the recently supplied clean cookstoves through Nigeria Police Officers Wives Association (POWA). • Technological and production capacity to be created at the universities, colleges, and Technical and Vocational Education and Training (TVET) institutions in order to support the industry in supply chain growth and development.	
4.	Land tenure system and achievement of the new forestlands and woodlot targets.	Given that currently the SFM Project aims to achieve the target of establishing new forestlands and woodlots through acquisition of community lands, and the fact that not many communities and local leadership want to release land to the woodlot or forestlands establishment, and in that they prefer growing of various cash and food crops to these community lands. The MTR team do recommend the Project Management and other relevant stakeholders to consider woodlot development and establishment of new forestlands to be carried out as a first priority in State Forest Reserves, and in second priority in the Community Lands and third priority in Private Lands. The State Governments should however, ensure that there is a well laid out framework for allowing community to access sustainable firewood and	-ECN/PMU -State governments -LGA/LGC -Private investors -Development Partners -Other relevant federal states ministries and agencies -Beneficiaries

No.	Key Aspects	Brief Description	Responsibility
		other forest resources from woodlots and forestlands established in States' forest reserves.	
5.	Pricing of the clean cookstoves	Currently, most of the retailers and consumers of clean cookstove indicated that average price of charcoal and fire wood clean cookstove was about 5000 (USD 14) and 4000 (USD 11) Naira respectively. These prices were indicated to be beyond the BOP consumers and they did compare the prices with the retail price of LPG cylinder plus gas which was averaging to 7000 Naira (USD 19). The widely recommended prices were 3000 Naira (USD 8) for charcoal and 2000 Naira (USD 6) for firewood clean cookstove. Based on the aforementioned, the MTR team do recommend the SFM Project Management to consider and roll-out various innovative ways to reducing clean cookstoves prices. This will ensure that that the entrepreneurs are selling the cook stoves and are at least making meaningful profit margins for their business sustainability. Mechanisms like establishment of a financial deepening financing mechanism for the clean cooking supply chain and subsidising the retailing of clean cookstoves should be sort and implemented. The financial deepening is a mechanism that enable creating value through financial inclusion which generate sustainable improvements in the livelihoods of lower-income households through reduced vulnerability to shocks like climate change, increased incomes and employment. In actual sense, the clean cookstove financial deepening mechanism would involve for example where cookstove and clean fuel producers are given a revolving fund to spar reduced cost of production and push the benefits downward the value chain to allow consumer obtain sustainable and clean cooking technology at an affordable price hence enabling BOP consumers to create sustainable livelihoods, become more climate change resilient and make profits from their businesses.	-ECN/PMU -State governments -LGA/LGC -Private investors -Development Partners -Federal Ministry of Finance, Budget & Planning -Other relevant federal states ministries and agencies -Banks, MFBs & MFIs -Beneficiaries
6.	Project implementation supervision, monitoring and evaluation	More inspection and timely capture of data for woodlots, tree nurseries establishment and cook stoves distribution should be ensured. PMU/ECN should have at all time the real-time data and information on the SFM Project Progress towards Results. Using innovative Project real-time data and	-Federal Ministry of Environment -ECN -PMU

No.	Key Aspects	Brief Description	Responsibility
		information like GIS, GPS, Remote Sensing as well as Integrated Database Management Systems should be introduced to enable creation of a real-time dashboard visualization and analysis of the Project progress on implementation of various interventions. Grant and co-financing administration by MFBs and MFIs to beneficiaries should be robustly monitored and assessed. Inspection, Monitoring, Evaluation, Accountability and Transparency at the state level should be enhanced, more especially if the state forest reserves (FR) are taken as the main approach to achieving the new forestlands and woodlots targets. Indicators and targets can be modified to fit UN SDGs e.g. SDG 7 clean and affordable energy among other Project's indicators and targets. GHGs baseline assessment should be undertaken in order to establish practical target of reduction per state. Further consultation with stakeholders and beneficiaries should be undertaken at the state and national levels to close gaps on expected outcomes and targets in the next phase. Members of the Project Steering Committee (PSC) should continue undertaking regular M&E visits to project sites and the PSC and PMU should continue to enhance Project coordination and communication among various stakeholders, beneficiaries, governments and development partners. In addition, PSC need to meet more frequently, at least quarterly.	-State Governments Ministries and Agencies
7.	Consumer and environmental protection, safety and quality improvements	Aspect of consumer rights regarding the clean cooking products like entitlement to clean and safe environment and inclusion local content should be monitored and where there are deficiencies getting corrected. On the other hand, aspects of technology safety and compliance to environmental quality standards should be monitored and where necessary enforced or enterprises guided or supported in complying with the requirements. good. Competition and consumer protection should also ensure that there is no monopoly of technology and standards are maintained as well as price.	-The Federal Competition and Consumer Protection Commission (FCCPC) -Standards Organisation of Nigeria (SON) -National Biosafety Management Agency (NBMA)

No.	Key Aspects	Brief Description	Responsibility
		More technology and licenses should be availed in order to spur production of sustainable charcoal, that efficient and effective technology for carbonization of wood fuel to charcoal. Quality and quantity of Kaolin and paint in the casing of cook stoves should be standardised to safe levels. Top sides of cookstoves should also be made rust free because during cooking water, salt and other compound tend to affect the top part of cookstove either through rust of corrosiveness. Cookstove handles should made more non-heat conducting by using material like fibre and wood as well ensuring / leaving appropriate distance from the main body of the cookstoves and handles to prevent burning and injury to the users. An effective surveillance or certification framework for the clean cookstoves should be put in place by the federal or state governments.	-National Environmental Standards and Regulations Enforcement Agency (NESREA)
8.	Sustainability of the SFM Project outcomes	The SFM Project Management, Government of Nigeria and development partners could consider extending the SFM Project to Phase 2 and expand to other states. SFM Project phase 1 to be considered as a pilot phase. This will enable the Projects gains to be consolidated as the Project gear up to entrenching sustainable changes in the fuelwood supply chain in the focus states as it expands to other states. Clean cooking products manufacturers, wholesalers and retailers should be guided on how to diversify their enterprises in order to create sustainable clean cooking business models. The entrepreneurs could seek to include clean cooking fuels, food and other consumer products in the list of items traded by their enterprises. Learning from other related projects will also be critical to the sustainability of SFM Projects outcomes as well as enhanced partnerships and collaboration between various actors in the sustainable fuelwood management framework. For sustainability of the SFM Project outcome, the SFM Project management should truly create ''Community forestry'', which will be brought into existence when the local communities will be fully enabled to plays a significant role in the states' forest reserves and community woodlots use decision-making and the communities are satisfied with their involvement and benefits from the management of the surrounding forest reserves / woodlots and its resources	-ECN/PMU -State governments -LGA/LGC -Private investors -FMCs -Wood SLM Committees -MFIs & MFBs -Federal Ministry of Environment -Federal Ministry of Finance, Budget & Planning -Development Partners -Other relevant federal states ministries and agencies

No.	Key Aspects	Brief Description	Responsibility
		More of participatory approach should be enhanced in order to ensure sustainability of the Projects outcomes including actual enterprises profitability. PMU should continually strengthen monitoring, evaluation and coordination for the SFM Project implementation. M&E should be made more effective and robust by introduction of technology lie GIS, GPS and remote sensing, PMU should continue working with various stakeholders in improving existing (or developing new ones) policies controlling firewood supply chain / market. State government could strive to increasing their human resource looking after the forest reserves. During the MTR exercise, the MTR team noted that the forest reserve guards were far much outstretched. Where feasible, the SFM Project, should eventually be converted to continuous government program and part of a long-term plan and policy position. More stakeholders and beneficiaries should be brought on board to make the project broader and national; this will enable the SFM Project interventions to be replicated in other states in the country. As the SFM Project continues, consideration should made to allocate more Grants to MFIs and MFBs as cookstoves market share growth and hence cookstoves demand increases as well as actual sales. Furthermore, more MFIs and MFBs could be considered for the revolving grant disbursement. Specific tree species should be identified in each focus state and aggressively establish of woodlots and new forestlands in the following types of land tenure systems in terms of their priorities as listed below: i. States forest reserves ii. Community lands iii. Private land. Develop grand plan for the SFM Project forestlands and woodlots development and mobilise enough financial resources in the next two years and possibly put a business case for extension of SFM	

No.	Key Aspects	Brief Description	Responsibility
		Project if said targets are not achieved - Federal and State governments should be involved. Fast maturing tree species should be involved for the establishment of tree woodlots and new forestlands. Establishment of woodlots and new forestlands should be decentralised by way of involving communities after carrying out community rural appraisal (CRA). This would enable the Project to accessing free or affordable labour, buy in by the communities and identification of functional solutions for the deforestation / degradation, environmental and climate change problems. If the next phase 2 of the Project is approved, then there should be more focus to frontier states where the problem is more critical / severe. This could mean repackaging the SFM project, redesign or improvement of the Project's execution strategy. Proper timing of tree nurseries establishment and transplantation of various tree species should be established and followed in the Project implementation plan. In should be noted that GEF Grant is an initial catalytic fund and hence more funds must be sort for the SFM Project sustainability. All the Projects' remaining tasks implementation should be intensified in all the states as the Project progress with the end of term stage. Apart from financial and technological support to the sustainable fuelwood management supply chain, Project implementers should also focus on overcoming barriers inherent in the structures built with the key institutional and industrial processes and practices. This include issues of transparency, accountability, governance, corporate social responsibility, corporate sustainability and corporate competitiveness as well as engrained values and principles. It will also be good for implementers of the SFM Project to identify and promote various alternatives clean cooking energy sources like biofuels, biogas, solar, wind, LPG and briquettes among others. Technology for preventing or reducing blackening of cooking pots / containers used in improved firewood cookstoves should be identified and rolled out to enable increased uptake of the firewood cookstoves.	

No.	Key Aspects	Brief Description	Responsibility
		Retailers of clean cookstove should be allowed to select clean cookstove models that are appealing to their local markets in order to enable accelerated uptake of the cookstoves. Better approach / ways of working with states and local government councils on the placement of Projects cookstove kiosks should be found and rolled out in order to address the impediments that have prevented installation of all the 90 or so kiosks supplied to the states. A good example is where a proper agreement between Kaduna Local Government Council and SFM Project could enable entrepreneurs to place their kiosks in free spaces, while being charged affordable license and tax fees. If such an arrangement is in place in Kaduna LGA, the 9 remaining kiosks out of the 26 kiosks supplied could be effectively installed for the entrepreneurs. Clean cooking products entrepreneurs should be trained more on business management and book keeping to ensure sustainability of their businesses. There is a need to improve the quality of the bio gel/biofuels in the market. Consumers did complain of it being light and burning fast. Financial support to clean cooking products entrepreneurs should be extended to rural areas in the States for now, it seems most of the financial support has been concentrated in the urban and peri-urban areas. Critical fund mobilisation consultative meeting/s with various development partners, agencies, stakeholders and beneficiaries should be held in order to identify and craft models on how to realise increased funding of the SFM Projects as well as enabling the project to realise its set targets and also explore ways of taking the project to second phase. This will effectively support the Project to solidify gains made so far and also expand to more states in the northern part of the country.	

1.0 INTRODUCTION

1.1 Structure of the MTR Report

This MTR Report consists of six (6) main sections. Before this introduction, there is a brief overview of the key findings on progress towards results, implementation and adaptive management as well as SFM Project's outcomes sustainability, conclusions and recommendations encapsulated in the executive summary section. After the executive summary section, the report contains the following areas in sequence: section 1.0 - introduction which briefly outlines the structure, defines the purpose of the MTR and its objectives, methodology of data collection and analysis tools used including MTR mission work schedule; section 2.0 - project description and background context; section 3.0 – key findings; section 4.0 – conclusions; section 5.0 - recommendations as well as key lessons learnt and final section 6.0 of the report contains requisite annexes that complement the information provided in the main body of the MTR report.

1.2 Purpose of the MTR and Objectives

1.2.1 Purpose of the Midterm Review

A mid-term review / evaluation is conducted for an ongoing programme or project. It serves two immediate purposes: decision-making and taking stock of initial lessons from experience. Specifically, a mid-term evaluation provides a programme or project manager with a basis for identifying appropriate actions to: (a) address particular issues or problems in design, implementation and management, and (b) reinforce initiatives that demonstrate the potential for success. In relation to SFM Project, the key aim of the Mid-Term Review (MTR) was to examine the performance of the SFM Project since the beginning of its implementation, in this regard, the MTR included the following:

- the evaluation of the progress in project implementation, measured against planned outputs set forth in the Project Document in accordance with rational budget allocation
- the assessment of features related to the process involved in achieving those outputs
- the initial and potential impacts of the project, and
- the underlying causes and issues contribution to targets not adequately achieved.

The MTR is intended to identify weaknesses and strengths of the project design and execution, and to come up with recommendations for any necessary changes in the overall design and orientation of the project and on the work plan for the remaining project period, after evaluating the adequacy, efficiency, and effectiveness of its implementation, as well as assessing the project outputs and outcomes to date. It also shall assess early signs of the project success or failure and prompt necessary adjustments.

1.2.2 Evaluation Objectives

The MTR was to assess progress towards the achievement of the project objectives and outcomes as specified in the Project Document, and assess early signs of project success or failure with the goal of identifying the necessary changes to be made in order to set the project on-track to achieve its intended results. The MTR was also to review the project's strategy and its risks to sustainability.

1.2.3 Evaluation Scope

The MTR team was to assess the following four (4) categories of project progress. The team was to refer on the Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects for extended descriptions. The four categories of performance aspects to be assessed include:

i. Project Strategy
- *Project design*
- *Results Framework/Logframe*

ii. Progress Towards Results
- *Progress Towards Objectives and Outcomes Analysis*

iii. Project Implementation and Adaptive Management
- *Management Arrangements*
- *Work Planning*
- *Finance and co-finance*
- *Project-level Monitoring and Evaluation Systems*
- *Stakeholder Engagement*
- *Reporting*
- *Communications*

iv. Sustainability
- *Financial risks to sustainability*
- *Socio-economic risks to sustainability*
- *Institutional Framework and Governance risks to sustainability*

- *Environmental risks to sustainability*

After the MTR, the team was to prepare the main report as per the outlined guidelines in the TOR and also include Conclusions & Recommendations.

Conclusions & Recommendations section of the MTR report was supposed to set out the MTR's evidence-based conclusions, in light of the findings. Recommendations were to be succinct suggestions for critical intervention that are specific, measurable, achievable, and relevant. A recommendation table was to be put in the report's executive summary. The MTR team was however, expected to make no more than 15 recommendations in total.

1.3 Methodology of Data Collection and Analysis

1.3.1 Sample and Sampling Frame

In project or programme evaluations, sampling is concerned with the selection of a subset of individuals from within a population to estimate characteristics of the whole population within the constraints of time, human and financial resources. This MTR utilized purposive sampling and random sampling approaches. Purposive sampling was applied to select Project sites out of a sample frame of the various Project intervention in the three states in which the SFM Project intervention are being implemented.

The purposive sampling approach considered core factors including spatial distribution of the interventions, the extent over which specific states had implemented project interventions, whether the Project interventions were in rural or urban and the UNDP's national implementation modality (NIM) and the Standard Basic Assistance Agreement (SBAA) between UNDP and the GoN, and the Country Programme.

1.3.2 Data Collection

The MTR was to provide evidence based, credible and reliable information. The MTR team set-up a collaborative and participatory approach in order to ensure close commitment with the Project Management Unit (PMU), government agencies and ministries, GEF Operational Focal Point, UNDP Country Office as well as UNDP Regional Technical Advisor and other key stakeholders.

The MTR utilised data and information from both primary and secondary sources. Primary data was collected directly from key stakeholders through interviews,

questionnaires, checklists, focus group discussions and direct observation techniques. Secondary data was obtained various literature sources through desk review. The following data collection methods and instruments were utilised (see table 3):

Table 3: Data Collection Procedures and Instruments

Desk Review
The evaluators sourced for documents in possession of the various key stakeholders. The documents were analysed for secondary data and information. Some of the documents reviewed include: Project Identification Form (PIF), UNDP Initiation Plan, UNDP Project Document, UNDP Environmental and Social Screening results, All Project Implementation Reports (PIR's), Quarterly progress reports and work plans of the various implementation task teams, Audit reports, Finalized GEF focal area Tracking Tools at CEO endorsement and midterm of the SFM Project, Oversight mission reports, All monitoring reports prepared by the project, Financial and Administration guidelines used by Project Team. During the MTR process, the MTR team constantly made reference to the following key documents: Project operational guidelines, manuals and systems, UNDP country programme document(s), Minutes of the SFM Project Board Meetings and other meetings (i.e. Project Appraisal Committee meetings) and Project site location maps.
Key Informant Interviews (KII)
Semi-structured questions were asked to the stakeholders in order to address the study objectives. The questions aimed at obtaining both qualitative and quantitative data depending on the role of the stakeholder. KII were held with stakeholders both at the national and local levels. The KII involved face-to-face consultations with a wide range of stakeholders, using "semi-structured interviews" with a key set of questions in a conversational format (see Annex 3 – the questionnaire that was used in the field). Triangulation of results, i.e. comparing information from different sources, such as documentation and interviews, or interviews on the same subject with different stakeholders, was used to corroborate or check the reliability of evidence. Key stakeholders that were interviewed included the following amongst others: Staff of PMU and ECN, UNDP Nigeria Representative / Project Focal Point Person, GEF Nigeria Focal Point Person at the Federal Ministry of Environment, Director General - Energy Commission of Nigeria, Project Coordinator /Project Manager , SFM Project Administrative Officer, the three states (Cross River, Delta and Kaduna) SFM Project's focal point persons, Officer at National Orientation Agency, Deputy Director at Federal Ministry of Finance, Budget and Planning, Chairman of Nigerian Alliance for Clean Cookstoves, Director and Deputy Director at the Federal Competition and Consumer Protection Commission. In addition, the MTR team interviewed various other stakeholders, project partners and beneficiaries like MFIs and MFBs representatives, clean cookstoves manufacturers/fabricators, distributors, retailers and consumers.
Focus Group Discussions (FGD)
FGDs were used to direct MTR team's discussion in meetings with beneficiaries of the sampled interventions to obtain their perspectives on the impact of the project on the community sustainable fuelwood management.
Marking of Checklists
Checklists were used to gauge the project's relevance, effectiveness, efficiency, impact and sustainability (REEIS).
Field Observations

The evaluators also collected data by the direct observation of the interventions of the project in the sampled Project's intervention sites. The field missions covered the following states: Cross River, Delta and Kaduna.

1.3.3 Data Analysis

The information collected, including documentary evidence, interviews and observations was compiled and organized according to the questions asked in the assessment (see **Annex 3**).

The MTR team assessed the following four (4) categories of project progress:

i. Project Strategy
- *Project design*
- *Results Framework/Logframe*

ii. Progress Towards Results
- *Progress Towards Objectives and Outcomes Analysis*

iii. Project Implementation and Adaptive Management
- *Management Arrangements*
- *Work Planning*
- *Finance and co-finance*
- *Project-level Monitoring and Evaluation Systems*
- *Stakeholder Engagement*
- *Reporting*
- *Communications*

iv. Sustainability

I. Project Strategy

a) Project design:

The MTR team reviewed / assessed the following components:

- The problem addressed by the project.
- The effect of any incorrect assumptions or changes to the context to achieving the project results as outlined in the Project Document.

- The relevance of the project strategy and assess whether it provides the most effective route towards expected/intended results. Whether lessons from other relevant projects were properly incorporated into the project design?
- The extent to which the project idea/conceptualization had its origin within national, sectorial and development plans/priorities and focuses on national environment and development interests.
- Decision-making processes: Assess information dissemination, consultation, and "stakeholder" participation in design stages.
- The extent to which relevant gender issues were raised in the project design.

b) Results Framework/Log-frame:

The MTR team reviewed / assessed those following components:

- Project's log-frame indicators and targets. Checked how "SMART" the midterm and end-of- project targets are (Specific, Measurable, Attainable, Relevant, Time-bound), and suggest specific amendments/revisions to the targets and indicators as necessary.
- Whether the project's objectives and outcomes or components are enough, clear, practical, and feasible within the time frame.
- Potential beneficial development effects (i.e. income generation, gender equality and women's empowerment, improved governance etc...) that should be included in the project results framework and be monitored on an annual basis, with a specific focus on gender aspect.

II. Progress towards Results

The MTR team did review the logframe indicators against progress made towards the end-of-project targets using the Progress towards Results Matrix developed and presented in the Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects; the following Matrix template was used:

Project Strategy	Indicator[3]	Baseline Level[4]	Level in 1st PIR (self-reported)	Midterm Target[5]	End-of-project Target	Midterm Level & Assessment[6]	Achievement Rating[7]	Justification for Rating

This Matrix did highlight the following key assessments indicators, based on the level of progress achieved.

Indicator Assessment Key

Green= Achieved	Yellow= On target to be achieved	Red= Not on target to be achieved

The MTR team did hence propose analysis and recommendations to 1) understand the "red rating" and 2) raise bottlenecks. In addition to the progress towards outcomes analysis:

- Compared and analyse the UNDP-GEF Tracking Tool at the Baseline with the one completed right before the Midterm Review.
- Identified remaining barriers to achieving the project objective in the remainder of the project.
- By reviewing the aspects of the project that have already been successful, MTR team identified ways in which the project can further expand established benefits.

III. Project Implementation and Adaptive Management

a) Management arrangement

- MTR team did review the overall effectiveness of project management as outlined in the Project Document. The team examined whether changes have been made and if yes, assessed whether they were effective. Assessed whether responsibilities and reporting lines were clear, whether decision-making was transparent and undertaken in a timely manner. The MTR team did recommend areas for improvement.
- Review the quality of execution of the Executing Agency/Implementing Partner(s) and recommended areas for improvement.
- Review the quality of support provided by the GEF Partner Agency (UNDP) and recommended areas for improvement.

b) Work planning

- Reviewed any delays in project start-up and implementation, and identified the causes and examined if they have been resolved.
- The MTR team also assessed whether work-planning processes were results-based. In addition, the MTR team also examined the use of the project's results framework/ logframe as a management tool and reviewed any changes made to it since project start.

c) *Finance and co-finance*

- Considered the financial management of the project, with specific reference to the cost- effectiveness of interventions.
- Reviewed the changes to fund allocations as a result of budget revisions and assessed the appropriateness and relevance of such revisions.
- The team also assessed whether the project have the appropriate financial controls, including reporting and planning, that allow management to make informed decisions regarding the budget and allow for timely flow of funds.
- Informed by the co-financing monitoring table that was filled out, MTR team did provide commentary on co-financing.

d) Project-level Monitoring and Evaluation Systems:

- MTR team reviewed the monitoring tools currently being used.
- Examined the financial management of the project monitoring and evaluation budget.

e) Stakeholders engagement

This included assessments of the mechanisms for information dissemination in project implementation and the extent of stakeholder participation in management, emphasizing the following:

- The production and dissemination of information and lessons generated by the project.
- Local resource users and NGOs participation in project implementation and decision making and an analysis of the strengths and weaknesses of the approach adopted by the project in this arena.
- The establishment of partnerships and collaborative relationships developed by the project with local, national and international entities and the effects they have had on project implementation.
- Involvement of governmental institutions in project implementation, the extent of governmental support of the project.

f) Reporting

- Assessed how adaptive management changes have been reported by the project management and shared with the Project Board.

- Assessed how well the Project Team and partners undertake and fulfil UNDP-GEF reporting requirements.
- Assessed how lessons derived from the adaptive management process have been documented, shared with key partners and internalized by partners.

g) Communications

- Reviewed internal project communication with stakeholders.
- Reviewed external project communication.

IV. Sustainability

MTR team validate whether the risks identified in the Project Document, Annual Project Review/PIRs and the ATLAS Risk Management Module are the most important and whether the risk ratings applied are appropriate and up to date.

In addition, the MTR team assessed the following risks to sustainability:

- Financial risks to sustainability
- Socio-economic risks to sustainability
- Institutional Framework and Governance risks to sustainability
- Environmental risks to sustainability

1.3.3.1 Methods of Data Analysis and Information Assessment

Data entry, cleaning, and analysis were a continuous process during and after data collection. Field notes and transcripts of interviews and qualitative information were analysed and validated while conducting data collection. The following tools and techniques were adopted (see table 4):

Table 4: Summary of Techniques used to Analyse Data

Technique	Description
Statistical Analysis	• Statistical tools and techniques were applied to analyze both quantitative and qualitative data. Quantitative data was analyzed using SPSS and Microsoft Excel
Experts' panel/ Internal peer review	• This method involved leveraging on the knowledge of independent experts who on the basis of collected information and data assessed various aspects of the SFM Project. The evaluators engaged peers who play a role in sustainable fuelwood management in Nigeria to validate the findings of the data analysis phase.
Benchmarking	• The findings of the study have been reported in view of lessons learnt from similar projects in Nigeria, regional and globally.
Case study analysis	• During the evaluation, cases that demonstrated unique approaches to implementing the project as well as success stories in the implementation were documented

1.3.4 MTR Approach and Methodology Rationale

The MTR approach and methodology were participatory, hence ensuring that there was full participation and ownership of both the evaluation process and MTR Report by all stakeholders. Stakeholders included Government, UNDP Nigeria Country Office Representatives, implementing partner (IP) staff, other organization partners, project beneficiaries etc.

On the other hand, the MTR involved use of mixed- methods research process (that is both quantitative and qualitative methods). The mixed- methods approach enabled the MTR team to mix or combine quantitative and qualitative research techniques, methods, approaches, concepts or language in the MTR process.

Essentially, mixed- methods research is comprised of the following 13 distinct steps:

1) determining the goal of the study/review,
2) formulating the research objective(s),
3) determining the research/mixing rationale(s),
4) determining the research/mixing purpose(s),
5) determining the research question(s),
6) selecting the sampling design,
7) selecting the mixed-methods research design,

8) collecting the data,
9) analysing the data,
10) Validating/legitimating the data and data interpretations,
11) interpreting the data,
12) writing the final report, and
13) Reformulating the research question(s).

The use of mixed methods for the MTR enabled the MTR team to obtain data and information that had the following characteristics: trustworthiness, credibility, dependability, legitimation, validity, plausibility, applicability, consistency, neutrality, reliability, objectivity, conformability, and/ or transferability.

Furthermore, the application of mixed methods for the MTR was combined with simultaneous data and information triangulation – this involved the concurrent use of qualitative and quantitative methods with limited interaction between the two sources of data during the data collection stage, although the findings complemented one another at the data interpretation stage. Using data and information triangulations obtained from the application of mixed methods, had the following advantages for the MTR process; the MTR team was able to:

a) obtaining thicker, richer data;
b) be more confident of the interpretation of results;
c) synthesize or integrate multiple theories;
d) develop creative ways of collecting data;
e) uncover contradictions; and
f) use triangulation as a test for competing theories / findings

Some of the limitation of the MTR approach and methodology included:

a) Due to time and resource limitations, the MTR adopted sampling approaches in arriving at the specific project sites at the local level from which generalised conclusions and recommendations have been made. When done correctly, a sample can provide results that are very close to the population characteristics. However, a sample, no matter how well its selection, cannot provide the exact representation of all the population characteristics.

b) Application of mixed methods approach had some limitation in that, utilization of mixed-methods investigations in MTR was labour intensive compared to mono-method approaches (i.e., quantitative or qualitative evaluation). In reality, mixed-methods inquiries tend to require more time, resources, and effort to organize and implement. Furthermore, they require expertise in

designing and implementing both the qualitative and quantitative phases. In particular, a researcher with more of a qualitative orientation would likely find it more difficult to design the quantitative component of a mixed-methods study than would a researcher with a more quantitative orientation, and vice versa.

1.3.5 Work Plan

The MTR team followed the work schedule shown in table 5 below.

Table 5: MTR Mission Work Schedule

Sub-Region	MTR Team Meeting Group/s	Key Tasks	Date	Time	No. of Days
Abuja	Nenu Engineering Limited, CEO and Owner, Christopher Obi	Site visit and Meeting	26/11/19	1.00 – 2.00pm	1
Abuja	Roshan Global Services, Managing Director / CEO, Ms. Happy Amos	Site visit and Meeting	26/11/19	3.00 - 5.00pm	
Abuja	Federal Competitive and Consumer Protection Commission Eng. Shamm T. Kolo, Director and Kelechi Okoh, Deputy Director	Office visit and Meeting	26/11/19	6.30 - 8.30pm	
Abuja	Nigerian Alliance for Clean Cookstoves, National Chairman Prince Ene Okechukwu	Office visit and Meeting	27/11/19	8.00 – 9.00am	1
Abuja	Federal Ministry of Finance, Budget and Planning, Mr. Anselim Ogwaku, Deputy Director, Vincent Chukujekwe (PAO) and Imo Ekanem U. (A.O.I)	Office visit and Meeting	27/11/19	9.30 – 10.30am	
Abuja	Federal Ministry of Environment GEF Focal Point Person, David Kusimo	Office visit and Meeting	27/11/19	11.00 – 11.30am	
Abuja	Break	Lunch Break	27/11/19	12.00 – 12.40pm	
Abuja	National Orientation Agency, Officer, Ms. Oneli Stella	Office visit and Meeting	27/11/19	1.00 – 1.30pm	
Abuja	ECN / PMU, Eng. Okon Ekpenyong (National SFM Project Coordinator / Manager), Grace Ibe (Administrative Officer)	Office visit and Meeting	27/11/19	1.35 – 2.30pm	
Abuja to Calabar, CRS	Air Travel to Calabar, Cross River State (CRS)	Travel to CRS	27/11/19	3.30 – 4.30pm	
Calabar	CRS MFIs & MFBs Associations Representatives	Office visit and Meeting	27/11/19	6.30 – 8.30pm	

Sub-Region	MTR Team Meeting Group/s	Key Tasks	Date	Time	No. of Days
Calabar	Meeting with Stakeholders (clean cookstove manufacturer, retailers and users) in CRS and specific project sites (Ekiriba forestland in Akpabuyo LGA and Ikot Ansa woodlots)	Field Mission	28/11/19	8.30am – 5.00pm	1
Ogoja/Obudu	Travel to specific project sites (Linus - cookstoves manufacturer site, Ogoja tree nurseries and woodlots and Mbok demonstration centre)	Field Mission	29/11/19	6.30am – 5.00pm	1
Calabar to Abuja	Travel from Calabar to Abjua and a teleconference with UNDP CO Focal Point Person.	Travel and Teleconference	30/11/19	9.00am – 5.00pm	1
Abuja to Asaba	Travel from Abuja to Asaba and brief meeting with Delta Sate SFM Project Focal Point Person, Chukwuma Nwose	Travel and Field Mission Preparatory Meeting	1/12/19	10.00am – 5.00pm	1
Asaba	Meeting with Stakeholders (MFBs & MFIs Associations Representatives and Clean Cookstoves retailers and consumers) in Delta State and visit to cookstoves kiosks	Office visit and Meeting	2/12/19	9.00am – 5.00pm	1
Delta State	Visit to Project sites/beneficiaries (Ogwushi-Uku tree nurseries and forestlands, Adonte and Abah-Uno community woodlots and Ukwuu-Oba enriched forestlands, as well as Agbarho Demonstration Centre / MFP)	Field Mission	3/12/19	7.00am – 6.00pm	1
Asaba to Abuja, then Kaduna	Travel to Abuja, then Kaduna State	Travel to Kaduna	4/12/19	10.00am – 6.00pm	1
Kaduna	Meeting with Stakeholders (MFBs & MFIs Associations Representatives and Clean Cookstoves retailers and consumers) in Kaduna State.	Office visit and Meeting	4/12/19	6.15pm – 8.40pm	
Saminka - Kaduna	Visit to Project sites/beneficiaries (Greenland Fati Gold Services, Mrs. Binta Yahaya, CEO, Saminaka community and LGA representatives, LGA and Buruku Community Woodlots in Kaduna State)	Field Mission and travel back to Abuja	5/12/19	6.00am – 6.00pm	1
Abuja	Wrap-Up Meeting	MTR Team brief presentation on initial findings to PSC, PMU and UNDP CO Representatives	6/12/19	10.00am – 1.00pm	1

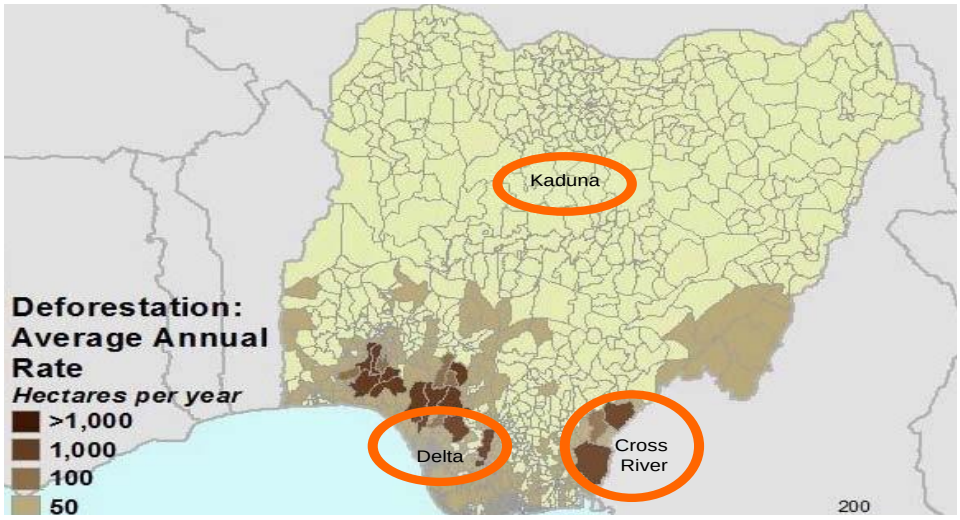
2.0 PROJECT BACKGROUND CONTEXT AND DESCRIPTION

2.1 Rationale for Intervention

Over the last decade or so, Nigeria has experienced steady growth, averaging over 7 percent per annum. Nigeria has the potential to make further strides toward rapid, more inclusive growth, which would reduce poverty further and create more opportunities for shared prosperity. The challenge for Nigeria is to pursue economic development and realize the Vision 2020 and Transformation Agenda (2013-2018) without creating additional burdens on natural resources thereby preserving ecosystems that are critical to maintaining the quality of life and providing environmental services to society. Climate change will impact on sectors that are strategic for the growth of the economy, such as agriculture, livestock, and water resource management. Increasing temperature, coupled with changes in precipitation patterns and hydrological regimes, will only exacerbate existing vulnerabilities.

Nigeria has the third highest rate of deforestation in the world: 3.7% or 410,000 hectares of forests annually, with some areas in the South losing over 1,000 hectares/year (see figure 3). The country has lost over 50% of its forest resources between 1990 and 2010 when its forest area shrank from 17 million hectares down to 9 million hectares (FAO, 2010)[1]. With continuation of current trends unabated, there is great concern that Nigeria's scarce forests will be lost within a few decades.

Figure 3: Map of Deforestation in Nigeria (Conservation International, 2014)[2]



[1] *FAO 2010. Global Forest Resources Assessment. FAO Forestry Paper 163. FAO: Rome*

[2] *Source: Conservation International (2014) available on-line at*

http://www.conservation.org/how/science/Documents/DeforestationGuide_CommoditySourcing_Nigeria.pdf

Deforestation is the largest source of GHG emissions in Nigeria: it is responsible for 40% of national CO_2 emissions (SNC, 2014). According to the Second National Communication to the UNFCCC, baseline scenario emissions from deforestation will increase from 9.5 $MtCO_{2e}$/year in 1990 to 26.5 $MtCO_{2e}$/year in 2030 (based on a conservative deforestation rate of only 2.6%). The National Forest Conservation Council of Nigeria (NFCCN) estimates that a large portion of the forests in Nigeria will be cleared within a few decades if current rates of deforestation are not reduced. The lack of reforestation activity means clearing is not being offset by new plantings. With forests almost gone in the north of the country already, the loss of tree cover is also thought to be helping accelerate the spread of deserts and reducing farmland. A report by the NFCCN in 2008 estimated that 35% of arable land had been lost to desertification in the north over the last 50 years[3].

Unsustainable and constantly mounting consumption of fuelwood by Nigerian households, institutions (schools, prisons, hospitals, army camps) and cottage industries (e.g. fish smoking, cassava processing, and palm oil processing, bakeries) is one of the main causes of deforestation and land degradation. More than half of the 9.6 million hectares of rain forest belt in the south of Nigeria has been used to meet the demand for fuelwood in rural and urban areas. Fuelwood use has grown from 50 million m^3/year in 1990 to 70 million m^3/year and accounts for a significantly higher share of forest product use than, for example, commercial logging; the latter amounts to only 11 million m^3/year in 2010 and did not register any major changes in the last decades (FAO, 2010). This increase is largely due to population and economic growth, and also to the absence of affordable and more energy efficient alternatives, especially for the poorest consumers at the Bottom of Pyramid (BOP) market segment. This is further exacerbated by the rising prices and erratic supply of fossil fuels, forcing a massive shift from "modern" fuels like kerosene and LPG back to reliance on fuel wood, i.e. reverse substitution with wood fuel (FAO, 2010).

Apart from causing economic hardship for the poor, the use of inefficient stoves also causes serious health problems. The World Health Organization has estimated that for the mid-2000s, Nigeria's population's heavy reliance on inefficient cooking energy technologies has resulted in 95,000 deaths per year, mostly women and children from smoke inhalation related diseases making it the third cause of death after malaria and AIDS in Nigeria (WHO, 2008). Furthermore, the incomplete combustion of firewood in traditional inefficient stoves can cause black carbon emissions that contribute to global warming (IPPC, 2014).

[3] *Nigerian's Forest could go by 2020", Carbon Positive News Article, as reported in Atmosfair's POA Cookstoves.*

The Second National Communication (SNC, 2014) estimates that about 4.5 million hectares of fuelwood plantations have to be established in order to tackle the primary cause of deforestation and help address the looming shortfall of fuel wood resources. However, this analysis does not take into account the significant, yet unrealized, potential to effectively reduce demand for non-renewable fuelwood through the promotion of more energy efficient cooking and thermal solutions, as well as through the use of alternative low-carbon energy sources, such as LPG, biogas, ethanol or solar energy.

Natural resources play a pivotal role in the lives of people in Nigeria with 75% of the population living in rural areas and over 70% employed by the agriculture and forestry sector. Increasing economic development and demographic pressure are changing agricultural and forestry systems in Nigeria and creating ever-increasing pressure on the natural resource base. The Government of Nigeria seeks to promote a paradigm shift towards low-emission and climate-resilient development pathways, to achieve economic efficiency in directly securing emission reductions at cost, and to support equity in the distribution of resources.

Internal migration to urban areas, poor enforcement of legislation and widespread poverty are some of the main contributing factors to fuel poverty and degraded natural resources. These trends are rapidly heading towards a state where over-extraction and insufficient re-planting of trees is threatening both people's ability to afford fuel wood for cooking and their ability to easily attain it in other ways. Coupled with this humanitarian issue, the deforestation and forest degradation that occur as a symptom of people's reliance on wood fuel (+70% of the population) is threatening the sustainability of the natural environment and its ability to perform ecological services in fragile areas.

2.1.1 Current Policy and Regulatory Framework to improve fuelwood supply side and demand side management measures

As demonstrated here below, the Federal Government of Nigeria is well aware of the above-mentioned issues, are setting policies to balance the demand of fuelwood with sustainable and renewable supply through sound Forestry and Fuelwood policy and Renewable Energy and Energy Efficiency Policy (revised in 2015).

Forest policies and programmes: Following a lengthy and participatory review, the National Forestry Policy was approved by the Federal Government in 2006. The Policy's overall objective is to achieve sustainable forest management, leading to sustainable increases in the economic, social and environmental benefits from forests

and trees, for present and future generations, including the poor and vulnerable groups. Specific objectives include: i) Increase, maintain and enhance the country's forest estates through sound forest management practices; ii) Address the underlying causes of deforestation, forest degradation and desertification; iii) Promote and regulate private sector involvement in forestry development, and create a positive investment climate in the sector; iv) Support schemes that facilitate access to carbon markets; and v) Encourage forest dependent people, farmers and local communities to improve their livelihoods through new approaches to forestry.

Renewable Energy Master Plan, 2005 and 2015: The Renewable Energy Master Plan (REMP), drafted by the Energy Commission of Nigeria and the United Nations Development Programme (UNDP) in 2005 and reviewed in 2015, expresses Nigeria's vision and sets out a road map for increasing the role of renewable energy in achieving sustainable development. The REMP does not specifically differentiate between on-grid and off-grid generation, however, it refers to integrating renewable energy into buildings, electricity grids and "other distribution systems". [ECN; 2013].

Simultaneously to the overall increase in power supply from renewable energy sources, the REMP targets higher electrification rates, from 42% in 2005 to 60% in 2015 and 75% by 2025. Below we shall return to the precise targets set for each subsector of renewable energy. However, in this context it is important to note that the REMP has still not been signed off by the government or formulated into a law governing the renewable energy development. Only once that has happened will investors have a clear path for drawing on the various financial incentives envisaged, such as pioneer status (tax exemption) and custom duty waivers.

Fuelwood Policy: Over 70% of Nigeria's population depends on fuelwood for cooking and other domestic uses. The consumption of fuelwood is worsened by the widespread use of inefficient cooking methods, the most common of which is still an open fire. This system has a very low thermal efficiency and the smoke is also hazardous to human health, especially to women and children who mostly do the cooking in homes. The rate of consumption of fuelwood far exceeds the replenishment rate to such an extent that desert encroachment, soil erosion and loss of soil fertility are now serious problems in the country. The largest sources of fuelwood at present are from open forests, communal woodlots and private farmlands. Supply from natural forest regeneration is continuously being diminished due to the additional activities such as the clearing of forests for development projects, agricultural and industrial activities. Since forests are essential for healthy environment, act as a check on wind and water erosion and desertification, and also serve as energy sources, it is essential that they are extracted in a balanced, sustainable and rational basis.

The fuelwood policy stipulates that: i) The nation shall promote the use of alternative energy sources to fuelwood; ii) The nation shall promote improved efficiency in the use of fuelwood; iii) The use of wood as a fuel shall be de-emphasized in the nation's energy mix; and iv) The nation shall intensify efforts to increase the percentage of land mass covered by forests in the country. There is also a need to restore degraded land and forests.

Objectives of the fuelwood policy: The objectives of the policy are: i) To conserve the forest resources of the nation; ii) To greatly reduce the percentage contribution of fuelwood consumption in the domestic, agricultural and industrial sectors of the economy; iii) To arrest the ecological problems of desert encroachment, soil erosion and deforestation; iv) To facilitate the use of alternative energy resources to fuelwood; and v) To reduce health hazards arising from fuelwood combustion.

Strategies for the fuelwood policy comprise:

1) Cultivating fast growing tree species needed to accelerate the regeneration of forests;
2) Developing appropriate technologies for the utilization of alternative energy sources to fuelwood;
3) Developing appropriate efficient wood stoves in the short term;
4) Encouraging the establishment of private and community woodlots for supply of fuelwood in the short term;
5) Establishing micro-credit facilities for entrepreneurs, especially for women groups, for the establishment and operation of commercial fuelwood lots and the production of renewable energy devices and systems;
6) Developing an appropriate pricing structure to encourage substitution from fuelwood to alternative fuel types;
7) Ensuring the availability and effective distribution of alternative energy sources to fuelwood at all times;
8) Establishing training programmes on the use, maintenance and fabrication of efficient woodstoves and other alternative technologies;
9) Organizing systematic public enlightenment campaigns on the problems of desertification and soil erosion arising from deforestation;
10) Ensuring the existence of effective forestry laws to stop the willful felling of trees;
11) Ensuring effective enforcement of the forestry laws;
12) Increasing the area covered by forest reserves;
13) Setting up an effective system of forest regeneration; and

14) Disseminating the alternative technologies to fuelwood through extension programmes, pilot plants.

2.1.2 Situation analysis of the fuelwood and cooking energy value chain in Nigeria

In Nigeria, the demand for fuelwood is very high because more than 70% of rural households use fuelwood for their cooking, making it the most used form of cooking energy. The over-dependence on fuelwood in the country has been attributed to its availability and affordability compared to other sources of energy. Earlier research found that fuelwood consumption in the north and south western parts (the Ibadan area in Oyo state) of Nigeria far exceeds sustainable production, and the deficit is only made up from areas of surplus (pockets of localized vegetation in other parts of the country), which adds to the cost of the wood.

Southern States: Commercial firewood production is mainly carried out by the majority of Southern State villages that are located near major highways and urban centres. Firewood is sold along most of the highways across the State, and is purchased either in small amounts for household consumption by passing private motorists, or in large amounts by returning empty trucks for commercial consumption or resale in big cities and towns. Communities in Cross River State visited during the focus group sessions rely on dry and dead wood collected from forests. The collected fuel wood serves as the primary source of energy used for cooking, preservation and processing agricultural produce such as garri, i.e. cassava flour.

Northern States: The majority of firewood in the North comes from the South as well as from along the lengths of the North-South highways. While mangrove wood comes almost exclusively by boat from Costal States, farm wood is transported to the North via the road network. Most vendors hire trucks for transportation and do not visit the provinces themselves.

Tree Species Utilized: Although there is a great deal of diversity in the number of tree species harvested, firewood is generally classified into three broad categories: farm wood, forest wood, and mangrove wood. Farm wood, by far the most common type of firewood produced, is harvested as a part of the farming cycle and generally all tree species on the farm are used (following farm clearance and burning) to make firewood bundles. Farm wood comes by road from the villages and is harvested as part of the farming cycle, while mangrove wood is harvested from swampy areas along Nigeria's coast, transported to Lagos by sea and sold at the various wharves. Mangrove wood tends to be most popular with fish traders to use for drying and with bakers

throughout Lagos and Abuja, while farm wood is used mainly for domestic cooking. The mangrove firewood vendors have a local association at each of the wharves and generally operate in an amicable, though competitive manner. There is no association for the other firewood vendors in Nigeria.

Harvesting Methods: The vast majority of firewood is harvested as part of the farming cycle and acts as an important supplement to agrarian livelihoods in Nigeria. Farm wood is a by-product of farming and is harvested by women after their husbands have cleared the farm bush, allowed the sticks to dry and set the land on fire. After the farm is cleared, women then collect the burnt firewood, cut the wood into practical lengths and widths, and then bundle them into individual head loads.

GACC's (2011)[4] Nigeria Market Assessment Sector Mapping report summarized the cookstove scenarios in Nigeria as follows:

A. Indoor air pollution (IAP): Solid fuel usage is estimated by WHO to cause ~95,000 deaths annually, representing 3.8% of the national disease burden. Indoor air pollution exists across the country and is caused by the use of fuelwood or charcoal in open fires; kerosene stoves are often poorly maintained and release toxic fumes. More than 74% of households rely on fuelwood or charcoal for cooking, of the remaining, 25% rely on kerosene. Clean fuel penetration is less than 1%. There are several efficient cookstove programs in the country but none has achieved the scale required to serve the entire country. Formed in April 2011, the Nigerian Alliance for Clean Cookstoves aims to install 10 million stoves nationwide within 10 years through a coordinated effort across partner organizations.

With less than a 1% modern fuel penetration in Nigeria, wood and charcoal used in open fires are the main cause of IAP, resulting in significant health damage across the country. Intervention programs should aim to reduce open fire cooking with improved cookstoves and reduce reliance on wood as a fuel source by promoting modern fuel usage. While the government does not have any programs to reduce IAP, they are interested in providing awareness raising support. Awareness raising and education are critical components of a successful cookstove intervention.

B. End users: Cooking habits are generally uniform across the country, while urban households have adopted conveniences such as fast food (instant noodles), in rural households' traditional methods still prevail. Social events are frequent and require large volume cooking. Even LPG households resort to fuelwood for such events. Many consumers already pay for stoves and fuel indicating that a willingness to pay does

[4] *http://cleancookstoves.org/resources/168.html*

exist, except in rural poor households where wood is collected and used in open fires. End users are seeking convenience and an alternative to kerosene – there is frustration around supply and price instability of kerosene.

A cookstove market can be divided into two key segments - consumer and commercial. Consumers can be further segmented based on urban vs. rural location and on income. A cookstove solution should be tailored to the needs of each segment on variables such as size, fuel type, price and value proposition. The targeted rural population can be segmented into 1) subsistence farmers or temporary laborers who live below the poverty line; and 2) people engaged in agribusiness that are economically better off. The targeted urban population can be segmented into 1) households below the poverty line (<$1 per day); 2) food sellers and small business owners who make up to $10 per day; and 3) lower income professionals who make up to $50 per day.

C. Cookstove Industry: Nominally priced (USD 2-3) metal frame stoves are produced locally and used for wood or charcoal cooking; available kerosene stoves vary in quality and price (USD 10-20) and are mostly imported; imported efficient woodstoves (USD 33- 100) and LPG stoves (USD 100 minimum) are priced significantly higher. Kerosene when purchased at Government subsidized prices is the cheapest available fuel; however, during supply shortages prices can rise up to three times the subsidized price. Wood or charcoal are more expensive than LPG; however, they can be purchased in smaller quantities – important for households that cannot afford the high upfront cost of LPG. Both kerosene and LPG fuel supply chains are characterized by numerous impediments causing supply shortages and high costs. Methanol is a potential alternative fuel, but the solution and distribution networks require considerable additional development before it can be widely available to households. While there is no domestic large-scale commercial stove production, there is increasing private sector participation in marketing and distribution of cookstoves.

Available Cookstove Usage and Cost: Basic open fire stoves are locally made and available at minimal cost, while other commercially available stoves are imported. LPG and improved stoves are priced significantly higher. The majority of the population uses basic wood or charcoal stoves, or three stone fires. Commercial operators-caterers and agri-business use open fires as they are perceived to be cheaper. Kerosene and LPG stoves are limited to urban and peri-urban areas, and towns. Efficient woodstoves are expensive, have not yet fully been developed, or reached critical volume to benefit from economies of scale. Basic wood and charcoal stoves are manufactured by local welders. Some kerosene stoves are locally made, although most are imported from China. High import duties and long lead times for

custom clearance increases the cost for improved stoves. The high upfront cost of cookstoves is a major factor in the limited adoption of modern fuels and improved biomass cooking solutions. A cookstove intervention should aim to reduce this cost. In the long run purchased wood and charcoal cost more, however in the short run they can be purchased in smaller quantities requiring less financial outlay.

Fuel Usage: Households with access to trees collect wood, while many in urban areas and towns have to purchase wood. In arid Northern states, people now spend more time collecting wood and have to travel further and charcoal usage is heavier in these states. Due to supply and price fluctuations, kerosene is increasingly becoming inconvenient and costly leading some kerosene users to switch to LPG. LPG is perceived as being more expensive and a "rich man's fuel" due to its high upfront cost. Safety concerns regarding LPG exist but similar concerns regarding kerosene have not impeded adoption. LPG penetration is limited to higher income groups in urban areas. A small number of homes supplement fuel with electric hot plates, however low power availability limits their usage. **The higher long-term cost of purchasing biomass and the inconvenience associated with kerosene lowers the barrier for clean fuels. A cookstove program should consider a base of the pyramid modern fuel solution.**

Methanol potential in Nigeria: There is unique potential to utilize flared natural gas to create a methanol cooking solution for Nigeria, simultaneously reducing pollution from both gas flaring and cooking. Natural gas which is currently flared and wasted can instead be converted into a clean burning methanol cooking fuel. In 2007, 150 households participated in a methanol cookstove pilot study conducted by Project Gaia**.** The stove and its methanol fuel were accepted by almost all the respondents that participated in the study. Statoil is investigating the potential to divert flared gas into methanol production, developing a business plan, and looking for a partner. Safety is an important concern as methanol is highly toxic. High upfront investment in plants (methanol, resin, biodiesel, etc.) would be required. Considerable investment in the distribution network would be required as leveraging existing kerosene distribution will expose methanol to issues similar to kerosene. Although requiring a significant upfront investment and government support, methanol has the potential to supply clean fuel, grow local industry and generate employment.

Other Renewable Energy Sources e.g. biogas: There is an increased interest in developing the renewable energy and biofuels sector in Nigeria; the Government has launched several renewable energy programs. Current renewable energy programs are mainly related to biogas with pilots operated by the Government. Biogas solutions may not be suitable for national implementation, and therefore may remain as a

community specific solution. Technical expertise and program implementation support is required to scale up existing biogas programs. The establishment of renewable energy villages could be used to promote sustainable renewable cooking fuels using agricultural byproducts. Previous projects showed that solar cookstoves are not viable due to low consumer acceptability.

2.1.2.1 Barriers and Gaps Analysis

Based on the above analysis of the energy situation and the current situation in industries, institutions and households that are consuming wood as fuel, the increasing trend of fuel consumption is obvious. In order to analyze the underlying causes of this problem, a stakeholders' consultation was conducted in Abuja on 10 June 2015 with 40 participants. All of the main stakeholders were consulted several times during the PPG process to ensure that their priorities and experiences within the context of Nigeria were captured and reflected in the design of the project. The participants generally agreed that the main problem faced by Nigeria regarding its fuel wood is the unsustainable production and utilization of biomass resources.

All in all, the Government of Nigeria, its development partners, public and private sector recognize the need to balance the supply and demand of fuelwood and the importance and benefits of sustainable fuel wood management both from the perspective of climate change mitigation, as well as the local socio-economic development standpoint; thus a number of important initiatives and programs have been implemented and are on-going to address deforestation and desertification and their multitude root causes. However, as far as fuelwood is concerned, the baseline projects still fall short of providing a comprehensive and holistic approach to sustainable fuel wood management in Nigeria thus leaving some of the main barriers to sustainable energy and underlying causes of deforestation in the South and land degradation in the North unaddressed.

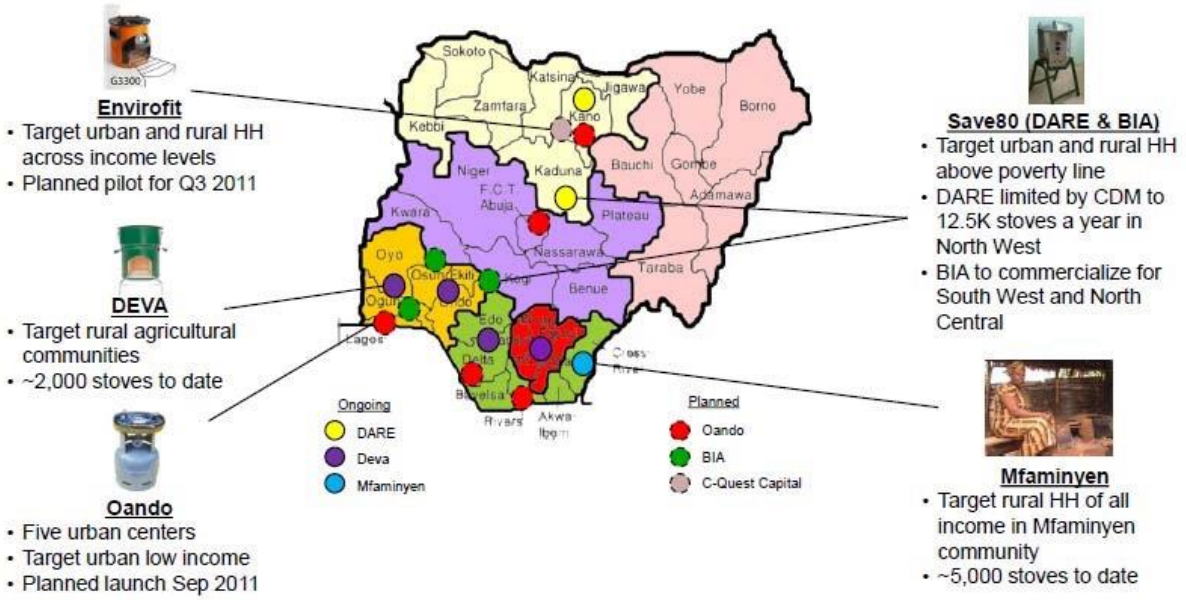
The sustainable energy sub- sector is plagued by a lack of coordination and integration between policies and projects addressing sustainability of fuelwood production and consumption at all levels from local to national. Despite obvious linkages and synergies, the two sides of fuelwood problem, demand and supply, are being addressed in isolation. There exist two types of projects and programs interventions in the country have been largely running in parallel with little overlap programmatically and geographically, namely those dealing with a) Sustainable forest management (supply side); and b) Clean energy access (demand side). However, the only long-lasting solution to this problem is one where a) the importance and benefits, including economic ones, of sustainable forest management and restoration of

degraded land are fully realized by local community and b) affordable and sustainable alternatives are available to meet household energy needs. Piece-meal programs that only address one aspect of the demand-supply equation cannot be effective nor sustainable in addressing the root causes of the problem – and this is the cornerstone of the design of the SFM Project. In summary, the significant barriers to sustainable fuelwood management that the SFM Project is aiming to overcome include:

a) **Under-developed domestic supply chain:** As illustrated in Figure 4 below, there has been a number of domestic clean cook stove manufacturers in Nigeria, but local production capacities remain limited, often do not provide adequate quality and quantity of the products, and rely on expensive imports, which drive costs up. Consequently, do-it-yourself (DIY) stoves are the most popular solutions, while penetration of efficient second generation cookstoves is less than 0.1% of the market. Pilot projects are very limited in scale or not affordable to average consumers (such as SAVE80 that can cost up to USD 100).

   Scaling up and a strong business case are needed to make local manufacturing viable and capable of delivering robust and affordable stove solutions for the base of the pyramid (BOP), e.g. developing clay stoves in the South where there are rich clay resources whilst developing metal stoves in the North where clay is scarce.

Figure 4: Existing Clean Cook Stove Producers in Nigeria (GACC, 2011)



b) **Affordability and access to consumer and start up financing:** In the absence of affordable stove solutions for the BOP, modern and efficient fuel stoves are priced significantly higher than available traditional solutions or kerosene stoves resulting in an extremely low penetration rate for improved stoves. Despite three registered Programmatic CDM Stove programs, carbon finance has proven its limited effectiveness in improving the affordability of the final product: even with a carbon subsidy, SAVE80 is 3 times more expensive than traditional stoves and under the current circumstances, the prospects of attracting additional finance through carbon markets do not look promising. Hence, new financial sources and models are needed to address the affordability barrier, improve access to consumer financing and thus ensure wider replication and higher penetration rates of EE cook stoves.

   Those few efficient stoves which are available on the market in Cross River, Delta and Kaduna (mainly imported from China and elsewhere) are priced several times higher than traditional stoves: while the cost of a traditional stove is about USD 2, cleaner and more efficient products, like StoveTec cost USD 20 and above. Many of the micro-finance institutions operating in the three pilot states are not marketing or offering financial products or services for the production or purchase of clean stove/kilns. Component 4 of the project will address the affordability barrier by facilitating access to consumer and start up finance and partnerships with MFIs.

c) **Low awareness and penetration rate of alternative energy solutions among rural households in Cross River, Kaduna and Delta:** Less than 0.1% of households in CRS and Delta State use improved cookstoves. This is an indication of extremely low awareness and market demand for efficient cook stoves and other sustainable energy alternatives for domestic fuelwood use. Apart from the financial/affordability barrier, the main barrier to a higher penetration rate of improved stoves is the prevailing perceptions and attitudes of rural households, especially women, towards new technologies. People are reluctant to change their traditional cooking practices, have few technical and business skills and lack understanding of how modern technologies work (even in its simplest design). Also, the recognition of the linkages between deforestation and its negative consequences on the one hand and domestic energy use on the other is often missing. Component 2 of the project will address this barrier through awareness and training activities, as well as targeted investment in pilot communities.

d) **Limited manufacturing capacity and supply of efficient and affordable cook stoves in Cross River, Kaduna and Delta State:** There is only one efficient cookstove program in CSR, the Ekwuk stove, designed and promoted by the Mfaminyen Conservation Society. However, its uptake remains limited. Even in the targeted communities only 4,500 products have been built. There is no information about the Ekwuk stove design available in other CSR areas, nor are there any other efforts or programs underway to promote more efficient cook stoves manufactured elsewhere. To facilitate wider replication of do-it-yourself stove design like Ekwuk or domestic manufacturing of efficient stoves, assistance has to be provided to local communities and enterprises to jump start the market, ensure quality and build a supply chain. But there is a need to conduct a detailed market segmentation study to ensure that the design of the proposed stove meets the needs of the household. Component 3 of the project will seek to address this barrier.

e) **Lack of opportunity for private sector participation:** The private sector is the main engine of job creation and the source of nearly nine out of ten jobs in the world. Accordingly, Nigeria's job creation strategy needs to be embedded within the broader strategy, as articulated in the Transformation Agenda, to promote private sector growth and entrepreneurship. However, the existing legal framework suffers from poor enforcement. In addition, there is ineffective coordination among ministries regulating the private sector and between the Government and the private sector; and many ministries have limited capacity to implement reforms. Despite those challenges, Nigeria has significant private sector potential, with investment opportunities in the agribusiness sector. If these opportunities are realized, they will provide substantial sources of job creation and diversified growth.

2.1.2.2 SFM Project Baselines

There are also a number of plans, initiatives and projects that are under implementation to balance the supply and demand of fuelwood and to meet the fuelwood and stove targets that were set through the various established relevant plans, policies and programs. The proposed project builds on the on-going and planned initiatives that are in line with the Renewable Energy Master Plan for the promotion of energy efficiency and energy conservation measures in the end-use sectors and for the promotion of RE (see table 6). These current initiatives are expected to generate fuelwood savings and consequently bring about GHG emissions reduction, and will contribute to the realization of the targets set by, among others, the RE Master Plan.

Table 6: Baseline of Related Activities/Projects by partners

On-going & planned initiatives that are in line with the Renewable Energy Master Plan	Co-finance Budget (USD)
Component 1: Sustainable Fuel Wood Supply. **a. UN REDD+ Readiness Programme and Community based REDD+ Country Plan for Nigeria:** The UN-REDD Readiness Program for Nigeria seeks to create the REDD+ mechanism using Cross River State (CRS) as a demonstration model and is structured in four outcomes, two at the Federal level and two focusing on Cross River State, as follows: i) Improved institutional and technical capacity at the national level (Federal); ii) Framework for REDD+ expansion across Nigeria prepared (Federal); ii) Institutional and technical capacity for REDD+ in CRS strengthened and iv) REDD+ readiness demonstrated in CRS. Some REDD+ sensitization activities have already been carried out in Delta State. The Community based REDD+ Country Plan for Nigeria will support Outputs 5.4, 5.5 and 5.6 of the former Component 5 presented at the PIF stage. ***This GEF-funded project will support Outcome 4 to train and develop certified stove producers to produce clean stoves for sale as an inclusive business among the pilot communities as well as to develop a community managed multifunctional platform in Cross River and Delta State.*** **b. EU's Energizing Access to Sustainable Energy in Katsina State (2014 to 2018):** This is a four-years intervention funded by the European Union to improve the fuel wood balance in Katsina state. The programme is aimed at sustainably improving the fuel-wood balance and resilience of livelihoods of rural households in 7 Local Government Authorities in Katsina state by increasing wood supply through farmer managed natural regeneration whilst reducing fuel wood demand through dissemination and use of fire wood efficient stoves. With counterpart contributions from Oxfam Novib and the International Center for Energy, Environment and Development (ICEED) as Co-applicant, the programme has a duration spanning 4 years, from the 10th of September 2014 to the 9th of September 2018 and will be implemented by both organizations, working with local partners, target beneficiaries and communities. ***This GEF funded project will partner with the EU project to transfer the farmer managed natural regeneration best practices from Katsina to farmers in Kaduna state.***	USD 4 million (as grant from 2013-2017)
Component 2: Sustainable Fuel Wood Consumption. **National Clean Cooking Scheme (NCCS), Federal Ministry of Environment:** There is also an array of Government and donor-supported activities promoting a transition towards more efficient and alternative solutions for household energy needs (i.e. fuel wood demand side), such as the National Clean Cooking Scheme of the Federal Ministry of Environment and its Rural Women Energy security Initiative aimed specifically at addressing the needs of rural women for sustainable and healthy cooking solutions. Under NCCS, the Federal Government supports retrofitting of kitchens in public schools, hospitals and hotels across the country with improved cook stoves and LPG. The National Clean Cooking Scheme is an umbrella longer term initiative which aims at coordinating all clean cooking energy in the country towards achieving the Government's goal of 20 million households with improved cooking energy technologies by 2020. This initiative will support Output 5.1 of the former Component 5 to phase out traditional cookstoves. **Community Research and Development Center (CREDC):** Several local NGOs and community-based organizations, such as the Community Research and Development Center (CREDC) under the Sustainable Forest Management Project, are also engaged in awareness	Federal Ministry of Environment: USD 2.2 million (grant from 2015 to 2019) FMOE: USD 1.9 million (in-kind from 2015 to 2019)

raising and capacity building on the local level, sharing knowledge about efficient cooking technologies and the importance of forest protection. In CRS, the Federal Government initiated a pilot biogas project in order to diminish pressure on forest resources from domestic energy use, but no evidence exists yet regarding its implementation. **The Nigerian Energy Support Programme (NESP):** NESP funded by the European Union and the German Government and implemented by GIZ, in close coordination with its Federal and selected state (Cross River, Niger, Ogun, Plateau and Sokoto) partners, aims inter alia at increasing the number of rural dwellers with access to improved energy services and products. NESP will support a 15-month programme that facilitates access to at least two improved agro processing technologies for up to fifteen groups and/or cooperatives of rural agro-processor groups/cooperatives in up to three of the five NESP selected states (e.g. up to 5 groups/cooperatives per State) and on up to three agro-products – rice, cassava and/or palm oil. Given their key role in the clean cooking energy sector, the intervention will pay special attention to women. Initially proposed primary equipment promoted by NESP activities will include: institutional improved biomass or LPG stoves and improved biomass or LPG roasters. Additional equipment that may be supported include: Manual liquid or oil presses and Solar dryers and solar dehydrators. This initiative will support Outputs 5.1 and 5.2 of the former Component 5. ***This GEF-funded project will support all the above initiatives to train and develop certified stove producers to raise awareness and produce stoves for sale to the pilot communities as an inclusive business.***	
Component 3: Domestic Industry for Clean Cooking Solutions. Several fuel-efficient solutions (commonly region or segment focused) are already in or entering the market, with competition emerging in several states, but their penetration and market share remain extremely limited: less than 0.1% of all Nigerian households use improved stoves (See Figure C3 in Annex C). **a. ICEED:** To support domestic industry, ICEED in partnership with the Energy Commission of Nigeria supports the establishment of the National Clean Cookstoves Development and Testing Laboratory at the University of Nigeria (Nsukka, Enugu State); this partnership helps develop technical standards for stoves, provides testing and certification services related to stove technical quality, indoor air pollution, and energy efficiency, as well as supports local MSMEs in improving the quality of their products. These initiatives support Outputs 5.1, 5.2 and 5.3 as proposed under the former Component 5. Given the limited GEF resources and to avoid duplications, national stakeholders recommended that there is no need for this SFM project to support Component 5. **b. Nigerian Developmental Association for Renewable Energies (DARE):** DARE and the German non-governmental organisation Lernen-Helfen-Leben e.V. (LHL e.V.) are jointly implementing a CDM project entitled "Efficient Fuel Wood Stoves for Nigeria" whereby the revenues from the CER sales are used to subsidize the sales of highly efficient cook stoves SAVE80 in the Northern regions of Nigeria[5]. The project is expected to support distribution of up to 13,000 SAVE80 systems and thus prevent the emission of 300,000 tCO_{2e} until 2019. Nevertheless, the project is an important part of the baseline activity because it proves the viability of the business and financial model for efficient cook stoves in Nigeria (provided that the carbon benefits of such a project are monetized). Other PoA developers are C-Quest Capital. This initiative will support Output 5.1 to phase out traditional cookstove as proposed under the former Component 5. **c. SME Fund (SME):** The SME Fund seeks to provide low cost, clean and safe cooking energy for households at the bottom of the economic pyramid through their 2G proprietary	ICEED: USD 2 million (as grant from 2015 to 2019) DARE: USD 1 million (as grant from 2015 to 2019) SME: USD 2 million (as grant from 2015 to 2019)

[5] *https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/7R1B09HSJV3FKIZYCA4D6XQOETP5GN/view*

Cellulose ethanol bio process. The organisation has successfully launched one of the largest and fastest growing clean cooking and lighting programmes in Africa. This was accomplished through a vertically integrated business model that dramatically reduces costs in both manufacturing and distribution, by creatively using social marketing, thereby economically empowering independent distributors. The SME Fund has reached over 230,000 households with their ethanol stove and has sold over 2 million litres of gel. With the growing demand, the SME Fund is looking to have 1 micro distillery and 2 gel plants at the community level to meet the demands of communities and raise awareness of their ethanol stove. **d. Mfaminyen Conservation Society:** In CRS specifically, the Mfaminyen Conservation Society supported the indigenous design of an improved cookstove (Ekwuk) and its dissemination across the states: over 4,500 products were sold. The CRS Government committed 100,000 USD to further scale up its production. These efforts, however, fall short of the potential and need of the region. ***The GEF-funded project will support all the above initiatives to scale up clean fuelwood and ethanol stoves among the pilot communities.***	
Component 4: Financing for Clean Cooking Solutions. **a. Fortis MFI (FMFB):** Nigeria has a relatively large and well-developed micro-finance sector with a cumulative loan portfolio of over USD 350 mln. Some MFIs have recently started offering structured loan products to households for energy access solutions, such as improved cook stoves, LPGs, solar PV systems, etc. However, the demand is low and so is the volume of transactions in the market segment. In CRS, there are 14 registered MFIs, but no visible involvement in financing improved energy access. ***The GEF-funded project will support and train MFI staff to design, develop, test and improve value chain financing products and services to scale up sustainable fuelwood and clean stoves among the pilot communities.***	Fortis MFI: USD 3 million (as grant from 2015 to 2019
Total	**USD 16,400,000**

2.2 Project Description

The full-sized project (FSP) titled "Sustainable Fuelwood Management in Nigeria which is being implemented through the Energy Commission of Nigeria (ECN), started on February 7, 2017 and is in its third year of implementation.

The Sustainable Fuelwood Management (SFM) project in Nigeria was designed to address the problem of deforestation in Nigeria. Given that, over half of Nigeria's estimated 170 million inhabitants live below the poverty line, with over 70% of the population still relying on biomass for fuelwood. Rapid deforestation is a major concern with over half of the country's primary forests cut down in the last 10 years, exacerbated by rapid population growth of 2.5%. The unsustainable production and utilization of biomass resources represents one of the key drivers of deforestation and land degradation in Nigeria. In response to this challenge, the Government of Nigeria has secured funding from the Global Environment Facility (GEF) for a sustainable fuelwood management project. The project, which began actual implementation in May 2017, has a GEF grant of $4,410,000 and co-financing of $16,400,000.

The objective of the project is to have a **sustainable fuelwood management in Nigeria that secures multiple environmental and socio-economic benefits, including reduced GHG emission from wood fuel consumption, enhanced carbon storage and sequestration, as well as improved rural livelihoods and opportunities for local development**.

The **Project Objective** will be achieved through i) *supply side management* (the production and procurement of certified fuelwood from sustainably sourced feedstock from; a) woodlands outside the protected forests in Cross River and Delta State in the South and b) from farmer-managed woodlots in Kaduna State in the North and ii) *demand side management* through the promotion of improved stoves/kilns in the domestic sub-sector as an inclusive business to reduce fuelwood demand, improve health and reduce greenhouse gas emissions.

To achieve this, the project has been divided into four main components:

- Component 1: Sustainable Fuelwood Supply
- Component 2: Fuelwood Demand Management
- Component 3: Domestic Industry for Clean Cook Stoves and Other Clean Energy Alternatives
- Component 4: Financial Models for Sustainable Fuelwood Management

The following outcomes are expected from the SFM project:

5. ***Expected outcome of component 1:*** **Models for sustainable fuelwood production demonstrated in:**

   c) At least 10 communities in Cross River and Delta State leading to:
      - 50,000 ha of forestlands under improved multifunctional forest management;
      - Forest Management Committees (FMCs) created/strengthened in SFM

   d) At least 10 communities in Kaduna State leading to:
      - 3,003 ha of degraded land restored with Sustainable Land Management measures like woodlots;
      - SLM Management Committee created/strengthened in SLM

6. Expected outcome of component 2:

d) Improved awareness and acceptance of alternative (renewable and more efficient) energy technologies for domestic, institutional and industrial sub-sectors in Cross River, Delta and Kaduna States.

e) Increased penetration of improved/alternative energy technologies for domestic needs in targeted communities by at least 20% (BAU: 0.1%);

f) Avoided emissions of 40,000 t CO_2 eq/year from combustion of un-sustainable biomass in inefficient cook stoves/kilns (replaced by more efficient or other alternatives)

7. Expected outcome of component 3:

c) Improved efficiency, quality and affordability of domestically manufactured cooking/heating appliances for domestic, institutional and industrial sub-sectors.

d) Strengthened domestic supply chain for EE/RE cooking and heating appliances

8. ***Expected outcome of component 4:***

d) Consumer financing model for EE cook stove/kiln successfully operates.

e) Sales of efficient cook stoves/kilns increased by at least 20% in Cross River, Delta and Kaduna State.

f) Investment in sustainable forest management in Cross River and Delta State increased

The SFM project duration is 5 years starting from Feb 7, 2017 and ending Feb 6 2022 with an overall GEF budget of US $ 4,410,000 and co-financed by UNDP US$300,000, National Government (in –kind) 1,900,000, National Government (Grant) US$2,200,000, MFBs/MFIs US$3,000,000, UNREDD+ US$ 4,000,000, SME US$ 2,000,000, ICEED US$2,000,000, DARE US$1,000,000 total budget US$ 20,810,000.

The project implementation has been following the UNDP's national implementation modality (NIM), according to the Standard Basic Assistance Agreement (SBAA)

between UNDP and the Nigerian Government and the UNDP Country Programme Framework.

The Implementing Partner for this project is the Energy Commission of Nigeria with UNDP Country office support. The Implementing Partner is responsible and accountable for managing the project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of resources.

3.0 FINDINGS

The key findings of the MTR did crystallise from a thorough assessment of both qualitative and quantitative performance of the SFM Project along the project phases or building blocks (Strategy, Progress towards Results [PTR], Implementation and Adaptive Management and the eventually Sustainability of the Project). The Key Findings were also illuminated by the Project's essential performance characteristics defined by the principles or pillars of project, these are; Relevance, Effectiveness, Efficiency, Impact and Sustainability [REEIS]. In essence, SUSTAINABILITY was evaluated and assessed as both a BUILDING BLOCK and a PILLAR of the SFM Project. More on findings based on REEIS criteria will be discussed in section 3.2.1 "Progress towards outcomes analysis" and a few field observations and comments will be highlighted in section 3.2.1.2 "Field Observations and Comments". The MTR Team believes that this approach brings more clarity in terms of outlined findings based on evaluation of key project phases or "building blocks".

3.1 Project Strategy

3.1.1 Project Design

The MTR team found out that the SFM Project is well aligned with various relevant national, regional and international policies as well as agreements / aspirations.

As per the alignment with national policy framework, the MTR Team found out the Project is in consistent with the Nigeria Vision 2020 and Transformation Agenda (2013-2018)**.** The Federal Government of Nigeria (FGN) has put forward an ambitious vision for the country's economic development by 2020: Nigeria Vision 20: 2020 (FGN 2010). It is not only a road map for economic growth, but is also intended to be the foundation of future long-term sustainable development by giving equal value to these additional three pillars which the Project articulates well in the design:

i) **Institutional:** to promote responsible leadership, transparency, accountability, rule of law, and security of lives and property;
ii) **Social:** to improve the nation's prospects for achieving the Sustainable Development Goals (SDGs) and creating employment in a sustainable manner; and
iii) **Environmental:** to halt environmental degradation and promote renewable energy and climate change mitigation and adaptation.

In regard to alignment with regional and international agreement and aspirations, the MTR team found out that the Project is well aligned with the GEF-5 Climate change mitigation strategy to remove the barriers to access to affordable alternative energy by introducing the necessary legal, institutional and regulatory frameworks for scaling up of bioenergy solutions. The SFM Project is designed to remove the technical barriers by providing the Government agencies, manufacturers and importers with technical assistance and a certified independent testing facility to measure the energy consumption of end-use appliances. The Project also addresses the informational barriers with a component to carry out outreach programs designed to sensitize the Nigerian populace on bioenergy and energy efficiency concepts and its potential for socio-economic development.

Furthermore, in regard to Projects regional alignment and harmonisation, the MTR team considered that the fifteen member states of the Economic Community of West African States (ECOWAS) have expressed the need to mainstream renewable energy and energy efficiency into their national policies. Based on the above, ECOWAS Renewable Energy Policy (EREP) and the ECOWAS Energy Efficiency Policy (EEEP) were adopted by the ECOWAS Council of Ministers and the Authority of Heads of State and Government in 2013. The vision of the EREP and the EEEP is to secure an increasing and comprehensive share of the Member States' energy supplies and services from timely, reliable, sufficient, efficient, cost-effective uses of renewable energy sources enabling universal access to electricity by 2030 and a more sustainable, efficient and safe provision of domestic energy services for cooking. ECOWAS' EREP and EEEP recognize wood fuels (firewood and charcoal), which are used for domestic cooking purposes and commercial applications, as one of the renewable energy options that are not utilized efficiently but have the potential for development in the ECOWAS region. In the region, woodfuels represent the bulk of final energy consumption, reaching up to 70-85 % in some countries. Within these policy frameworks and specifically under the programme for Supporting Energy Efficiency Activities in West Africa, a clean cooking initiative was launched in October 2012. The West African Clean Cooking Alliance (WACCA) aims to ensure that the entire population in the region has access to clean, safe, efficient and affordable cooking fuels and devices by 2030. WACCA will explore both the supply and demand side of the cooking chain and introduce efficiency where necessary to improve the fuel supply and demand characteristics for better access and improved living conditions.

Having considered the provision of ECOWAS Renewable Energy Policy (EREP) and the ECOWAS Energy Efficiency Policy (EEEP) and WACCA objectives and aspirations, it is the opinion of the MTR team the SFM Project design is well formulated to assisting the country in increasing and promoting access to clean, safe,

efficient and affordable cooking fuels and devices. The MTR team also found out that the SFM Project has been partnering with WACCA and NACC to mainstream the demand side management of biomass and to develop regional and national harmonization on standards and labels for improved cookstoves and charcoal kilns.

With regard to country ownership and eligibility of the SFM Project, the MTR team found out that the Federal Government of Nigeria signed the UNFCCC convention on June 13th 1992 and ratified it in August 1994. Nigeria ratified the Kyoto Protocol on the 10th of December 2004. Furthermore, it was ascertained that the current project was designed after extensive consultation with key public and private sector stakeholders, thus there has been extensive inputs from the key relevant agencies of government such as the NCCS, Federal Ministry of Environment, Forestry Commissions, ECN, SON, NACC, NGOs (ICEED, CREDC, DARE, SME Fund) and financial institution (e.g. Fortis MFI). As state above, the project fits into the government's Vision 20:2020 to replace 50% of firewood consumption for cooking by scaling up and replicating alternative clean bioenergy and reducing reliance on unsustainable firewood by promoting bioenergy standards and best practices. The SFM project is also well aligned with the measures highlighted in the INDC submitted by the Government of Nigeria to UNFCCC on 28 November 2015 to promote energy efficiency by 2% per year (30% by 2030) and promote climate smart agriculture and reforestation.

On holistic overview, the design of the project has hence been found to be an essential input / effort towards reduce adverse effects of climate change in Nigeria, the region and world at large.

Table 7 below highlights evaluation findings regarding the SFM Project Design.

Table 7: A summary of the findings on the SFM Project design

Design Aspect	*Findings*
Problem addressed by SFM Project	To great extent the SFM Project is aimed at addressing the following barriers: a) Under-developed domestic supply chain b) Low affordability and access to consumer and start up financing c) Low awareness and penetration rate of alternative energy solutions among rural households in Cross River, Kaduna and Delta states d) Limited manufacturing capacity and supply of efficient and affordable cook stoves in Cross River, Kaduna and Delta State e) Lack of opportunity for private sector participation Once the above barriers are addressed by the SFM Project, it is expected that there will be a balance between the demand and supply side of the sustainable fuelwood management system (SFMS) in Nigeria, with a specific geographic focus on Cross River, Delta and Kaduna States. The SFM Project's objective is the sustainable fuel wood production and consumption to secure the flow of multiple environmental benefits, including carbon storage and sequestration, and ensure that basic human development needs are met without compromising ecosystem ability to provide global environmental services. Undeniably, the project is designed to comprehensively address one of the major causes of deforestation in Cross River and Delta State and land degradation and desertification in Kaduna State, specifically the unsustainable use of non-renewable fuel wood in rural and peri-urban areas. To protect and secure forest and fragile land resources to meet local needs, the Project aims first to partner with the UN-REDD programme in order to support national and state-level efforts in CRS and Delta through sustainable forest management and secondly to collaborate with Great Green Wall program to restore degraded land in Kaduna through sustainable land management to develop agroforestry woodlots. Thirdly, the Project is endeavouring in working with national and international partners, value chain actors, technology providers, private sector, financial organizations, and local communities to identifying and promoting a set of alternative clean energy solutions to reduce their demand for fuelwood. The geographic focus of the SFM Project in Cross River, Delta and Kaduna states due to the following reasons: a) The State Governments of CRS, Delta and Kaduna are at the forefront of the climate change, forest and land conservation agenda in Nigeria, e.g. CRS has formulated its low-carbon vision for the State: "Within 10 years, Cross River State will have 1 million hectares of forest land managed for climate change friendly activities that will include carbon, non-timber forest products, sustainable tree crops and ecotourism. The aim is to create a new low carbon economy for the state based on the sustainable management of its forests."; b) UN-REDD+ selected CRS as a pilot to demonstrate its REDD+ readiness model; c) UN-REDD+ has targeted Delta State as the next state to replicate the success in Cross River and the chosen communities have already been sensitized on the REDD+ programme and its benefits;

	d) Unlike the frontline desertification state, the Great Green Wall program has also targeted Kaduna as a buffer state to prevent future desertification.

Design Aspect	*Findings*
Context and assumptions made.	The SFM Project has been placed in the best context of the country's push and motivations towards realising a truly transformative and innovative action / approach towards addressing the critical need of realising a sustainable supply and consumption of renewable energy and energy efficient products within the framework of sustainable fuelwood management system (SFMS). Most of the initiative that have been attempted have treated the aspect of supply, demand, technology and financial support as separate thematic interventions. The SFM Project design, and now implementation has not only integrated solutions for RE and EE technological development and growth with an effective financing model, but it has integrated two important components of an effective SFMS, these are the two sides of fuelwood problem, demand and supply. The demand and supply side are largely run in parallel with little overlap programmatically and geographically, that is those dealing with a) Sustainable forest management (supply side); and b) Clean energy access (demand side). The SFM Project, has hence brought along a lasting solution by integrating the four essentials of an effective SFMS and the benefits shall include economic ones, sustainable forest management and restoration of degraded land, affordable and sustainable energy alternatives will be available to meet household, institutional and industrial renewable energy needs. The assumption made for the project included: a) The SFM Project will have support, close collaboration and involvement of all fuelwood value chain market actors and enablers; these are government agencies, development partners, local communities, manufacturers and financial intermediaries (MFIs) among others; b) Demand for improved cook stoves will sustain due to implementation of the SFM regime in pilot communities; c) Supply of affordable cook stoves will be provided by local manufacturers; and d) Financing will be made available at affordable terms by partner e.g. MFIs & MFBs. The above assumptions have been proved to be true and empowering to the Project implementation because both beneficiaries and government representatives are highly motivated to see that the Project succeed.
Effectiveness of the route/s towards expected/intended results.	The Project Design was found to be effective because it takes the route of empowerment; both to the government agencies, the fuelwood supply chain main actors and to the consumers in tackling the challenges of access to clean, safe and affordable cookstove and fuels in order to alleviate their livelihood challenges, environment and climate change impacts. The empowerment interventions are also well inclined towards the most vulnerable (women, youth and children). The Project clearly integrates the four critical areas of intervention in addressing issues affecting fuelwood management, these are: (i) increasing supply of sustainable forestland and woodlot woodfuel products; (ii) increasing awareness and change of attitude for the acquisition of clean cookstoves by users and hence reduce the demand for woodfuel products through increased efficiency in the cleaning cooking and also to reduce carbon emission; iii) improvement of the clean cookstoves technology through enhance capability to their efficiency, quality, affordability, as well as the growth and development of the entire sustainable fuelwood

	management supply chain; and iv) establishment of a working financial model for the entire sustainable fuelwood value chain. It is also evident that lessons from other relevant projects were properly incorporated into the project design; however, the Project stakeholders should seek to learn more from the SFM Project implementation as well as from other ongoing related projects in the Nigeria like the Nigeria Erosion and Watershed Management Project (NEWMAP).
Alignment with the Country priorities and ownership of the Project.	The Project design also does align with the priorities outlined in the Country's National Adaptation Programme of Action (NAPA). Project is also consistent with the Nigeria Vision 2020 and Transformation Agenda (2013-2018). The Federal Government of Nigeria (FGN) has put forward an ambitious vision for the country's economic development by 2020: Nigeria Vision 20: 2020 (FGN 2010). Based on how well Project Design dovetails with the Government priorities as well as local beneficiaries' challenges and solutions, the Project Design offers a strong foundation for Project ownership and continuity.

Design Aspect	***Findings***
Decision-making processes.	The Project Design was also found to be effective in such a way that it offered a participatory, collaborative and bottom up approach to decision making. A part from the initial project conceptualization, management design and financial resource mobilization by Project sponsors (UNDP, GEF and Government of Nigeria), the process of decision making in terms of priority areas, identification of interventions as well as beneficiaries was inclusive. The Project Steering Committee (PSC) has been working seamlessly with the UNDP-GEF Project Focal Points / Project Management Unit (PMU) and ECN Office. In consultation with PSC, the PMU has been able to prepare work plans and budgets and there has been proper decision making at the National to the Local Levels. The Project communication and decision-making channels are working effectively. The PSC is supported by requisite technical committees (TCs) in making any technical decisions related to the Project.
Level of consideration of gender issues in the Project Design.	The SFM Project to great extent address critical domestic energy challenges that largely affect women and girl child. Health and economic impacts by use of scarce and unsafe cooking technology significantly affect women and girl child. The MTR team found out that women's participation, representation and access to resources and benefits was central focus of the Project design and hence aimed to provide access to improved household energy through sustainable fuelwood and clean stoves/kilns. The Project is expected to contribute towards social, economic governance transformations to empower women through specific activities like promotion of participatory and consultative planning for decision-making; improved women's capabilities through their involvement and their technical capabilities in setting up and maintaining multi-functional platforms, manufacturing of cookstoves, retailers and distributors / wholesalers of finished clean cookstoves, as well as consumers. Indeed, the MTR team found out that various women have become SFM role models and advance their influence in decision-making as well as control over natural resources planning and use. Fuel wood use for domestic purposes is synonymous with women in Nigeria. Although women may share the task of collecting fuel wood with men, they are entirely responsible for cooking in the households. The project will therefore reduce the time that women spend on wood collection and will contribute to improvement of health of women who spend a significant amount of time in the

	kitchen. Women will also regularly maintain the stoves/kilns to keep them in a condition that will ease their operation. Thus, the SFM project includes women as an important target group in its activities conducted at the community level. The SFM Project supply chain financing model is assisting women in establishing RE and EE related businesses which they have traditionally constrained by family and traditional obligations and usually lack of access to credit, technology and limited business skills. Additionally, the business development training carried out by the Project will have a specific focus on developing businesses run by women.
Design Aspect	***Findings***
Major areas of concern	There were no major areas of concern in the Project Design, except large target set for the establishment of forestlands in Delta and Cross River States (50,000hectares), however, this can be addressed through relevant stakeholders consultation and through Community Rural Appraisal (CRA) to establish new vistas of innovative approaches and availing of requisite human, financial and technological resources to realise the target within the current phase of SFM Project, or in the second phase if approved.

3.1.2 Results Framework/Log frame

The MTR team reviewed the appropriateness of the project result framework / log frame and had the following findings (see table 8 below):

Table 8: Provisions of the Result Framework and Suitability

Provisions of the Result Framework	**Findings on Suitability**
Indicators and targets	The 18 indicators and corresponding 23 targets are largely "SMART" towards realisation of the five major expected Project outcomes. By and large, the MTR team found out that the indicators and targets are properly targeted and are not too many. On the other hand, it seems the project design intended to have a snowballing effect – where by achievement of targets of one outcome / component would mean that the entire Project achievement capability has been enhanced in realising an effective sustainable fuelwood management. The MTR team found out that there are a few adjustments to the indicators and targets that will further enhance the appropriateness of the indicators and targets, these include: • Objectives outcome; that is realising sustainable fuelwood management in Nigeria which secures multiple environmental and socio-economic benefits, including reduced GHG emission from wood fuel consumption, enhanced carbon storage and sequestration, as well as improved rural livelihoods and opportunities for local development. The MTR team view is that, indicators of this outcome should focus more on measuring quantity or level achievement of actual positive social, cultural, economic and environmental impacts. The

	indicators that are current included in this objective / outcome are more on measuring the supply side outcome; which are well articulated in outcome 1 of component 1. • Indicator stated as ''Quantity of renewable fuelwood supplied by EOP'' for component 1 should actually be more specific by stating in a differentiated manner as follows; (i) Hectares of renewable new forestland fuelwood supplied by EOP'' and (ii) Hectares of renewable new woodlot fuelwood supplied by EOP'' to capture the targets in hectarage for new forestlands and woodlots established. • Indicator stated as ''Number of women sensitized and trained by EOP'' for component 2 should include both gender as well as youth by stating as follows; Number of women, men and youth sensitized and trained by EOP. • Indicator stated as ''Number of domestic cookstoves produced and distributed for BOP by EOP'' for component 2 should be state as follows; Number of domestic cookstoves produced, distributed and sold to consumers at the BOP by EOP.
Appropriateness and clarity of Project objectives and outcomes	The Project Objective is to mainstream renewable energy and energy efficient cookstoves and fuels into the focused states cooking and heating sub-sector through the establishment of an effective sustainable fuelwood management systems that would eventually secures multiple environmental and socio-economic benefits, including reduced GHG emission from wood fuel consumption, enhanced carbon storage and sequestration, as well as improved rural livelihoods and opportunities for local development. Based on the above, first, the objective of the Project is clear and straight forward, in that the SFM Project is aiming to transform the existing fuelwood supply chain to more sustainable and resilient by addressing various barriers but most importantly to enhancing and developing four main capabilities / elements of a sustainable fuelwood management system (SFMS). These elements / capabilities are: supply capability, demand reduction / efficiency improvement capability, technological growth and development, and finally financial capability. The overall finding on the Project's objective and outcomes / components, is that they are clear, practical, and are feasible and achievable within the Project 5 years' time frame.
Beneficial development effects that should be included in the project results framework.	The SFM Project has created a good environment for increased social cohesion and peace, skills in project / business management, increased private and public organization governance, improved institutional partnerships and collaborations, improved family incomes / livelihoods, health and well-being in the community as well as climate change adaptation / mitigation and environmental management technological and skill transfers. All these beneficial outcomes, among other sustainable development goals (SDGs) related outcomes can be measured by introducing new indicators and target for the Project monitoring and evaluation framework.

Effectiveness of monitoring development and gender aspects of the project.	The MTR team found out that most of the Projects identified indicators and targets are well disaggregated in terms of gender and there are clear targets to measure development towards women development empowerment.

3.2 Progress towards Results

The MTR team reviewed the Project log-frame indicators against progress made towards the end-of-project targets using the Progress Towards Results Matrix and following the Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects; colour coded the progress in a "traffic light colours system" based on the level of progress achieved; then assigned a rating on progress for each outcome (based on the 6 point Rating Scale: HS, S, MS, MU, U, HU); and made recommendations from the areas marked as "Not on target to be achieved" (red). See figure 5 below for illustration. More detailed analysis in section 3.2.1 "Progress towards Outcomes Analysis "

Figure 5: Indicator Assessment Key

Green= Achieved	Yellow= On target to be achieved	Red= Not on target to be achieved

However, before making the general project performance rating, the MTR team made a thorough assessment of the data and information gathered from interview, focus group discussion and filed visits. The information given by various beneficiaries and stakeholders was well assessed and ascertained by the MTR team by way of cross-referencing the information and data given from various sources (among them the PIR, GEF Tracking Tools, ProDoc, PIF, Government Reports and Project Initial Situation Assessment Reports). The MTR team believes this will give more impetus to results rating and proper justification for the specific rating. In additional to gathering and ascertaining data and information (both primary and secondary sources), the MTR team did carry out as an analysis of field survey that sought to measure the beneficiaries and stakeholders opinion of the project performance on the five key aspects ([i]Relevance/Strategy/Design of the project, [ii]Effectiveness, [iii]Efficiency, [iv]Impact and [v]Sustainability; in short - REEIS). The Consultants measured the participants opinion on a scale of 1 -6 and which aligned with the 6 point/marks rating scale (Highly Satisfactory [6], Satisfactory [5], Moderately Satisfactory [4], Moderately Unsatisfactory [3], Unsatisfactory [2] and Highly Unsatisfactory [1]. The REEIS analysis also gave indications of the Project's Strategy, Progress Towards Results, Implementation and Adaptive Management as well as Project's Sustainability in short

'' SRMS'. After this section of detailed analysis, the MTR team presents the entire project rating and then after that, the MTR team does highlight some of the critical observations he made in the field in section 3.2.1.2 "Field Observations and Comments". This is believed to bring out the complete picture of the project midterm performance and progress towards end of project expected results.

As stated, in addition to analysing the level of achievement of indicators and outcomes (Progress towards Results) for the SFM Project, the MTR team did carryout a quick survey through key informant interview and assessed the perception of the beneficiaries and representatives in the Project Steering Committee. Their perception of the Project's Relevance, Effectiveness, Efficiency, Impact and Sustainability (REEIS) showed the following outcomes as shown in table 9 (shows average score / marks for each aspect measured, and hence assisted in the rating of the Project performance later. The REEIS analysis also gave indications of the rating of the Project's Strategy, Progress Towards Results, Implementation and Adaptive Management as well as Project's Sustainability - SRMS (see table 10).

Table 9: REEIS and SRMS analysis for SFM Project in Nigeria

Aspect	***Average Mark for REEIS***	***Average Mark for SRMS***	***Aspect***
Relevance /Strategy	5.42	*5.42*	Strategy
Effectiveness (E_1)	4.67	*4.97*	Progress Towards Results (average of $E_{1+}E_{2+}I$)
Efficiency ($E_{2)}$	5.15	*4.91*	Implementation & Adaptive Management (average of $E_{1+}E_2$)
Impact (I)	5.09		
Sustainability (S)	5.15	*5.15*	Sustainability
Overall Project Average – Objective (O)	5.09		

Key:
SRMS = Strategy, Results, Management and Sustainability

Note: REEIS or SRMS aspect rated less than 5 marks and more than 4 Marks was rated as Moderately Satisfactory (MS), above 5 but not 6 marks was rated as Satisfactory(S) and at 6 marks it was rated as highly satisfactory (HS).

Table 10: Rating of Project in terms of SRMS Aspects

Aspect	**Rating**
Strategy	Satisfactory (S)
Progress Towards Results	Moderately Satisfactory (MS)
Implementation & Adaptive Management	Moderately Satisfactory (MS)
Sustainability	Satisfactory (S) / Likely (L)
Overall Project Average – Objective	SATISFACTORY (S)

From Tables 9 and 10 above, it is evident that no Project's aspect (REEIS and Project's Strategy, Progress Towards Results, Implementation and Adaptive Management as well as Project's Sustainability - SRMS) that was averagely rated as Moderately Unsatisfactory, Unsatisfactory or Highly Unsatisfactory. Most of the participants surveyed rated the Project's aspects as SATISFACTORY – which is the overall Project's rating by the MTR team. The survey's analytical results illustrated in table 9 and 10 hence further justify the achievement rating of the Project as outline in section 3.2.1.

3.2.1 Progress towards Outcomes Analysis

In order to analyse, assess and rate the progress towards results / outcomes the MTR team relied on the SFM Project define results framework in the ProDoc. To great extent, the results framework provided the basis for assessment and rating of the project performance. Where the MTR team did not essential rely on the results framework, it did try to define retrospectively, the intentions of the Project planners and implementers. Table 11 and 12 below do summarise the MTR team Projects performance assessment and rating.

Table 11: Project Strategy and Progress towards Results Ratings and Achievement Assessment Summary

Indicator Assessment Key

Green= Achieved	Yellow= On target to be achieved	Red= Not on target to be achieved

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Objective: Sustainable fuelwood management in Nigeria secures multiple environmental and socio-economic benefits, including reduced GHG emission from wood fuel consumption, enhanced carbon storage and sequestration, as well as improved rural livelihoods and opportunities for local development	Level / % of increased environmental services or values	Federal and State Governments Development Plans in 2016	not set or not applicable	Significance increase of the contribution of the SFM Project into environmental services and values	Even if there is no yet an assessment of the % of the increase into the SFM Project into the state or federal governments' environmental services increase, there are clear indication that, if all activities of the SFM Project are implemented, they will certainly result to significant environmental services increase / growth.	Satisfactory (S)	The measures so far undertaken to increase forestlands and woodlots cover, train and create capacity for various stakeholders in sustainable forest management, and increased uptake of renewable energy and energy efficient technologies do crystalize various environmental benefits at different levels in the following areas / aspects: -increased biodiversity -enhanced clean air and water in the focus states -Enhanced climate regulation for example reduced carbon emission from cooking and heating and potential carbon sequestration in the next 3 – years of the SFM Project. -Increased conservation of forest resources -Improved protection of endemic, rare and threatened species in the forest reserves. -Improved soil and landscape protection

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Objective: Sustainable fuelwood management in Nigeria secures multiple environmental and socio-economic benefits, including reduced GHG emission from wood fuel consumption, enhanced carbon storage and sequestration, as well as improved rural livelihoods and opportunities for local development	Level / % of increased economic services or values	Federal and State Governments Development Plans in 2016	not set or not applicable	Significance increase of the contribution of the SFM Project into economic services and values	Even if there is no yet an assessment of the % of the increase into the SFM Project into the state or federal governments' economic services increase, there are clear indication that, if all activities of the SFM Project are implemented, they will definitely result to significant economic services increase / growth.	Satisfactory (S)	There are various immediate, medium- and long-term economic benefits that are being or shall be realized in the lifecycle of the SFM Project. These benefits include: -Establishment of ecosystems where bees can inhabit to enable sustainable crop pollination and where feasible placement of beehives for honey collection. -provision of various renewable and efficient bio-energy resources for industrial, institutional and household cooking and heating needs. -Increased capacity to provisioning of adequate industrial and domestic clean water. -Potential increase in eco-tourism activities in states like CRS and Delta, among others -Increased areas for sustainable grazing based on proven systems like where government allow community to graze in a particular reserve planted with trees but after sometime, they leave the area to allow tropical secondary forests developed where the hitherto grazing have been abandoned. -Increased availability of economically important plants, seedling and fungi in the forestlands and woodlots. -Increased supply of wood products for economic gains. In actual sense, the interventions of the SFM Project will increase the share (% contribution) of the forest sector to gross domestic product (GDP) of Nigeria.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Objective: Sustainable fuelwood management in Nigeria secures multiple environmental and socio-economic benefits, including reduced GHG emission from wood fuel consumption, enhanced carbon storage and sequestration, as well as improved rural livelihoods and opportunities for local development	Level / % of increased socio-cultural services or values	Federal and State Governments Development Plans in 2016	not set or not applicable	Significance increase of the contribution of the SFM Project into socio-cultural services and values	Even if there is no yet an assessment of the % of the increase into the SFM Project into the state or federal governments' socio-cultural services increase, there are clear indication that, if all activities of the SFM Project are implemented, they will definitely result to significant socio-cultural services increase / growth.	Satisfactory (S)	Socio-cultural values are the central themes of Sustainable Forest Management (SFM) and in this regard, SFM Project has been designed to provide the following socio-cultural benefits: -Protect and promote the historic environment and cultural heritage, that is for example; management of historic environment sensitively, value the cultural history and meaning of forests, woodlands, trees and the historic environment, also recognizing the tourism potential of the historic environment, encouraging the development of living heritage and the arts in woodlands and encouragement in the use of Nigerian traditional construction techniques. -Other benefits include; educational, medicinal / health, recreational, spiritual and cultural wellbeing and creation of sustainable employment. Essentially, SFM Project will enable creation of functional communities, where people's perceptions and use of the Forests are similar or compatible and hence, forest managers and researchers can use such functional communities to develop better forest management plans and strategies.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 1: Sustainable Fuelwood Supply Management.	Indicator 1: Hectarage of forest protected and tons of CO2 sequestered by EOP.	REDD+ programme being implemented	not set or not applicable)	- 50,000 ha forest protected under REDD+ programme by EOP - 40,000 tCO2e sequestered	About 600 hectares of forest cover established in Cross River and Delta States	Moderately unsatisfactory (MU)	The targets adopted by SFM Project were based on the REDD+ baseline assessment for Cross River State. In the absence of enough community land to establish the forests, the set targets will be hard to achieve. There are however great efforts towards unlocking the availability of States' forest reserve land for the establishment of large sizes of forests and also to gain acceptance by community and private land owners to allocate land for the establishment of woodlots in Kaduna State, as well as other two states. Efforts include: Several consultative meetings have taken place at the State and community levels to sensitize and create awareness among fuelwood value chain actors. "Flagship" Annual High-Level Political Forum (HLPF)/Summit held in Cross River, Delta and Kaduna respectively in 2017, 2018 and 2019 to secure the buy-in of policy and decision makers in the three States. At the MTR, there was no established levels of carbon dioxide already sequestered

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 1: Sustainable Fuelwood Supply Management.	Hectarage of woodlot established, tons of fuelwood supplied and tCO2 avoided by EOP	No formal woodlot system established in Kaduna State	not set or not applicable	- By EOP, 3,003 ha woodlot farms established - 176,436 tons of renewable fuelwood supplied by EOP and 705,744 tons fuelwood supplied over lifetime - 168,468 tCO2e avoided over lifetime	About 300 hectares of woodlots established in Kaduna Estate points	Moderately Satisfactory (MS)	Even if the potential mid-term target of about achieving at least half of end of term hectarage of woodlots wasn't achieved, there are strong foundations laid out in terms of promoting acceptance and actual establishment of the woodlots. Some of the key initiatives undertaken include: -Baseline studies were carried out on the Assessment of Fuelwood Availability and Consumption Rate in Selected Rural Communities in Cross River, Delta and Kaduna States respectively. -In 2018 and 2019, gender balanced technical and business trainings on SFM best practices were carried out in the 3 states. About 270 men and women were trained each state 90 people. The Kaduna, Delta and Cross River State's Governments have committed some forest reserves for woodlot establishment. So far, about 3,500 hectares, 2,000 hectares and 1,000 hectares secured in Kaduna, Delta and Cross River States respectively, hence it is possible that the target of establishing about 3003 hectares of woodlots would be achieved before end of the SFM Project. Lay-out and line-up for at least 20 hectares in each State is completed. A baseline study report on the assessment of the technical and physical availability and utilization of deadwood and the elasticity of the supply in the 3 States has been prepared.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 1: Sustainable Fuelwood Supply Management.	Hectarage of woodlot established, tons of fuelwood supplied and tCO2 avoided by EOP	No formal woodlot system established in Kaduna State	not set or not applicable	- By EOP, 3,003 ha woodlot farms established - 176,436 tons of renewable fuelwood supplied by EOP and 705,744 tons fuelwood supplied over lifetime - 168,468 tCO2e avoided over lifetime	About 300 hectares of woodlots established in Kaduna Estate points	Moderately Satisfactory (MS)	A GIS map has been prepared for about 5,000 hectares of the secured lands in the 3 States. 5 tree nurseries were established in 2018 and 500,000 seedlings transplanted in 2019 in Cross River, Delta and Kaduna States. Several tree nurseries were establishment within the months September and October, 2019 – this period is the beginning of dry season in Nigeria). Resulting tree seedlings will be transplanted into woodlots in the rainy season of year 2020. Even if the at the mid-term it wasn't able to establish how much carbon emission has been avoided, it is apparent that woodlot development will reduce deforestation and hence combined with focus on technological cost effectiveness and technological efficiency will significantly reduce carbon emission to environment and people.
	Volume of tCO2 saved through adoption of renewable energy and energy efficient cooking and heating technology by EOP	No formal or fragmented stove supply chain.	not set or not applicable	- 595,165 tCO2e saved by EOP	To be determined	Satisfactory (S)	Clean cookstoves and fuels are being distributed. There are strong indicators that the clean cookstoves and fuels are gaining acceptance and consumers are buying the energy efficiency technology hence the target on reduction on carbon emission will be realized as projected. SFM Project revolving fund / Established Credit Facility for Clean Cookstoves for SMES has enabled enhanced uptake of the technology.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 1: Sustainable Fuelwood Supply Management.	No. of partners involved in the project towards reaching the project goal by EOP	- REDD+ programme being implemented	not set or not applicable	not set or not applicable)	Over 20 Partners have been involved, for example: -Cross River State Forestry Commission (CRSFC); - Federal Department of Forestry, Abuja - Key members of the Nigerian Alliance for Clean Cookstoves (NACC) - Various other agencies represented in the Project Steering Committee (PSC); - Association of Non-Bank Microfinance Institutions/Banks; - NGOs/CBOs among others	Satisfactory (S)	Indeed, over 30 partners have been involved, including civil society organizations, public agencies, indigenous peoples, the private sector, and microfinance institutions. More institutions, development partners, stakeholders and beneficiaries need to be brought on board in order to provide an enabling environment to identifying innovative ways of realizing hard targets of the project like attainment of 53000 hectares of woodlots and forestland combined. Increased partners will also bring on board various sources of funds for the SFM Project.
	Number of viable multifunctional platforms (MFPs) established in Cross River, Delta and Kaduna State by EOP	- No Multifunctional platforms exist	(not set or not applicable)	- By the end of year 5, 3 multifunctional platforms established, 1 in each of the following states: Cross River, Delta and Kaduna State	- One MFP established in the following states: Cross River, Delta and Kaduna State - Forest Management Committees (FMCs) established	Satisfactory (S)	One SFM Multi-Functional /Demonstration Center established in each State (Cross River, Delta and Kaduna). So, a total of three (3) Multi-functional Platforms/SFM Demo Centres have been built / established. However, more efforts are required in terms of equipping and operationalization of the MFPs. Ideally, the Multi-Functional Platforms are supposed to offer the following services: *- Energy efficient wood/charcoal manufacturing factory* *- carbonization (efficient charcoal making kilns) - engineering designs in progress* *- Cookstoves showroom* Over 10 Forest Management Committees (FMCs) established and are operational

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 2: Improved Management of Demand for Fuelwood and other Alternative Fuels	Level of improved awareness and acceptance of alternative (renewable and more efficient) energy technologies for domestic, institutional and industrial sub-sectors in Cross River, Delta and Kaduna States.	not set or not applicable	not set or not applicable)	Awareness increased by at least 20%	About 30 % awareness achieved	Satisfactory (S)	In August 2019, an awareness and training roadshow that sold 1500 stoves, before show reconnaissance visit before rolling out the road show. Various stakeholders and beneficiaries said the road shows increased clean cookstoves and associated technology awareness. There is however, a need for more awareness and training to existing and potential stakeholders and beneficiaries. Innovative awareness approaches like use of social media (Twitter, Facebook, Instagram, WhatsApp) as well as print and electronic media should be utilized.
	Level or % increase in penetration of improved/ alternative energy technologies for domestic needs in targeted communities.	not set or not applicable	not set or not applicable)	Level of penetration increased by at least 20% (BAU: 0.1%)	About 15 % increase in penetration of improved/ alternative energy technologies for domestic needs, institutional and industrial users are less than 10%.	Satisfactory (S)	In August 2019, an awareness and training roadshow that sold 1500 stoves, before show reconnaissance visit before rolling out the road show. Various stakeholders and beneficiaries said the road shows increased clean cookstoves and associated technology awareness. There is a need to create awareness to the youth for them to become future manufacturers of cook stoves among other clean cooking technologies. Various empowerment and training have been undertaken for end users, more especially women groups in the three focus states.
	Tons of carbon equivalent avoided per year from combustion of un-sustainable biomass in inefficient cook stoves/kilns	- REDD+ programme being implemented	not set or not applicable)	Avoided emissions of 40,000 t CO2 eq/year	Not determined	Satisfactory (S)	Even if the total carbon emissions reduction hasn't been determined, there are indication that the increased uptake of cleaning cooking stoves coupled with upscaled awareness campaign will significantly enable the reduction of carbon emissions per year in all the three target states.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 2: Improved Management of Demand for Fuelwood and other Alternative Fuels	Report on Market Segmentation in Nigeria developed	Preliminary Global Alliance for Clean Cookstoves (GACC) market assessment report in 2012.	(not set or not applicable)	By year 3, 1 detailed report on Market Segmentation in Nigeria developed	Draft detailed market segmentation report in Nigeria developed National Stakeholder's Validation Workshop held in Lagos on 25th June 2019 to review the report. Currently, it is going through peer review and editorial review before final production and dissemination	Highly Satisfactory (HS)	Draft detailed market segmentation report in Nigeria developed and almost finalized as we enter the third year of SFM Project implementation, this commendable.
	Number of women sensitized and trained by EOP	No formal training	(not set or not applicable)	300 women trained and certified as social entrepreneurs by EOP (100 in each state)	60 women per State have been trained during gender sensitive technical and business trainings on SFM best practices conducted in Cross River, Delta and Kaduna States respectively 10 women and men per State were trained during gender sensitive trainings on clean cookstoves production and enterprise in July 2019 A total of 210 men and women trained and certified as social entrepreneurs (70 in each State)	Highly Satisfactory (HS)	It was evident from the various women groups and other stakeholders that were interviewed by the MTR team that varied training on SFM practices, technologies and business were carried out since the inception of the SFM Project. Many of the trained people, and more specially women have become trainers of trainers (ToT) and impactful mentors in the whole clean cookstoves and alternative fuels supply chain in the three focus states in Nigeria.

Measure	Description of Indicator	**Baseline Level**	**Midterm target level**	**End of project target level**	**Midterm Level & Assessment**	**Achievement Rating**	**Justification for Rating**
Outcome 2: Improved Management of Demand for Fuelwood and other Alternative Fuels	Number of domestic cookstoves produced and distributed for BOP by EOP tCO2e saved by EOP and lifetime	No formal stove supply chain	(not set or not applicable)	20,000 stoves produced and distributed for BOP by EOP 595,165 tCO2e saved by EOP Avoided emissions of 40,000 t CO2 eq/year from combustion of un-sustainable biomass in inefficient cook stoves/kilns	5 domestic manufacturing industries for the production of the improved charcoal/wood cookstoves in Nigeria were identified and empowered to produce the stoves used in rural communities where SFM best practices would be promoted. The factories are: • Nenu Engineering Limited, Gwazunu Road, Suleja, Niger State • Roshan Global Services (Manufacturers of Happy Cookstoves) • Evirolife (Ekwuk stove) - Ekwuk Stove. Alesi Community, Ikom, LGA, CRS • Greenland FatiGold Services Nigeria Limited, New Bauchi Road, Saminaka community, Kaduna State • Methano-Green Clean Energy Nigeria Limited, Ushafa, Bwari LGA, Abuja In 2018, 5,000 stoves were produced and distributed In 2019, another 5,000 cookstoves have been produced 90 SFM branded sales booths/kiosks distributed and most installed	Highly Satisfactory (HS)	Initially, many of the micro-finance institutions operating in the three pilot states were not marketing or offering financial products or services for the production or purchase of clean stove/kilns. However, through the interventions of SFM Project, UNDP has provided grants for disbursement as loan to various MFIs and MFBs, in regard, the Projects significantly addresses the affordability barrier by facilitating access to consumer and start up finance for cookstoves manufacturers, wholesalers and retailers, hence increase number of clean cookstoves in the communities. Since year 2017, when the Project began, through the catalytic support from SFM Project to the industries has enabled them to produce on their own over 15,000 wood/charcoal stoves and sold to end-users in the open market.

Measure	Description of Indicator	**Baseline Level**	**Midterm target level**	**End of project target level**	**Midterm Level & Assessment**	**Achievement Rating**	**Justification for Rating**
Outcome 3 Improved efficiency, quality and affordability of domestically manufactured cooking/heating appliances for BOP and Strengthened domestic supply chain for EE/RE cooking and heating appliances	Number of low-cost stoves designed, made and tested for each state by EOP	No specific number of clean cookstove had been designed, made and tested for BOP market.	(not set or not applicable)	At least 1 low cost clean cookstove designed, made and tested for each of the BOP market in Cross River, Delta and Kaduna State by EOP	Participatory and gender sensitive and peer to peer training for local SMEs, distributors and community centers carried out in June 2018 and July 2019 in the three States to build local capacities. In 2018, participatory Cookstoves Technology Development team of academia/ researchers, local manufacturers and marketers of cookstoves as well as representative of end-users was established; Generated concept designs for cook stoves based on end user's needs; Generated Computer Aided Designs (CAD) models for the five different cook stoves Produced detailed engineering drawings for the five (5) different cook stoves Produced five working prototype / physical sample of the five different cook stoves. Expert-Peer Review of the prototype stoves conducted in July 2019 at Lagos.	Satisfactory (S)	From the many stakeholders, clean cookstove manufacturers, wholesalers, retailers and consumers that the MTR team interviewed and discussed with, it was evident that the design and production , as well as testing of the clean cook stoves have reached commendable levels, however, there is need to continues investment in design, production of high quality clean cookstoves, testing and quality labeling in the focus areas. Research and development in clean and affordable cookstoves and technologies still need to be enhanced. Given the many clean cookstoves and associated technologies imported in the country during the SFM Projects, it is the opinion of the MTR team that there has been meaningful transfer of quality production technology of clean cook stove in the country. During the implementation of the SFM Project, aspect of consumer rights has been captured, e.g. entitlement to clean and safe environment, and local content in the clean stoves / alternative energy technologies, including national orientation agency (NOA) policy views. By large, the clean cooking technologies / material are locally available, safe, environmentally friendly and of good quality, however, furthermore improvement is needed.

Measure	Description of Indicator	**Baseline Level**	**Midterm target level**	**End of project target level**	**Midterm Level & Assessment**	**Achievement Rating**	**Justification for Rating**
Outcome 3 Improved efficiency, quality and affordability of domestically manufactured cooking/heating appliances for BOP and Strengthened domestic supply chain for EE/RE cooking and heating appliances	Number of low-cost stoves produced and sold by EOP	No formal local production for BOP market	(not set or not applicable)	20,000 low cost stoves produced and sold in Cross River, Delta and Kaduna State for BOP market by EOP	GEF-UNDP SFM Project Customized wood/charcoal cookstoves presented to local manufacturers for production. A "Trade mark" for the above-mentioned stoves was designed and has since been used to brand cookstove being produced. 5,000 low-cost stoves produced and procured by SFM project. With catalytic support from SFM Project, the local manufacturers have produced over 8,000 low cost stoves. Making a total of over 13,000 low cost cookstoves produced. As per MTR, production of other proto-types have been commissioned and production have commenced. Over 60 youth trained on the production, use and maintenance of energy-efficient cookstoves	Highly Satisfactory (HS)	Various local cookstoves manufacturers and fabricators have trained many peoples on metal fabrication and ceramic, and as a result woman provide ceramics and men metal fabrication services within the cookstove manufacturing the value chain and hence capacity for increased low cost clean cookstoves production. There are meaningful efforts towards establishment of surveillances and certification of low cost and clean cook stoves by government bodies, though, this process should be fast-tracked to ensure safety and quality of the manufacture and distributed cook stoves.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 4: Established and successfully operating consumer financing model for clean cook stove/kiln.	- Number of financial products designed and tested and scaled up by EOP - Volume of loans disbursed by EOP - Number of households reached with clean stoves	No touchable financial products targeted for promoting production and distribution of Renewable Energy and Energy Efficient Cooking and heating technology to consumers.	(not set or not applicable)	- At least 2 financial products (matching rebate, startup loan) designed and tested and scaled up by EOP - USD 500,000 disbursed by EOP - MFIs & MFBs Sensitized on clean stoves by EOP	One financial product for Cross River, Delta and Kaduna States respectively, have been designed, developed and operationalized . Consultative and sensitization meetings with MFBs/MFIs have been held. International consultant engaged to support the development of Payment for Environmental Services & Community Forest Fund Finance Expert engaged to manage the process of grants disbursement. Consultative meeting with the CEOs of MFIs/MFBs held in Abuja. Guidelines for fund management & disbursement developed; M&E framework developed and has been accepted by MFBs/MFIs; US$105,000 disbursed (administrative cost inclusive) About 2000 households sensitized on the benefits of clean stoves through gender sensitive training.	Satisfactory (S)	The MTR found evidence that adequate participatory and gender sensitive training provided to MFIs and MFBs on clean energy financing (CEF) was undertaken for the participants of the three states. In partnership with Ministry of Finance, local banks, MFBs and MFIs have been testing, improving and where feasible been upgrading their financial products and services for the supply and demand of clean stove/kiln. There is however a need on finding innovative government and other source of funding mechanisms for SMES in the supply chain of RE and EE cook stoves and technology supply chain and more particularly creating digital / innovative platform like mobile money to enable consumers access credit to acquire clean cooking technology and also to repay through such platforms. A significant number clean cookstoves – greater that 20,000 targeted at EOP have been sold in the three states. 2018, 5,000 stoves were produced and distributed In 2019, another 5,000 cookstoves have been produced and distributed.

Measure	Description of Indicator	Baseline Level	Midterm target level	End of project target level	Midterm Level & Assessment	Achievement Rating	Justification for Rating
Outcome 4: Established and successfully operating consumer financing model for clean cook stove/kiln.	Number of MFBs and MFIs staff trained by EOP	No formal certified training	(not set or not applicable	20 bank/MFI staff each trained in Cross River, Delta and Kaduna State by EOP	20 MFBs and MFIs identified in each State for partnership establishment. Sensitization and awareness forum organized for 5 MFBs/MFIs per State. Working and strong partnership with Associations of MFIs and MFBs has been established. Financial expert engaged to train MFIs/MFBs staff and facilitate disbursements of grants, grants have been disbursed. Consultative meeting with the Association of Non-Bank Microfinance Institution of Nigeria (ANMFIN) held on the 14th September, 2017. 15 MFIs/MFBs staffs trained in each State	Highly Satisfactory (HS)	The target for engaging MFIs and MFBs in formation of formidable platform for disbursement of grants as loans to clean cookstoves, manufacturers, wholesalers, retailers and consumers has been realized. An innovative financing mechanism for the promotion of the uptake of clean cooking technology has been designed, developed and it has been operationalized. There has been commendable training for the MFBs and MFIs staff on best practices of financing clean cooking technology including financing of the entire sustainable forest management ecosystem / actors. At least all the clean cookstoves retailers have been linked with consumers though a seamless platform of providing credit to consumer to acquire clean cookstoves, this in turn has increased sales. There is however, a need to increase the available revolving fund as the demand for clean cookstove increase. The cost of the clean cookstoves seems to be high for the BOP consumers, hence innovative ways like financial deepening funds or federal or states' subsidies should be introduced to enable fast penetration of the clean cookstoves.

3.2.1.1 Ratings for Project Implementation, Adaptive Management and Sustainability

Table 12: Ratings for Project Implementation, Adaptive Management and Sustainability

Measure	Achievement Rating	Justification for Rating
Project Implementation & Adaptive Management	Moderately Satisfactory (MS)	Implementation of all the 4 components of the SFM Project has illustrated proper management arrangements, work planning, finance and co-finance, project-level monitoring and evaluation systems, stakeholder engagement, reporting, and communications and is leading to reasonably efficient implementation of the Project. There are however some shortcomings in terms of lack of enough adaptation measures to achieve the seemingly over ambitious target on the establishment of new forestlands in Delta and Cross River States. One of the key levers or aims of the SFM Project is to increase supply of sustainable and renewable forest resource for cooking and hearting in the three states focused by the Project. The Project Management should find plausible ways of engaging various stakeholders, development partners and beneficiaries in order to unlock hinder synergies, model / approaches of achieving the targets and indeed extra and enough funds to facilitate the achievement of the Project aspiration of increasing supply side of the sustainable fuelwood management equation. Real time capture, transmission and consolidation of various data/information at the local level / intervention sites that demonstrates progress towards results need to also to made more vigorous and robust and in this regard, technologies like geographical information system (GIS), remote sensing (RS), global position system (GPS), efficient and effective online or web based integrated database management systems (IDBMS) as well application of GEF Tracking Tools should be enhanced.

Measure	Achievement Rating	Justification for Rating
Sustainability	Satisfactory or Likely (L)	Generally, in Nigeria, there is lack of enough coordination and integration between policies and projects addressing sustainability of fuelwood production and consumption at all levels from local to national. Despite obvious linkages and synergies, the two sides of fuelwood problem, demand and supply, are being addressed in isolation in most parts of the country. These will be an ongoing concern for the SFM Project sustainability. The SFM Project is a special one in that, it is striving to bring together two types of projects and programs. Through at integrated an approach that aim at dealing with a) Sustainable forest management (supply side); and b) Clean energy access (demand side), the Project aims to achieve a truly Sustainable Forest Management System for the three states. The MTR team further notes that, the sustainability of SFM Project's outcomes, in particular of its support to EE market transformation for efficient cook stoves will be ensured via close involvement of three (3) key market stakeholders: local communities, manufacturers and financial intermediaries (MFBs and MFIs). It is the aspiration of the project to create such business model that market will continue growing without further grant support. This is based on the following assumptions: • Demand for improved cook stoves will sustain due to implementation of SFM regime in pilot communities; • Supply of affordable cook stove will be provided by local manufacturers; and • Financing will be made available at affordable terms by partner MFBs and MFIs. The issue of getting enough finance among other resources to support the four component is a challenge to sustainability of the SFM Project outcomes. The federal and state governments, plus other key stakeholders and beneficiaries as well as development partners should come together and identify, design, develop and implement a Grand Plan that mobilizes human, technological and financial resources – and more particularly carry out participatory rural appraisals (PRA) to get the buy in of plausible pathways of SFM Project outcomes realization and continuity.

3.2.1.2 Field Observations and Comments

To further illuminate and make more clarity into the Progress towards Outcomes Rating in section 3.2.1, and Ratings for Project Implementation, Adaptive Management and Sustainability in section 3.2.1.1, this section highlights some of the key field observations that the MTR team made in the Project's sites visited.

Photo 1: Shows one of the designs of a clean cookstove that targets institutional clients. There are few of such designs, but the emergence of such design by Nenu Engineering Limited promises to transform the clean cooking sector in Nigeria, not only at domestic level, but also at industrial cooking / heating.

Photo 2 - New SFM Project Cookstove Design.

Photo 3: Old model of Nenu Clean Cookstoves

Photos 2 and 3 indicate that the support by SFM Project has enabled many clean cookstoves manufacturers / fabricators to transit to better and more efficient designs of clean cookstoves. As seen in the photos, the green coloured clean cookstoves outside casing is adopted from the new SFM certified design, on the right of the photos, is the one of the old design casing used by Nenu Engineering Limited.

Phote 4 - Outer metallic casings

Photo 5 -Inner fired clay casings

Photo 6 - A section of the local skilled and semi-skilled worker

Photos 4 – 6 indicate that the clean cookstove industry is utilising local content, that is utilization of local raw material like recycled iron (for outside cookstove casing), local clay and kaolin (for inner cookstove casing) and local labour which is both skilled and semi-skilled. The utilization of the local content will ensure increased socio-economic activities and income, cultural and environmental benefits.

Photo 7 - Large stockpile of clean cookstove outer-casings

Photo 7 indicates that there is a large stockpile of clean cookstove outer-casings which means an increased production of clean cookstove production by Roshan Global Services among other cookstove manufacturers have been greatly increased their monthly manufacturing / fabrication of clean cookstoves through the financial assistance, awareness and distribution support by SFM Project. For example, Roshan Global Services Managing Director Mrs. Happy Amos indicated that their monthly production has increased from about 250 – 300 stoves per month before support and after support is about 500 – 1080 stoves per month. For Nenu Engineering Limited, the CEO and Owner, Mr. Christopher Obi said that before SFM Project support, his production was about 10-20 per month to 1000 – 1500 stoves a month.

Photo 8 - Old firing kiln

Photo 9 - SFM Project supported new firing kiln.

Photo 8 in the left shows the old inner casing firing kiln used by Roshan Global Services before the support of the SFM Project to acquire a more modern and efficient firing kiln shown on photo 9 in the right side of the photos. Such interventions to the manufacturers among many more by the Project have increased clean cookstoves production, efficiency and quality of finished cookstoves, not to mention the energy saving capability brought by improved kilns.

Photo 10 - Rails for cutting and bending of cookstove parts

Photo 11 - Pressing machine for making outer case of the cook stove

Photo 12 -Section of the pugmill

Photo 13 - Moulding equipment

Photos 10 - 13 show some of the tools / machinery used for clean cookstove production at Roshan Global Services. Some of this machinery / equipment shown above include: pugmill for grinding the clay, moulding tools, pressing machine and simple cutting and fabrication rails. From the assessment of the MTR team, it will be helpful if the Project could seek ways of putting a fund – this could be supported by state and federal government among other development partners in improving the clean cookstove production machinery by way of financing the manufacturers to acquire more efficient and modular processing line equipment /machinery. On the other hand, all the cookstoves manufacturers / fabricators should be connected to national power grid (photo 14 shows one of the sites of clean cookstove manufacturers who are using improvised diesel generators to produce power for welding and pressing) – this significantly increases the cost of production and eventually increased and unfavourable consumer prices.

The above proposed interventions for the SFM Project now, and in the future by other partners / agencies will enable the clean and efficient cooking technologies grow and development throughout the following key evolution stages of the industry in terms of quality and automation:

a) Artisanal production: local artisans (micro-entrepreneurs) working with local materials on simple designs with varying, but often low, levels of quality control; usually decentralized with limited output per entrepreneur;
b) Semi-industrial production: usually involves local assembly of pre-fabricated components with usually some basic tooling required for assembly; local workshops more centralized than artisanal production; and eventually,
c) Industrial production: centralized, larger-scale production with higher amounts of automation and tooling; higher-skilled/trained workers and higher standards of quality control.

Photo 14: Improvised diesel power generator in one of the clean cookstoves fabrication site.

Photo 15 – Well packaged and branded local clean cookstove ready for the market

From photo 15, it is clear that the artisanal cookstove manufacturing in Nigeria is growing and developing. Photo 15 shows a well packaged and branded clean cookstove ready for the local market at Roshan Global Services. The improvement of the Nigerian artisanal and semi-industrial clean cookstoves means that efficiency, quality and affordability of the locally produced efficient and cleaning cooking technologies will be effectively be bought by the local communities and affinity to more costly imported products will reduce. This would lead to increased local employment and income generation opportunities for the local communities.

Photo 16 - MTR meeting NACC Representative

Photo 16 shows the MTR team meeting the Nigerian Alliance for Clean Cookstoves (NACC) representatives. The NACC partnership with SFM Project has been greatly synergetic. The SFM Project aims to enable manufacturing, distribution and sale of about 20,000 clean cookstoves in the focal states, on the other hand NACC did indicate to the MTR team that from year 2012 to 2017, their members had managed to manufacture and sell about 7million clean cookstoves in the country. The Nigerian Alliance for Clean Cookstoves, inaugurated in May 2011 seeks build a public-private partnership to introduce

10 million fuel-efficient stoves to Nigerian homes and institutions by 2021. The Nigerian Alliance for Clean Cookstoves is made up of both government and private organizations with knowledge and interest in gender, health, renewable energy, energy, environment, rural development and promoting small businesses. Every member of the Alliance has contributed in one way or the other to promoting cleaner household cooking fuels and use of biomass in an efficient manner.

Photo 17 – SFM Project's provided cookstoves display kiosk

Photo 17 shows one of the 90 SFM Project kiosks that were distributed in the three states (Kaduna, Cross River and Delta). This is an innovative way to showcasing and creating awareness on the clean cookstoves. There are however, some improvement that can make the kiosks more impactful in delivering the cookstove sales target. One, the size and design of the kiosk should be improved in such a way that more cookstoves are accommodated including other retails consumer goods, plus improved shelter for products safety and security. Secondly, better approach / ways of working with states and local government councils on the placement of Projects cookstove kiosks should be found and rolled out in order to address the impediments that have prevented installation of all the 90 or so kiosks supplied to the states. A good example is where a proper agreement between Kaduna Local Government Council and SFM Project could enable entrepreneurs to place their kiosks in free spaces, while being charged affordable license and tax fees. If such an arrangement is in place in Kaduna LGA, the 9 remaining kiosks out of the 26 kiosks supplied could be effectively installed for the entrepreneurs.

Photo 18 - MTR team meeting community members of an association of clean cookstoves.

Photo 18 shows MTR team meeting community members of an organised group / association of clean and efficient technologies and fuels potential manufacturers, wholesalers, retailers and consumers. The meeting was in Calabar, CRS. Indeed, creation of clean cookstove associations is the first step that represent important progress towards enabling the local community to fully realize the vast benefits from clean cooking solutions. Foremost among each community is the development of a thriving local or regional market for clean cookstoves and fuels, with the ability to sell as many clean cookstoves as possible. Without a market, it will be almost impossible to adequately and sustainably address the vast cooking needs of the community. In summary, Clean Cookstoves Associations enable the community or supply chain to overcome challenges/barriers within the Improved Cookstoves (ICS) sub-sector ecosystem and hence enabling creation of a robust ICS market in the community or region, these included financing both for manufacturers and consumers, awareness on the quality and benefits of ICS, capacity building for the whole value chain, as well as advocacy for enabling policies and regulations.

Photo 19 -New forestland development at Ekiriba Forest Reserve.

Photo 20 - New woodlot in Ogoja/Mbok Community Land

Photo 21 - Woodlot in Adonte Community Land

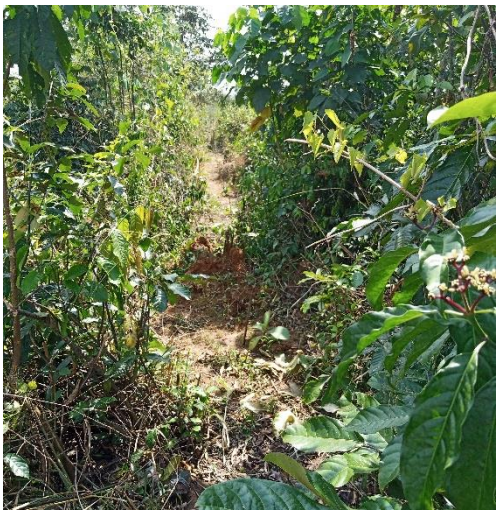


Photo 22 - Ukwuu-Oba tree enrichment for fallow areas was done, about 15, 000 tree seedlings planted. There is more than 200 hectares of forest reserve available for more enrichment / planting.

Photo 23 - Ogwushi-Uku forest being improved by replanting of tree shoots or wildlings.

Photos 19 – 21 show two main ways of increasing supply of sustainable wood fuel products. These are; one, through establishment of new forestlands in community lands and states' forest reserves and two, through the establishment on new woodlots in community and private lands. Targets for the establishment of new forestlands has lagged behind majorly due to lack of available land and secondly by the inherent large target of establishing 50,000 hectares of new forestlands in Delta and Cross River states, the target was set after REDD+ initial assessment. Even if the target can be revised downwards, the ideal situation is to pursue the target under a new repackaged approach through SFM Project grand plan that can be developed through various stakeholders' consultation and involvement including involving the local communities by carrying a detailed community rural appraisal. Extra resources (financial, technical and human) can be mobilised and if the target is not achieved in the first phase of the project, a business case can be put forward for the second phase of the SFM Project in order to achieve this very important target of increasing the supply side of the sustainable fuelwood

management equation. Furthermore, as shown in photos 22 – 23, the MTR team found out that there are very innovative tree propagation methods being practiced for the SFM Project, beyond the traditional approach of establishing tree nurseries in order to later transplant and establish new forestlands, the MTR team found out that the forest development officers are using forest enrichment and wildling (both for to propagate both *Tectona grandis* and *Gmelina arborea* tree species) methods to increase the hectarage of new forestlands.

Photo 24 - A banner with a message of promoting the MFB green energy products to its customer in Calabar.

Photo 25 - MFB's Managing Director at Calabar showing the MTR team some of the cookstoves they sell on credit to their customers.

Photo 25 shows the Managing Director of the MFB in Calabar showing the MTR team some of the clean cookstoves the MFB is selling to its customers through favourable loan schemes which are enabled by the SFM Project financing model.

The MFB in Calabar University has put an ambitious green financial products business plan in order to assist Cross River State achieving a successful transition towards a green economy. Based on the aforesaid business plan, and through training by SFM Project and availing of financial grants by SFM Project, the MFB has also committed significant financial resources towards giving low interest loans to its customers who want to purchase clean and efficient cookstoves and they do not have immediate financial capability.

Photo 26 - Agbarho Multifunctional Platform (MFP) or Demonstration Centre

Photo 26 shows the outer condition of Agbarho MFP, which is one of the three MFPs / demonstration centres that the MTR team visited. The Agbarho MFP seemed to be a bit out of use during the MTR team's visit, though the representative of the FMC indicated that plans are underway to fully furnish and operationalise the MFP. Based on the current status of the MFPs, the MTR team do recommend that all the three MFP be converted to Community Leaning Centres (CLCs) and behind the CLCs, local cookstoves fabricators / manufacture sheds be built. The local fabricators should pay rent to the community in order to maintain the operation of the CLCs. On the other hand, CLCs should be constituted of the following: Inquiry desk, information/ business centre with small library, ICT services were local pay reasonable charges, environmental video facility for the locals to learn on environmental conservation strategies / approaches, the CLC should also have an administration office, a room for showcasing various environmental products and services - more specially cookstoves and clean fuels, there should also be a restaurant that uses clean stoves and fuels and locals should pay reasonable amount for foods offered at the restaurant – restaurant can also be used to promote local foods and balanced nutrition. Adjacent to the CLC should a demonstration tree nursery and woodlot.

3.2.2 Remaining Barriers to Achieving the Project Objective

After assessing and rating the performance of Project in regard to realising the expected outcomes and targets, the MTR team did identify the following remaining challenges / barriers to achieving the project objective in the remainder of the Project time frame.

i. Lack of enough resource (human, technological and financial). Given the huge target of realising 50,000 hectares of new established forestlands, the SFM Project need to mobile significant resource in terms of finance, human resource and technological as well as technical capabilities. Initially, REDD+ programme had committed to provide financial support, but at MTR, the MTR team was informed that expected funds from REDD+ programme hasn't come through.

ii. The other barrier for progress towards results of the SFM Project, and especially in the northern part is the lack of enough security. Though areas of Kaduna where the Project is focusing in the north is relatively safe, if the SFM Project was to proceed to phase two and expand to other states, it must navigate and find ways on overcoming the following security challenges:

    a) Boko Haram -the militant Islamist group has destabilised the North-East of Nigeria. Since 2009 the group killed tens of thousands of people and displaced millions more. About 2.5 million people fled their homes and towns, and the direct consequence of the conflict was that the North-East was plunged into a severe humanitarian crisis - as of 2018, one of the worst in the world - which has left about 7.7 million people in need of humanitarian aid.

    b) Farmer-herder clashes - the Middle Belt region of Nigeria has faced prolonged violent clashes between the predominantly Christian farmers and the mostly Muslim cattle herders. At the core of the conflicts are disputes over access and rights to land and water resources and rapid desertification which has changed the grazing patterns of cattle. These clashes are not necessarily new, but since 2015, the disputes have become more frequent and violent. In 2018 alone, more than 2,000 people were killed in such clashes - more than the number killed in the past two years combined. The conflict now claims an estimated six times more than the Boko Haram crisis.

c) Niger-Delta - the Niger Delta, the oil-producing core of Nigeria has for decades suffered from oil pollution which has led to the loss of livelihoods and sources of food for locals. The area has also been neglected by the federal government even though the bulk of the country's fund comes from the region. In the last decade, clashes between armed groups in the area and the security forces reached an all-time high; kidnappings were rife, and oil infrastructure destroyed at a phenomenal rate. In 2016, one of the most prominent armed groups in the region, the Niger Delta Avengers (and other smaller groups), destroyed oil production infrastructure reducing production from 2.2 million barrels per day to the two decades low of 1.4 million barrels a day. The infrastructure vandalism contributed to the onset of one of Nigeria's worst economic recessions on record.

iii. Some policy and regulations that are not aligned with the Projects objectives. Where the Project might unlock huge potential like availing of federal forests and state forest reserves for establishment of new forestlands in order to achieve set targets, and taking into consideration that some policy issues and regulations need to be changed, the process can experience delays for several months or years to complete the legislative cycle.

3.2.3 Ways to Further Expand Project's Benefits

Having evaluated the project aspects that have been successful and barriers experienced, the MTR team did identify the following ways in which the project can further realise more benefits to the beneficiaries and stakeholders.

i. The federal and state governments, plus other key stakeholders and beneficiaries as well as development partners should come together and identify, design, develop and implement a Grand Plan that mobilizes human, technological and financial resources – and more particularly carry out participatory rural appraisals (PRA) to get the buy in of plausible pathways of SFM Project outcomes realization and continuity.

ii. The PSC should continue carrying out activities that adequately sensitize and inform policy makers and legislators throughout the Project cycle in order to enable them to be abreast with the prevailing needs of the Project and the entire clean and efficient cookstoves and fuels value chain in the country.

3.3 Project Implementation and Adaptive Management

3.3.1 Management Arrangements

The MTR team did review the overall effectiveness of project management as outlined in the Project Document. The MTR assessed whether changes have been made and they have been how effective they have been. The MTR team also evaluated whether responsibilities and reporting lines are clear and whether the decision-making processes are transparent and undertaken in a timely manner. Based on the above, the MTR team found the following:

a) The SFM project is being implemented within the framework of UNDP's national implementation modality (NIM), according to the Standard Basic Assistance Agreement (SBAA) between UNDP and the Government of Nigeria and the Country Program Action Plan (CPAP). The lead Implementing Partner for this Project will be the Energy Commission of Nigeria, which has the governmental mandate to coordinate the formulation and implementation of energy efficiency and forest and land restoration policies and related programs and strategies respectively.

b) The Implementing Partner for the project has been the Energy Commission of Nigeria (ECN) and it has effectively been responsible and accountable for managing the project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP-GEF resources.

c) The Project Steering Committee (PSC) has been responsible for making decisions by consensus; PSC has been assisting the Project Manager on making critical decisions for the project like recommendation for UNDP and Implementing Partner approval of project plans and revisions. To great extent, the MTR team found out that PSC decisions were made in accordance with standards that ensure management for development results, best value for money, fairness, integrity, transparency and effective procurement processes. The PSC has been comprised of individuals representing the following institutions: UNDP CO Focal Point Person, ECN (Director General the Chair); FMOE, SON, FC (CRS/Delta/Kaduna) and NACC.

d) The meetings of the PSC have been held at least four times per year (quarterly meetings for reviewing project performance, work plan and budget and addressing any challenges experienced in the field).

e) The MTR team did visit the ECN office and met the Project Manager. During the interviews with the Project Manager, it was evident that the Project Management Unit (PMU) under ECN has been effectively been able to run the SFM Project on a day-to-day basis and within the guidelines laid down by the PSC, UNDP and GEF. It was also found out that the PMU was constituted of the following key personnel:

- Project Manager (PM): The Project Manager (PM) has been responsible for overseeing the overall project implementation and ensuring that the project objective and outcomes (results specified in the project document) are achieved in a timely and cost-effective manner to the required standard of quality. The PM has been reporting to the Project Steering Committee on project progress and plan, and seeking its guidance to resolve emerging issues.

- Full-time Project Assistant and Finance Officer: Project Assistant and Finance Officer has been providing secretarial and financial assistance to the project staff and assisting the National Project Coordinator (NPC) or Manager on administrative and financial matters.

- Representatives of SFM and SLM Management Committees: Representatives from SFM/SLM MCs have been identified and engaged on need basis for the successful coordination and implementation of project activities at community level.

- Part time International Technical Advisor (ITA): The MTR team found out that an International Technical Consultant (Caroline from Nairobi, Kenya) was engaged to carryout a Consultancy on Payment for Environmental Services (PES).

- Short-term External Experts: Local Short-Term Experts were used as Companies/Vendors who assisted in the execution of most of the Project activities.

f) The MTR team found out that GEF Partner Agency (UNDP) has been offering timely, quality and appropriate support to the Implementing Partners (IP) as

well as other relevant stakeholders. UNDP focal point person has been attending all the PSC performance review meetings which are done quarterly at ECN head quarter office.

g) The MTR team found out that proceedings of all Project Board meetings were well recorded and shared amongst all the members and also with the SFM/SLM Management Committees at the community level. The Board undertook annual project reviews, including the review of annual Project Implementation Review (PIR) sheets that the project submitted to UNDP and the GEF.

h) The ECN has been serving as the Executive and has been having ultimate responsibility for the project, supported by the Senior Beneficiary and Senior Supplier. As part of the responsibilities of the Project Board, the Implementing Partner has been ensuring that the project is focused throughout the project cycle in order to achieve the results outline in the project's Strategic Results Framework and in the most innovative, cost effective, catalytic and replicable manner. On the other hand, the Board has been providing strategic guidance to the project and ensuring that risks are being tracked and mitigated as effectively as possible. The Senior Executive at ECN has been responsible for approving and signing the Annual Work Plans (AWPs) on behalf of the Implementing Partner as well as approving and signing the Combined Delivery Report (CDR) at the end of the year. The Senior Executive has also been responsible for delegating authority in writing to a Responsible Officer within ECN for signature of the Funding Authorization and Certificate of Expenditures (FACE) form as well as any other project related documentation.

i) It was also evident that SFM Project assurance was effectively provided by the UNDP Country Office specifically and also additional quality assurance was provided by the UNDP Regional Technical Advisor where it was needed.

j) In regard to the assessment of UNDP's performance in the following aspects: candour and realism in reporting, the quality of risk management and responsiveness of the managing parties to significant implementation problems / challenges; the MTR team found out the following:

I. Candour and Realism in Reporting

The MTR team found out that UNDP CO has been performing thorough analysis of all project assessments, monitoring, tracking and evaluation reports. The analysis of the integrity of project's reports has been in form of meta-

analysis approach that combines data from multiple studies in order to ascertain the reports (e.g. project's initial assessments, PIR, GEF tracking tools, PIF, UNDP Initiation Plan, Project Document, project budget revisions, lesson learned reports, national strategic and legal documents, and any other materials that the team considers useful for evidence-based reviews) position in bringing out the both positives and negatives of the project performance and realism of the reports. In testing the realism of the project's reports, UNDP CO has been testing whether all the information provided in reports represent the project baseline for monitoring and eventually for impact assessment at project closure.

II. Quality of Risk Management

In regard to quality of risk management, the MTR team did find out that UNDP CO has good follow up and emphasis in the application of UNDP Environmental & Social Safeguard Policy at the sub-project activities. UNDP CO has trained Project Implementing Partner / Agency (ECN) on the implementation of the E&S Safeguard Policy. In conducting risk management activities, the MTR team found out that UNDP CO has been effectively establishing the project risk context, carrying out proper risk assessment, identifying ways to manage the risks, ensuring that risk management processes is monitored and reviewed and where appropriate communicate and consult with relevant stakeholders. The focal areas of risk management by UNDP CO have been well balanced and essentially have been in the following critical areas of project performance: Environmental, Financial, Operational, Organizational, Political and Regulatory.

III. Responsiveness of the Managing Parties to Significant Implementation Problems / Challenges

Whereas, the MTR team did not identify significant problem / challenge with the SFM Project implementation, the MTR team did find out that UNDP CO and the Implementing Partner have established seamless process of consultation and communication from UNDP CO, ECN, State Governments, Local (LGAs) Governments, Project Beneficiaries and other relevant stakeholders. Two of the instances that illustrated UNDP CO capability to addressing challenges included: one, where the PSC was able to liaise with Delta State Administration in addressing challenges of allocating forest reserves for development of new forestlands.

3.3.2 Work planning

In regard to work planning for the SFM Project, the MTR team found out the following:

a) There were no delays in the SFM Project start-up and implementation so far. Since inception in February 7th 2017, the Project has proceeded well, including in the year 2019 which had a few challenges associated with the Presidential elections and its aftermaths. Undeniably, the consistency of the Project implementation has benefitted from State Project Management Units (PMUs) and earlier implementation plan meetings held with Communities where the woodlots are being planted.

b) The Project work-planning processes were found to be results-based which was fully discussed and accepted by the project beneficiaries.

c) The Project management has applied effectively the Project's Results Framework/ log-frame as a management tool. There are however, a need to make the GEF Tracking Tools and PIR more robust in capturing local quarterly data and information so that there can be a seamless and accurate transfer of data and information from local project levels to the National level for effective monitoring, evaluation, reporting and timely correction of any inconsistencies.

d) In line with UNDP-GEF guidance, the UNDP Country Office did commission the mid-term review in October 2019 following the completion of the Project's second PIR report.

3.3.3 Finance and Co-finance

According to Project Documents, the total cost of the project is USD 20,810,000. This is financed through a GEF-LDCF grant of USD 4,410,000, USD 300,000 in cash co-financing to be administered by UNDP and USD 16,100,000 in parallel government and other connected agencies co-financing. UNDP, as the GEF Partner Agency, is responsible for the execution of the GEF resources and the cash co-financing transferred to UNDP bank account. In regard to parallel co-financing, the actual realization of project co-financing was to be monitored during the mid-term review and terminal evaluation process and then reported to the GEF. The planned parallel finance and co-financing will be used as follows:

Co-financing source	Co-financing type	Co-financing amount	Planned Activities/Outputs
Government (In-kind) - Cross River State Forest Commission	*In-kind*	*1,900,000*	*Components 1, 2,3 and 4*
Government (Grant) – Federal Ministry of Environment	*Cash*	*2,200,000*	*Components 1, 2,3 and 4*
Bank and MFI (Fortis MFI)	*Cash*	*3,000,000*	*Components 1, 2,3 and 4*
UN-REDD+	*Cash*	*4,000,000*	*Components 1, 2,3 and 4*
SMEs	*Cash*	*2,000,000*	*Components 1, 2,3 and 4*
DARE	*Cash*	*1,000,000*	*Components 1, 2,3 and 4*
ICEED	*Cash*	*2,000,000*	*Components 1, 2,3 and 4*
UNDP	*Cash*	*300,000*	*Components 1,2,3 and 4*
GEF	*Cash*	*4,410,000*	*Components 1,2,3 and 4*
Total		***20,810,000***	***Note:*** *USD 300,000 in cash co-financing will be administered by UNDP.*

The MTR team did find out that the finance and co-financing arrangement of the project has been working well and all allocated finances have been used efficiently and effectively and there are no remaining finances for the allocated interventions.

The MTR Team found out that, the project financial management and controls are appropriate and a thorough national and state process for reporting and planning is in place. At the state PMUs and PSC level, the Project Management in consultation with relevant stakeholders have been able to make informed decisions regarding the budget and allow for timely flow of funds. There has been effective co-financing monitoring and all the co-financing components have been used strategically to help the objectives of the Project. There have been various Project Steering Committee (PSC) meetings which have been held with all co-financing partners, these have been for basically aligning financing priorities and annual project work plans.

The MTR team made the following observation regarding the finance and co-financing management. The five (5) domestic manufactures of clean cookstoves now serve to contribute the co-finance of the earlier planned co-finance of SMEs, DARE and ICEED and hence their Counterpart Funding will be in the form of "investments" in their respective businesses". Furthermore, all the MFBs and MFIs partnering with the SFM Project in the implementation of Component 4 are contributing the Counterpart Funds/Financing that Fortis MFI was expected to contribute. Letters have been sent to State Governments to contribute Counterpart Funding which will be as adaptive management since UNREDD+ is still at the Readiness State (REDD+ planned co-financing was USD 4,000,000). However, the State Government are still

working out the modalities for the payment. Given the aforementioned situation on financing and co-financing, the MTR team estimates the actual figures of financing and co-financing realised / committed as at MTR to be as indicated in table 13 below.

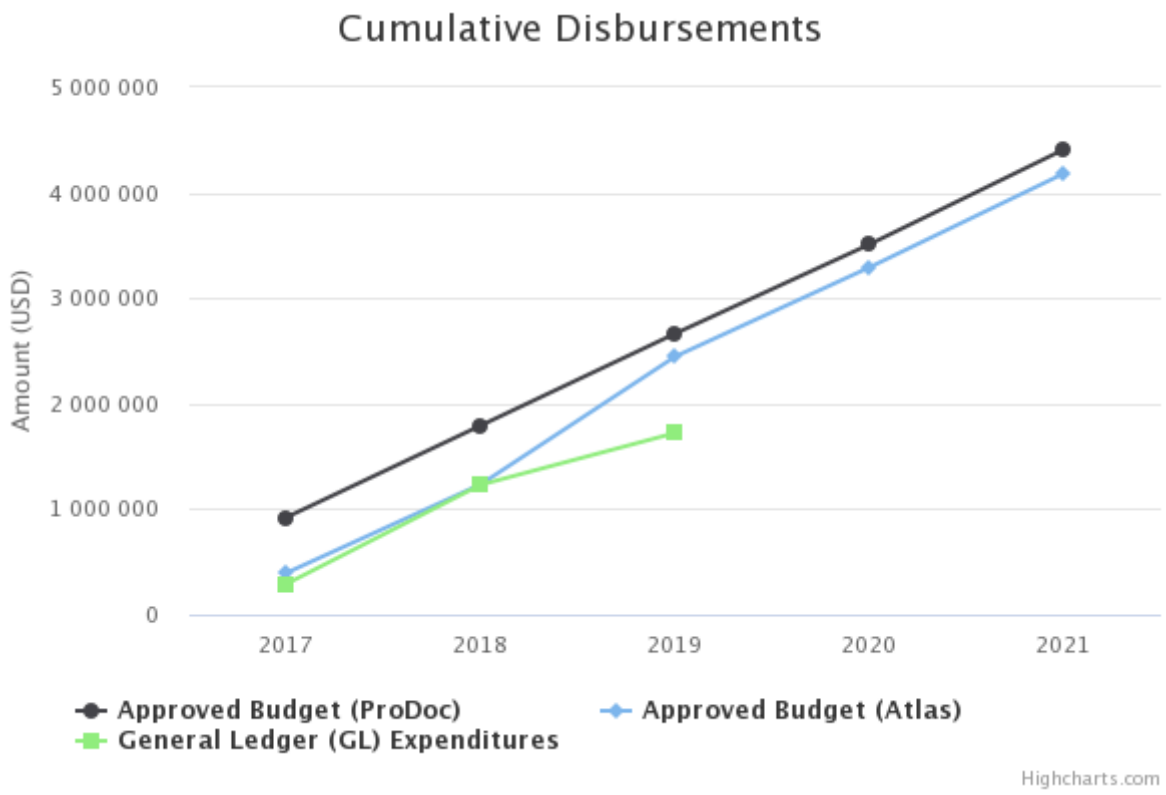
The SFM Project's financial planning is relatively simple because the project is sub-divided in only four key components which have clearly defined activities being managed by PMU at ECN and implemented by states PMUs. The project budget as shown in UNDP/GEF Project Document provides for the allocation of GEF and partner contributions for all activities over the 5 years project period. This includes both cash and in-kind contributions.

According to the PIR (June 2019), the status of co-financing indicates no relevant changes. Details on actual financing realised so far are given in table 13 below. It can be stressed that there was no extra cash input from any other source of finance for the SFM Project that MTR team found. Having evaluated the financing arrangement for the project and the efficiency aspects illustrated by figure 6 (as per PIR 2019) which shows planned / approved budget lines and the actual utilizations, as well as years 2017, 2018 and 2019 Physical and Financial Performance Reports which were reviewed, the MTR team's opinion is that the project implementation has been efficient in utilization of financial resources and hence rate the project's financial planning and utilization as HIGHLY SATISFACTORY.

Table 13: Project Co-Financing Arrangement as per PIR June, 2019

Sources of Co-financing *Select one:* *-GEF Agency* *-Donor Agency-* *-Recipient Country Government* *-Private Sector* *-Civil Society Organization* *-Beneficiaries* *-Other*	**Name of Co-financer**	**Type of Co-financing** *Select one:* *-Grant* *-Loan* *-Equity* *-Investment* *-Public* *-Guarantee* *-In-Kind* *-Other*	**Planned Co-financing Amount for entire project cycle (US$)**	**Actual Co-financing Amount at MTR (US$)**	**Investment mobilized*** *indicate one of two choices:* ***-investment mobilized*** *or* ***-recurrent expenditures***
GEF Agency	UNDP	Grant	300,000	120,000	Recurrent expenditures
Donor Agency	GEF	Grant	4,410,000	4,410,000	investment mobilized
Recipient Country Government	Federal Ministry of Environment	Public	2,200,000	2,200,000	investment and recurrent mobilized
Recipient Country Government	Cross River State – Forest Commission	In-kind	1,900,000	1,900,000	recurrent expenditures mobilized
Private Sector	MFBs & MFIs	Investment	3,000,000	3,000,000	investment mobilized
Beneficiaries	Cookstove Manufacturers	Investment	5,000,000	5,000,000	investment and recurrent mobilized
Donor Agency	REDD +	Grant	4,000,000	----------	investment and recurrent mobilized
Total			**20,810,000**	**16,630,000**	

Figure 6: Budget Lines Performance as per PIR June 2019



Cumulative GL delivery against total approved amount (in prodoc):	39.05%
Cumulative GL delivery against expected delivery as of this year:	64.64%
Cumulative disbursement as of 30 June (note: amount to be updated in late August):	1,721,895

3.3.4 Project-Level Monitoring and Evaluation Systems

The MTR team found out that there is a robust and effective monitoring system and a plan. Generally, the following were found regarding the existing Project Monitoring System (PMS):

a) The Project Manager /Coordinator is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Manager has been ensuring that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Manager has been continuously been informing the Project Steering Committee, the UNDP Country Office and the UNDP-GEF RTA of any delays or difficulties as they arise during project implementation. The Project Manager has been preparing annual work plans based on the initially approved 5 years work plan.
b) During the MTR, the Project Manager did ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. The Project Manager also did provide the MTR team with GEF Tracking Tools and PIR.
c) The Project Manager has been ensuring that project risks are monitored and the various plans/strategies have been developed to support project implementation.
d) The PSC have been also taking corrective action as needed to ensure the project achieves the desired results. The PSC have been holding project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year.
e) During the MTR, the Project Management Unit (PMU) did provide all required information and data necessary for timely, comprehensive and evidence-based project review, this included Project's results and financial data.
f) It was also clear that Project Management Unit's M&E was taking into consideration national guidelines on M&E as well as aligning the reporting with national systems so that the data used by and generated by the project supports national systems.
g) The UNDP Country Office has been supporting the Project Manager as needed, and more especially during annual supervision missions. In addition, UNDP Country Office did initiate and organized key GEF M&E activities including the annual GEF PIR, and in deed this current independent mid-term review (MTR) and it is expected to also support the Project's independent terminal evaluation. The MTR team have been following the UNDP - GEF M&E requirements and guidelines for this evaluation.

3.3.5 Stakeholder Engagement

Regarding stakeholder engagement (SE), the MTR team did find out the following:

a) The entire Project implementation has been based on strong collaboration, partnership and engagement with all relevant stakeholders. The project implementation mechanism continues to support and develop necessary and appropriate partnerships with direct and tangential stakeholders in ensuring realisation of expected outcomes.

b) The SFM Project is a UNDP-GEF supported and financed project, however, the Government of Nigeria has co-financed the project and there is a government ownership of the Project right from the national to local levels. By and large, the project implementation is driven by the holistic stakeholders' participation and following the country-driven public project implementation processes. During the field survey, it was evident that the local and national government stakeholders do support the objectives of the project and they continue to have an active role in project decision-making that supports efficient and effective project implementation.

c) One of components of the project is to manage the sustainable fuelwood demand, and the key target is to create effective public, private and community awareness, first about the entire project objective and secondly on where and how to access clean and sustainable cookstoves and fuel in order to reduce health and environmental impacts resulting from the use of less efficient and clean cookstoves and fuels. The awareness and training aspects, furthermore, cuts across the entire project implementation. In this regard, the project implementation and design has ensured proper stakeholders' participation as well as public awareness. Based on the above, the MTR team did ascertain that to great extent stakeholders' involvement and public awareness has contributed to the progress towards achievement of project outcomes.

3.3.6 Reporting

The MTR team did assess the reporting mechanism for the project and found out that the established systems and frameworks for the continuous monitoring, reporting and review of interventions did have the following characteristics:

a) The Project Manager is ensuring that all project staff maintain a high level of transparency, responsibility and accountability in M&E and accurately reporting of project results. The Project Manager is also ensuring that the

results framework indicators are monitored annually in time for evidence-based reporting in the GEF PIR, and that the monitoring of risks and the various plans/strategies are developed to support project implementation.

b) ECN has been providing all required information and data necessary for timely, comprehensive and evidence-based project reporting, including results and financial data, as necessary and appropriate.
c) The Project Management Team and partners have established proper channels and mechanisms for effectively undertaking and fulfilling GEF reporting requirements.
d) In quarterly meetings, PSC has been taking into consideration lessons derived from project implementation and likely adaptive management processes / approaches for the project performance enhancement.

3.3.7 Communications

The MTR team found out that there has been effective communication within various government ministries, departments and agencies (MDAs) and across national, state and local government areas administration levels. From various documents (meeting minutes, reports and email communications), the MTR team found out that the national Project Steering Committee (PSC) which is comprised of individuals representing the following institutions: *Chairman* – DG of ECN (National Project Director – NPD), *Members* representing - UNDP, FMOE, SON, FC (CRS/Delta/Kaduna), NACC, Asst. Director General of ECN (Convener & Secretary) and Project Manager (PM) supported by National and International Technical Advisors.

The Program officer (GEF)-Environment and Energy Unit of UNDP has been having effective communication with the Project Manager at the ECN as well as the States PMUs – this was ascertained through various group discussion and key informant interviews. Decisions at the UNDP CO have been properly communicated to the national and states PMUs and PSC, and then to Forest Management Committees as well as Sustainable Land Management Woodlots Committees. Most of the beneficiaries interviewed were happy with the effectiveness of communication from top to bottom and vice versa.

In addition, the MTR team did ascertain the following:

a) There are proper means of communication established to express the project progress and intended impact to the public. The SFM Project has a publicly accessible internet portal / page at ECN web site. Before and during the Project

implementation, there have been various initiatives geared towards outreach and public awareness regarding the Project interventions.

b) National and states PMUs have been in regular telephonic / email or other forms of contact in order to ensure that communication over project management and implementation is clear.

c) Participating duty-bearers have been identified and clarified. Throughout project implementation, duty-bearers have been in regular communication with the PMUs in order to ensure that tasks are understood and conducted effectively. It was also evident that capacity gaps have been identified and addressed through adaptive management by proposing cost effective strategies and approaches to addressing these needs during project implementation.

d) It was also found out that national PMU has effectively been able to facilitate communication and meetings of the PSC in order to review activities achieved, and discuss activities planned for approval and implementation; ensuring states PMUs report periodically and on schedule regarding progress/performance/budget execution against the M&E framework and budget of the project; supporting State Project Focal Persons to collaborate with active like-minded organisations to improve and upscale project activities among various beneficiaries; holding regular meetings and other ad hoc meetings with the State Project Focal Persons in order to discuss plans and progress, and to follow up any concerns the State Project Focal Persons or the beneficiary groups may have. The MTR team however found out that the national PMU should enhance the coordination and liaison with other donor and government project managers to ensure that synergies are built and that there is no overlap of tasks.

3.4 Sustainability

First, the MTR team did assess whether the risks identified in the Project Document were the most important and whether the risk ratings applied are appropriate and up to date. It was found out that the risks identified were the most applicable and the rating was appropriate. In the following section, the MTR team outlines briefly how the following risks apply to project sustainability; financial, socio-economic, institutional framework and governance as well as environmental risks.

3.4.1 Financial Risks to Sustainability

The MTR team found that the financial risk to the sustainability of the project outcomes remains high and an on-going concern. The MTR team did ascertain that in order to support and promote adoption and use of clean and sustainable cookstoves and fuels in Nigeria, it will require a significant investment on the part of the Government, the private sector and other development partners. The lack of competitive value chain financial products and services and the limited understanding of potential risks and return on investment could act as a deterrent for investment in this sector. In order to address the financial risk, the MTR team do recommend that the PSC should endeavour to put in place a strategic public-private, and development organization partnership, complementing adequate structures, mechanisms, policy and legislation that will encourage investment in the sector as well as enabling the achievement of SFM Project targets.

The proposed SFM Project interventions are known to have measurable impacts on the livelihoods of local communities in terms of income generation, improved access to clean, renewable and affordable cooking technologies and fuels and resilience to extreme climate change events. Indeed, the MTR did ascertain that certain short-term benefits associated with SFM Project are evident during project implementation. By way of example, local cookstove manufactures and retailers are experiencing increases in income from selling of improved cookstoves to domestic households, institutions and some small-scale agricultural processors.

Other benefits may however, only be realised after sometime of Project implementation. Although these benefits may not be visible in the short-term, the long-term effects thereof will be realised for decades after project implementation, hence contributing to projects outcomes sustainability.

3.4.2 Socio-economic Risks to Sustainability

There are no major social or political risks identified during the MTR that may jeopardize sustainability of project outcomes. Given the project design and the actual implementation, the MTR did indicate that the project has a high level of both public and private sector stakeholders' ownership and hence project implementation will allow project outcomes/benefits to be sustained even after end of the project implementation term. From the various interview conducted during the MTR, it was evident that various key stakeholders see that it is in their interest that the project benefits continue to flow. Throughout project design to implementation, there has been sufficient public / stakeholder awareness in support of the long-term objectives

of the project. Through the various level of project monitoring, evaluation and reporting process, lessons learned are being documented by the Project Team on a continual basis and shared/ transferred to appropriate parties who in turn are learning from the project and can effectively replicate and/or up-scale the project outcomes in the future. The MTR team, however, did find a few residual socio-economic risks to project sustainability, but by large these risks can be sufficiently be mitigated. One of the examples of the residual risks includes; raw material price escalation and unavailability of clean cooking commodities and materials.

3.4.3 Institutional Framework and Governance Risks to Sustainability

The MTR review found out that there are no legal frameworks, policies, governance structures and processes that significantly pose risks that may jeopardize continuity of the project's benefits. The assessment found out that there are requisite project management systems/ mechanisms for accountability, transparency, and technical knowledge transfer are in place. However, during the MTR team discussion with PSC members, there were sentiments that some of the institutional technical capacity and relationships between government departments are not sufficient to provide effective solutions to clean and sustainable cooking problems that are complex and multi-sectoral in nature, but it is the opinion of the MTR team that this risk can me overcame by proper training, sensitization and good political will.

During the field survey and observation, the MTR team also noted that there are other residual institutional framework and governance risks to sustainability that can emanate from land ownership policy, this is for example the difficulties of acquiring permission to use community land for establishment of woodlots or accessing the state forest reserves to establish new forestlands, however, as stated above, this risk can be mitigated through proper sensitization and political good will and leadership skills.

3.4.4 Environmental Risks to sustainability

The MTR team did not find any significant environmental risks that may jeopardize continuity of the project outcomes. Indeed, under SFM Project, the resilience of the local communities will be increased by enhanced access to clean and affordable cookstoves and fuels suited to deal with current and future climate change impacts. Furthermore, the capacity of local communities to design and implement sustainable fuel management system (SFMS) will be increased. Undeniably, SFM Project's interventions will increase the capacity of local communities to adapt to climate change.

4.0 CONCLUSIONS, RECOMMENDATIONS AND LESSONS LEARNT

In this section, the MTR team outlines key evidence-based conclusions or overarching statements, in light of the findings described in section 3.0 above. Furthermore, these section lists a few recommendations that are precise, accurate, and succinct and include suggestions that offer critical intervention that are specific, measurable, achievable, and relevant and time bound (SMART).

4.1 Conclusions

Having considered the MTR findings, the evaluation team do make the following conclusions regarding the performance of SFM Project:

a) Given the circumstance in the firewood sector, the SFM Project is timely, this based on status and trends statistics of the deforestation and forest degradation coupled with imbalance and less functional energy mix in the country's economy;
b) The development of renewable and efficient cooking technology and managing of the firewood demand have been undertaken within the framework of national and local supply chain of the forest and firewood sectors;
c) The key ingredients for success of the SFM Project have been designing and implementation of effective training and capacity building instruments and focusing of the female gender most critical areas of reducing vulnerability – include addressing climate change and creating sustainable livelihoods for women;
d) Ownership of the project was well envisioned – but can still be enhanced , e.g. state governments are vigorously involved in implementation, some sizeable land have been allocated by communities and state governments for establishment of woodlot, though this should significantly be scaled up / increased if the 53,003 hectares of combine forestlands and woodlots target of the Project is to be achieved;
e) The project has, to great extent been based on result and resource efficiency and effectiveness utilization framework (RREEUF). Most of the government /state project offices have been able to effectively manage their resources in better ways. State projects offices have been utilizing UNDP Harmonised Accounting and Transfer System, whereby payment requests are made and then suppliers are paid directly by UNDP;
f) To great extent the project is an eye opener in regard to Nigerian National Sustainable Energy Provision with sectors relying on firewood;

g) Female gender is a key consideration in realising the objectives of the SFM Project, a good example is in clean cookstove manufacturing where women like Mrs. Happy Amos (Managing Director and founder of clean cookstove enterprise called Roshan Global Services Ltd) and Mrs. Binta Yahaya (CEO and founder of clean cookstove enterprise called Greenland Fati Gold Services) have been effectively enabled to start clean cookstoves manufacturing and distribution in various parts of the country;
h) SFM Project is expected to achieve greater environmental, biodiversity and climate benefits once all the activities outlined are successfully implemented;
i) To great extent, targets in component 2, 3 and 4 are being realised, however, component one on increasing sustainable supply of firewood has lagged behind largely because of lack of enough land allocated for woodlot establishment plus lack of enough funds. REDD + hasn't come through after initial assessment, setting targets on new forestlands and woodlots and putting across some commitment of availing funds;
j) Nigeran Land Tenure system (NLTS) is a major hinderance to the realization of component 1 targets, however this can be overcame by why of engaging States Governments in signing MoUs to providing states' forest reserves and a well laid out framework for allowing community to access sustainable firewood and other forest resources from woodlots and new forestlands established in States' forest reserves;
k) For sustainability of the SFM Project outcome, the SFM Project management should truly create ''Community forestry'', which will be brought into existence when the local communities will be fully enabled to play a significant role in the states' forest reserves and community woodlots use decision-making and the communities are satisfied with their involvement and benefits from the management of the surrounding forest reserves / woodlots and its resources; and
l) Furthermore, the MTR team did find out that the Project has started to realise immediate result like increased income for entrepreneurs, improved environmental and household's health situations, created various permanent and temporary jobs and enabled clean cookstove technologies and skill transfer to the beneficiaries. The MTR team noted that the Project is significantly contributing to the realization of the UN SDGs, below is a snippet of how the SFM Project is contributing towards realization of UN SDGs where the project has the greatest and most direct impacts:

SDG 12: Ensure Sustainable Consumption and Production Patterns

- *Section 12.1 – The project will contribute to the country's implementation of the 10 Year Framework of Programmes on Sustainable Consumption and Production Patterns. All countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries.*
- *Section* 12.2 *– will assist Nigeria to achieve the goal target which states that; ''by 2030, achieve the sustainable management and efficient use of natural resources''.*
- *Section* 12.7 *– SFM Project will promote public procurement practices that are sustainable, in accordance with national policies and priorities.*
- *Section* 12.8 *- will assist Nigeria to achieve the goal target which states that; ''by 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.*

SDG 15: Life on Land; Protect, Restore and Promote Sustainable use of Terrestrial Ecosystems, Sustainably Manage Forests, Combat Desertification, and Halt and Reverse Land Degradation and Halt Biodiversity Loss.

By and large, SFM is dealing with enhance management of forest ecosystems in the country. By adopting sustainable fuelwood management, SFM Project requires the implementors to conceptualise and deals with forest ecosystems as a whole. This approach will enable assist the country achieve SDG 15 aim of promoting sustainable forest management and halting deforestation by 2020, restoring degraded forests and increasing afforestation and reforestation. In brief, SDG 15 sections / targets that the Project will assist to achieve include;

- *Section 15.1 - By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.*
- *Section 15.2 - By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.*
- *Section 15.5 - Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.*
- *Section 15.6 - Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed.*
- *Section 15.9 - By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts*

- *Sub-section 15a - Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.*
- *Sub-section15b - Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation.*

SDG 1: End extreme poverty in all forms by 2030

SFM Project is and will continued to increasing incomes and creating sustainable jobs in the country. Key targets for the Goal that the Project will promote include;

- *Section 1.2 - By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.*
- *Section1.3 - Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable.*
- *Section 1.4 -By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.*
- *Section 1.5 -By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.*
- *Sub-section – 1.a Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions.*
- *Sub-section 1.b - Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions*

SDG 13: Climate Action, Take Urgent Action to Combat Climate Change and Its Impacts.

SFM Project, is significantly motivated by addressing causes of climate change and dealing with current and future climate change induced negative impacts. In regard to SDG 13, the Project will enable the country to achieve the following targets;

- *Section 13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.*

- *Section 13.2 -Integrate climate change measures into national policies, strategies and planning.*
- *Section 13.3 -Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.*
- *Sub-section 13.a -Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible.*
- *Sub-section 13.b -Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities.*

SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

To great extent, SFM Project is being driven by international organizations (UNDP and GEF) in partnership with the national institutions in addressing challenges of accessing to clean, renewable and efficient cookstoves and fuels to enable reduction of health, environment and climate change impacts in the country. In regard to SDG 17, the SFM Project will support the country achieve the following targets:

- *Section 17.1 - Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection.*
- *Section* 17.2 - *Developed countries to implement fully their official development assistance (ODA) commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries.*
- *Section 17.6 - Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.*

- *Section 17.7 - Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed.*
- *Section 17.16 - Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries.*
- *Section17.17 - Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.*

As per MTR Consultant, the overall SFM Project rating is that it SATISFACTORY.

This is because most of the Project planned interventions outcomes are all beyond the midterm targets and are above the expected 50% achievement compared to the end term targets. What is remaining is to find innovative ways to fast track the achievement of increasing supply side of the sustainable forest management system among other technological quality refinement, increased awareness and enhanced financial and human resource support of the Project. The target of realising 50,000 hectares of new forestlands is ambitious, however, with proper mobilisation of human, technical and financial resources, including extending the SFM Project to a second phase will enable the aforementioned target to be achieved, of which it will be a significant milestone for the entire SFM Project aspiration and vision.

4.2 Recommendations

The MTR team does make the following recommendations in order to make the project realise set outputs, outcomes and achieve desired impacts:

No.	Key Aspects	Brief Description	Responsibility
1.	Capacity building and improvement of the clean cookstove supply chain /research, design and production ecosystem.	The current Multifunctional Platform (MFP) or demonstration centres should not be allocated to individual entrepreneurs given that the initial design/intent and communication to the communities was to have the communities manage the three established MFPs. The Forest Management Committees (FMCs) and/or woodlots sustainable land management committees (Woodlots SLMC) should oversee the management of the MFPs with the guidance of Local Government Councils (LGC) within the Local Government Area (LGA). The MTR team assessed the current use of MFP in Saminaka community in Kaduna and found out that the current occupier - Greenland Fati Gold Services is using the facility sections as follow: - Revenue collection desk - Production / fabrication areas - Show room - Store for raw materials - Restaurant – though has not started There are however, strong community opposition from community for Greenland Fati Gold Services to continue using the facility even if the owner has paid about 1.3Million Naira (USD 3,611) as a consideration to purchasing a section of the MFP and rent consideration for a couple of years. Based on the above, and notwithstanding the recommendation above, the MTR team further to recommend the Project management to consider the following addition recommendations: 1. All the MFPs to be converted to Community Learning Centres (CLCs). The CLC should then be constituted of the following compartments: Inquiry desk, information/ business centre with small library, ICT services were local pay reasonable charges, environmental video facility for the locals to learn on environmental conservation strategies / approaches, the CLC should also have an administration office, a room for showcasing various environmental products and services -	-ECN/PMU -State governments -LGA/LGC -Private investors -FMCs -Wood SLM Committees -MFIs & MFBs -Federal Ministry of Environment -Federal Ministry of Finance, Budget & Planning -Development Partners -Other relevant federal states ministries and agencies -Civil society -Beneficiaries

No.	Key Aspects	Brief Description	Responsibility
		more specially cookstoves and clean fuels, there should also be a restaurant that uses clean stoves and fuels and locals should pay reasonable amount for foods offered at the restaurant – restaurant can also be used to promote local foods and balanced nutrition. Adjacent to the CLC should a demonstration tree nursery and woodlot. There should also be an adjacent local clean cook stove fabrication shed, he / she could also venture in alternative clean cooking fuels. 2. Establish in each of the three states a Centre of Excellence (COE). The COE should link with other learning and R&D institutions in the country and outside the country in order to improve quality and quantity of cook stoves produced in the country. The COE should have the following sections / compartments: -Inquiry desk/ office -Research and design section -Administration office -Show room -Library (more elaborate) -Restaurant to promote clean and sustainable cooking -ICT services section (more like the community learning centre but more elaborate) 3. Establish one in each of the three states a state of the art clean cookstove parts fabrication factory. The factory will be a clean cookstove parts fabrication factory with the best machinery to do so. The fabricator shall not be allowed to finish the cookstoves, but to supply best-made specific parts to the cookstoves to manufactures who will assemble the final products at their cottage industries. 4. Establish at least two clean cookstoves and alternative fuel manufacturers in each of the three states.	
2.	Mobilization of more financial, technical and human resources for promoting the achievement of all the SFM Project expected outcomes.	From the huge target of realising about 50,000 hectares of new forestlands, to the need on significantly creating awareness of cleaning cookstoves, enhancing the purchase of critical numbers (more than 20,000) of clean cookstoves and fuels, huge need for improvement in the efficiency, quality and affordability (pricing) of the clean cookstoves, need for improved sustainable fuelwood supply chain and the large gaps in creating enduring renewable energy (RE) and energy efficient (EE) heating and cooking	-ECN/PMU -State governments -LGA/LGC -Private investors -FMCs -Wood SLM Committees -MFIs & MFBs -Federal Ministry of Environment

No.	Key Aspects	Brief Description	Responsibility
		technological financing mechanism in the country; there is a need for the Management of the SFM Project to unreservedly seek consultative multi-stakeholders forums that will seek ground-breaking ways of mobilizing more human, financial and technological resources – especially using participatory rural appraisal (PRA)approaches. Mechanisms like establishment of a National Clean Cooking Financing Mechanism / Fund and Financial Deepening Fund for supporting access of clean cooking technologies by industrial, institution and domestic users should be established.	-Federal Ministry of Finance, Budget & Planning -Development Partners -Other relevant federal states ministries and agencies -Civil society -Beneficiaries
3.	Awareness creation and training	Though the MTR team found out that significant training and awareness creation has taken place, it also came out from the assessment that more of training and awareness is required in order to enable the SFM Project to reach critical mass for creating the desired transformation. The fuelwood sector has huge a burden of traditional disempowering beliefs and practices and to transform the sector, more people need to be trained and sensitized on the 'workings' of sustainable, clean and affordable cooking technologies. In this regard, the MTR team do recommend the following: • More awareness and training should be undertaken for the existing and potential stakeholders and beneficiaries. Innovative awareness approaches like use of social media (Twitter, Facebook, Instagram, WhatsApp) as well as print and electronic media should be used. • Road shows need to regular and should contain enough clean cookstoves plus enough funds for providing credit facilities to consumers. Federal Government, State, Local Government Areas and traditional leaders should be involved in sensitization prior and during the road shows. • NOA should be used in advocacy and awareness creation in the country. This because NOA has experience in the involve of women in renewable energy and environmental conservation and endeavours of the National Agency for Great Green Wall (GGW) which is dealing with desertification in the northern region of the country. In addition, NOA Chief Orientation and Mobilization Officers (COMOs) have good experience with the Sokoto State project on women and climate change.	-ECN/PMU -State governments -LGA/LGC -Private investors -Development Partners -Other relevant federal states ministries and agencies - Civil and government agencies organizations -Beneficiaries

No.	Key Aspects	Brief Description	Responsibility
		• Furthermore, cost -benefit scenarios should be illustrated to communities for them to appreciate the project's interventions. For example, health and income benefits and results of unsustainable utilization of forest resources e.g. climate change. • There is need to create awareness to the youth for them to become future manufacturers of cook stoves among other clean cooking technologies (fuels) a good example is the 1973 national youth sensitization program that aimed at empowering the youth to becoming the driving force for local manufacturers. Such youth awareness program with the SFM Project should focus on illuminating the opportunities within the whole value chain of clean cooking technology - including contingency industries like insurance and banking services. • More need to be done in terms of sensitising the supply chain to take up loans with MFIs and MFBs. Relevant federal, state and local government institutions should lead this rather than financial institution in order to create trust of the process. • Enhance continued uptake of technological through civil and government agencies organization throughout the country. This is because civil and government agencies organization are capable of quick uptake of technology e.g. Cookstoves through Nigeria Police Officers Wives Association (POWA) • Technological and production capacity to be created at the universities, colleges, and Technical and Vocational Education and Training (TVET) institutions in order to support the industry in supply chain growth and development.	
4.	Land tenure system and achievement of the new forestlands and woodlot targets.	Given that currently the SFM Project aims to achieve the target of establishing new forestlands and woodlots through acquisition of community lands, and the fact that not many communities and local leadership want to release land to the woodlot or forestlands establishment, and in that they prefer growing of various cash and food crops to these community lands. The MTR team do recommend the Project Management and other relevant stakeholders to consider woodlot development and establishment of new forestlands to be carried out as a first priority in State Forest Reserves, and in second priority in the Community Lands and third priority in Private Lands. The State Governments should however, ensure that there is a well laid out framework for allowing	-ECN/PMU -State governments -LGA/LGC -Private investors -Development Partners -Other relevant federal states ministries and agencies -Beneficiaries

No.	Key Aspects	Brief Description	Responsibility
		community to access sustainable firewood and other forest resources from woodlots and forestlands established in States' forest reserves.	
5.	Pricing of the clean cookstoves	Currently, most the retailers and consumers of clean cookstove indicated that average price of charcoal and fire wood clean cookstove was about 5000(USD 14) and 4000 (USD 11) Naira respectively. These prices were indicated to be beyond the BOP consumers and they did compare the prices with the retail price of LPG cylinder plus gas which was averaging to 7000 Naira (USD 19). The widely recommended prices were 3000 Naira (USD 8) for charcoal and 2000 Naira (USD 6) for firewood clean cookstove. Based on the aforementioned, the MTR team do recommend the SFM Project Management to consider and roll-out various innovative ways to reducing clean cookstoves prices. This will ensure that that the entrepreneurs are selling the cook stoves and are at least making meaningful profit margins for their business sustainability. Mechanisms like establishment of a financial deepening financing mechanism for the clean cooking supply chain and subsidising the retailing of clean cookstoves should be sort and implemented. The financial deepening is a mechanism that enable creating value through financial inclusion which generate sustainable improvements in the livelihoods of lower-income households through reduced vulnerability to shocks like climate change, increased incomes and employment. In actual sense, the clean cookstove financial deepening mechanism would involve for example where cookstove and clean fuel producers are given a revolving fund to spar reduced cost of production and push the benefits downward the value chain to allow consumer obtain sustainable and clean cooking technology at an affordable price hence enabling BOP consumers to create sustainable livelihoods, become more climate change resilient and make profits from their businesses.	-ECN/PMU -State governments -LGA/LGC -Private investors -Development Partners -Federal Ministry of Finance, Budget & Planning -Other relevant federal states ministries and agencies -Banks, MFBs & MFIs -Beneficiaries
6.	Project implementation supervision, monitoring and evaluation	More inspection and timely capture of data for woodlots, tree nurseries establishment and cook stoves distribution should be ensured. PMU/ECN should have at all time the real-time data and information on the SFM Project Progress towards	-Federal Ministry of Environment -ECN -PMU

No.	Key Aspects	Brief Description	Responsibility
		Results. Using innovative Project real-time data and information like GIS, GPS, Remote Sensing as well as Integrated Database Management Systems should be introduced to enable creation of a real-time dashboard visualization and analysis of the Project progress on implementation of various interventions. Grant and co-financing administration by MFBs and MFIs to beneficiaries should be robustly monitored and assessed. Inspection, Monitoring, Evaluation, Accountability and Transparency at the state level should be enhanced, more especially if the state forest reserves (FR) are taken as the main approach to achieving the new forestlands and woodlots targets. Indicators and targets can be modified to fit UN SDGs e.g. SDG 7 clean and affordable energy among other Project's indicators and targets. GHGs baseline assessment should be undertaken in order to establish practical target of reduction per state. Further consultation with stakeholders and beneficiaries should be undertaken at the state and national levels to close gaps on expected outcomes and targets in the next phase. Representatives of PSC should continue undertaking regular M&E visits to project sites and the PSC and PMU should continue to enhance Project coordination and communication among various stakeholders, beneficiaries, governments and development partners. In addition, PSC need to meet more frequently, at least quarterly. The process of recruiting of MFBs and MFIs has been transparent, accountable, flawless and effective. There were a few delays in the process of establishment of a working management framework as well as recruiting the correct MFBs and MFIs, but these were addressed promptly. The disbursement of grants shown in **table 14** later in this section, is an indication that the grants were disbursed and the SFM Project 's envisioned clean cookstoves and fuels financing model is bound to be realised, however, it is the observation of the MTR team that a bit more robust consultation between Green Bank of Nigeria, MFBs, MFIs and	-State Governments Ministries and Agencies

No.	Key Aspects	Brief Description	Responsibility
		SMEFUND (the fund manager) should be safeguarded in order to find fast, concise and clear solutions to challenges that may arise in the disbursement, loaning and management of the grants. The MTR team also found out that the approaches or actions applied for the challenges identified in **table 15** by SMEFUND were appropriate and effective. The MTR team opinion on the fund's disbursement and loan monitoring and assessment framework summarised in **table 16** is quite comprehensive, however, the application and compliance of the framework by the MFBs and MFIs should be closely monitored and regularly audited, say twice per year. The best in class after disbursement of second batch of grants could be considered for further support as the SFM Project lobby and access more funds to support the sustainable fuelwood management supply chain in the country.	
7.	Consumer and environmental protection, safety and quality improvements	Aspect of consumer rights regarding the clean cooking products like entitlement to clean and safe environment and inclusion local content should be monitored and where there are deficiencies getting corrected. On the other hand, aspects of technology safety and compliance to environmental quality standards should be monitored and where necessary enforced or enterprises guided or supported in complying with the requirements. good. Competition and consumer protection should also ensure that there is no monopoly of technology and standards are maintained as well as price. More technology and licenses should be availed in order to spar production of sustainable charcoal, that efficient and effective technology for carbonization of wood fuel to charcoal. Quality and quantity of Kaolin and paint in the casing of cook stoves should be standardised to safe levels. Top sides of cookstoves should also be made rust free because during cooking water, salt and other compound tend to affect the top part of cookstove either through rust of corrosiveness. Cookstove handles should made more non-heat conducting by using material like fibre and wood as well ensuring / leaving appropriate distance from the main body of the cookstoves and handles to prevent burning and injury to the users.	-The Federal Competition and Consumer Protection Commission (FCCPC) -Standards Organisation of Nigeria (SON) -National Biosafety Management Agency (NBMA) -National Environmental Standards and Regulations Enforcement Agency (NESREA)

No.	Key Aspects	Brief Description	Responsibility
		An effective surveillance or certification framework for the clean cookstoves should be put in place by the federal or state governments.	
8.	Sustainability of the SFM Project outcomes	The SFM Project Management, Government of Nigeria and development partners could consider extending the SFM Project to Phase 2 and expand to other states. SFM Project phase 1 to be considered as a pilot phase. This will enable the Projects gains to be consolidated as the Project gear up to entrenching sustainable changes in the fuelwood supply chain in the focus states as it expands to other states. Clean cooking products manufacturers, wholesalers and retailers should be guided on how to diversify their enterprises in order to create sustainable clean cooking business models. The entrepreneurs could seek to include clean cooking fuels, food and other consumer products in the list of items traded by their enterprises. Learning from other related projects will also be critical to the sustainability of SFM Projects outcomes as well as enhanced partnerships and collaboration between various actors in the sustainable fuelwood management framework. For sustainability of the SFM Project outcome, the SFM Project management should truly create ''Community forestry'', which will be brought into existence when the local communities will be fully enabled to plays a significant role in the states' forest reserves and community woodlots use decision-making and the communities are satisfied with their involvement and benefits from the management of the surrounding forest reserves / woodlots and its resources More of participatory approach should be enhanced in order to ensure sustainability of the Projects outcomes including actual enterprises profitability. ECN should continually strengthen monitoring, evaluation and coordination for the SFM Project implementation. M&E should be made more effective and robust by introduction of technology lie GIS, GPS and remote sensing, ECN should continue working with various stakeholders in improving existing (or developing new ones) policies controlling firewood supply chain / market.	-ECN/PMU -State governments -LGA/LGC -Private investors -FMCs -Wood SLM Committees -MFIs & MFBs -Federal Ministry of Environment -Federal Ministry of Finance, Budget & Planning -Development Partners -Other relevant federal states ministries and agencies

No.	Key Aspects	Brief Description	Responsibility
		State government could strive to increasing their human resource looking after the forest reserves. During the MTR exercise, the MTR team noted that the forest reserve guards were far much outstretched. Where feasible, the SFM Project, should eventually be converted to continuous government program and part of a long-term plan and policy position. More stakeholders and beneficiaries should be brought on board to make the project broader and national; this will enable the SFM Project interventions to be replicated in other states in the country. As the SFM Project continues, consideration should made to allocate more Grants to MFIs and MFBs as cookstoves market share growth and hence cookstoves demand increases as well as actual sales. Furthermore, more MFIs and MFBs could be considered for the revolving grant disbursement. Specific tree species should be identified in each focus state and aggressively establish of woodlots and new forestlands in the following types of land tenure systems in terms of their priorities as listed below: iv. States forest reserves v. Community lands vi. Private land. Develop grand plan for the SFM Project forestlands and woodlots development and mobilise enough financial resources in the next two years and possibly put a business case for extension of SFM Project if said targets are not achieved - Federal and State governments should be involved. Fast maturing tree species should be involved for the establishment of tree woodlots and new forestlands. Establishment of woodlots and new forestlands should be decentralised by way of involving communities after carrying out community rural appraisal (CRA). This would enable the Project to accessing free or affordable labour, buy in by the communities and identification of functional solutions for the deforestation / degradation, environmental and climate change problems. If the next phase 2 of the Project is approved, then there should be more focus to frontier states where	

No.	Key Aspects	Brief Description	Responsibility
		the problem is more critical / severe. This could mean repackaging the SFM project, redesign or improvement of the Project's execution strategy. Proper timing of tree nurseries establishment and transplantation of various tree species should be established and followed in the Project implementation plan. In should be noted that GEF Grant is an initial catalytic fund and hence more funds must be sort for the SFM Project sustainability. All the Projects' remaining tasks implementation should be intensified in all the states as the Project progress with the end of term stage. Apart from financial and technological support to the sustainable fuelwood management supply chain, Project implementers should also focus on overcoming barriers inherent in the structures built with the key institutional and industrial processes and practices. This include issues of transparency, accountability, governance, corporate social responsibility, corporate sustainability and corporate competitiveness as well as engrained values and principles. It will also be good for implementers of the SFM Project to identify and promote various alternatives clean cooking energy sources like biofuels, biogas, solar, wind, LPG and briquettes among others. Technology for preventing or reducing blackening of cooking pots / containers used in improved firewood cookstoves should be identified and rolled out to enable increased uptake of the firewood cookstoves. Retailers of clean cookstove should be allowed to select clean cookstove models that are appealing to their local markets in order to enable accelerated uptake of the cookstoves. Better approach / ways of working with states and local government councils on the placement of Projects cookstove kiosks should be found and rolled out in order to address the impediments that have prevented installation of all the 90 or so kiosks supplied to the states. A good example is where a proper agreement between Kaduna Local Government Council and SFM Project could enable entrepreneurs to place their kiosks in free spaces, while being charged affordable license and tax fees. If such an arrangement is in place in Kaduna LGA,	

No.	Key Aspects	Brief Description	Responsibility
		the 9 remaining kiosks out of the 26 kiosks supplied could be effectively installed for the entrepreneurs. Clean cooking products entrepreneurs should be trained more on business management and book keeping to ensure sustainability of their businesses. There is a need to improve the quality of the bio gel/biofuels in the market. Consumers did complain of it being light and burning fast. Financial support to clean cooking products entrepreneurs should be extended to rural areas in the States for now, it seems most of the financial support has been concentrated in the urban and peri-urban areas. Critical fund mobilisation consultative meeting/s with various development partners, agencies, stakeholders and beneficiaries should be held in order to identify and craft models on how to realise increased funding of the SFM Projects as well as enabling the project to realise its set targets and also explore ways of taking the project to second phase. This will effectively support the Project to solidify gains made so far and also expand to more states in the northern part of the country. As indicated a bit earlier, it is critical for SFM Project to mobilize some financial resources (as more adequate financial resources are being sort) and establish high volume tree nurseries in February 2020. As indicated in tables 17 – 19, the most appropriate time for establishing tree nurseries is October or February, hence, the only viable month of 2020 to propagate seedlings is February in order to transplant in July, 2020. The year 2021 tree seedling will be established in July, 2020. Given that, the MTR team assessed and found that the tree nurseries that were in existence in all the three States, were not adequate to significantly boost the tree planting that will be significant towards going closer to the target of 50,000 hectares of new forestlands and 3003 hectares of new woodlots. The strategic approach that the MTR team recommend for the SFM Project going forward will be to accelerate the rate of establishment of new forestlands and new woodlots, and in this regard, the SFM Project would certainly require a GRAND PLAN. In essence, the Grand Plan of accelerating establishment of new forestlands and new	

No.	Key Aspects	Brief Description	Responsibility
		woodlots would require federal and state governments, plus other key stakeholders and beneficiaries as well as development partners coming together and identify, design, develop and implement a Grand Plan that mobilizes human, technological and financial resources – and more particularly carry out participatory rural appraisals (PRA) to get the buy in of plausible pathways of SFM Project outcomes realization and continuity. In additional to developing a Grand Plan to mobilize resources, and resultant acquisition of funds and other resources, the MTR team recommend that each State's SFM Project key stakeholders to carry out a comprehensive assessment, in addition to what has been identified in table 17 -19 and identify more of tree species required in the state – Community Rural Appraisal will be important for this exercise. The assessment mentioned above should involve establishment of crucial baselines and key success factors, then identification of forest development preferences and their propagation timing as well as their key economic, environmental and socio – cultural benefits (see tables 17, 18 and 19 that show some of the tree preferences that SFM Project's States Focal Point Person identified for the focus of the Project going forward during the MTR exercise) After the assessment and establishment of baselines, the SFM States' Project Management Units should then clearly develop an ACTION PLAN for establishment of community and functional new forestlands and woodlots, after these, State Governments in partnership with SFM Project should ensure that the ACTION PLANS are fully implemented. ***Important Notes:*** • Commencement of tree nursery establishment is also subject to seeds availability (Phenology) of required species, and water availability. Dry season nursery establishment time is shown in the table above. However, there is also rainy season nursery. Here stumps/cuttings from wildlings of desired species are used instead of seeds used in dry season nursery establishment. Dry season nursery is currently on-going in most of our sites. Dry season nursery restocks rainy season nurseries that have been depleted (used to establish plantation). Best time to plant is April/ May in northern CRS and March/July in	

No.	Key Aspects	Brief Description	Responsibility
		southern CRS to enable seedling properly established in the field before rains off season. • Species preference are subject to ecological deviations and socio- economic/ cultural values.	

No.	Name of Financial Intuition	Type of institution (MFI or MFB etc.)	Initial disbursement (ID) amount in $	Date of Disbursement (DD/MM/YY)	Repaid Amount in $	ID Repayment Date (DD/ MM/YY)	Second Disbursement (SD) amount in $	SD Repayment Date (DD/ MM/YY)
1	Communal Rural Entrepreneurial Initiative of Nigeria	MFI	3,333	13/11/19	Repayment not Due Yet		2,222	31/11/20
2	Double Portion Multipurpose Cooperative Society	MFI	3,333	13/11/19	Repayment not Due Yet		2,222	31/11/20
3	CUB	MFB	3,333	13/11/19	Repayment not Due Yet		2,222	31/11/20
4	IC – Global	MFB	3,333	13/11/19	Repayment not Due Yet		2,222	31/11/20
5	PERG Corporate Services	MFI	3,333	13/11/19	Repayment not Due Yet		2,222	31/11/20
6	Owhoede Farmers' Cooperative	MFI	3,333	13/11/19	Repayment not Due Yet		2,222	31/11/20
7	Hamda	MFB	3,333	13/11/19	Repayment not Due Yet		2,222	31/11/20
8	Ekondo	MFB	3,333	13/12/19	Repayment not Due Yet		2,222	31/11/20
9	Unical	MFB	3,333	13/12/19	Repayment not Due Yet		2,222	31/11/20
10	Giwa	MFB	3,333	13/11/19	Repayment not Due Yet		2,222	31/11/20
11	Fahimta	MFB	3,333	13/11/19	Repayment not Due Yet		2,222	31/11/20
12	WISE Nigeria	MFI	3,333	13/11/19	Repayment not Due Yet		2,222	31/11/20

Table 14: SFM Project – Green Bank of Nigeria's Grant Disbursement to MFBs and MFIs*; by SMEFUND Consultant*

***Continued ...Table 14: SFM Project – Green Bank of Nigeria's Grant Disbursement to MFBs and MFIs**; by SMEFUND Consultant*

No.	Name of Financial Intuition	Type of institution (MFI or MFB etc.)	Initial disbursement (ID) amount in $	Date of Disbursement (DD/MM/YY)	Repaid Amount in $	ID Repayment Date (DD/ MM/YY)	Second Disbursement (SD) amount in $	SD Repayment Date (DD/ MM/YY)
13	Eeman Corporate Business Ltd	MFI	3,333	13/11/19	Repayment not Due Yet		2,222	31/11/20
14	Flexible Credit and Integrated Services Limited	MFI	3,333	13/11/19	Repayment not Due Yet		2,222	31/11/20

***Table 15: Funds Disbursement and Management Challenges and Ways of Addressing the Challenges;** by SMEFUND Consultant*

No.	Challenge	Ways Challenge have been addressed
1.	Getting timely update on the Green Bank	Performed a frequent weekly follow-up and aided where needed.
2.	Getting the cooperation of the National Association	Involved the National Association as a Guarantor and Regulatory Body.
3.	Effective communication needs between the MFI and the Managers	To improve communication through a bi-monthly call to understand their challenges and how to support them effectively

Table 16: Funds Disbursement and Loan Monitoring and Assessment Framework; *by SMEFUND Consultant*

Introduction
After the initial stakeholders meeting with members of the National Association of Microfinance Banks and Association of Non- Banking Finance Institutions, SMEFUND Consultant proceeded to share a call-out for an Expression of Interest.
Funds Disbursement Steps
1. Expression of Interest 2. Capacity Development Training for all Beneficiaries. 3. Verification of Documents 4. Due diligence and Selection Criteria. 5. Grants Award Letter to the SIX Grant Beneficiaries. 6. Acceptance of the Grant Award Letter. 7. Creation of the Green Bank Account. 8. Funding of the Bank Accounts with allocated Grants Amount. 9. Confirmation letter of the allocated funds.
Loan Monitoring Framework
In order to monitor the loan assessment, a digital monitoring platform was created which is the Green Bank SFM Portal. Beneficiaries are expected to upload the loan beneficiary details, the loan amount, tenure due date, and expected payment date. Below are the metrics captured on the Green Bank Portal: Wallet Balance, Amount Disbursed, Total Repaid, Total Pending and Loan Beneficiaries.
Project Reporting Format
MFI's/MFB's are required to give a quarterly progress report of the project. Metrics to be captured in the report include: • Total amount disbursed • Total amount paid • Total amount unpaid • Total number of defaulters • The number of beneficiaries – customers and entrepreneurs • The number of stoves sold • Graphical illustrations should be used in explanation. • The impact so far on entrepreneurs with testimonies from 2-3 entrepreneurs and customers. • Impact on the Financial Institution Important Notes / Guides • *The Q1 Report is due for submission in February 2020.* • *Most of the loans disbursed are yet to be recovered from the loan beneficiaries as the tenure hasn't expired.* • *More so, the financial institutions will receive the last tranche of payment once they utilize 50% of the first fund disbursed.*

Table 17: Shows some of the Cross Rive State identified forest development preferences and their propagation timing as well as their key economic, environmental and socio –cultural benefits.

S/N	Tree Species	Years to Maturity	Best Time of the year to Start Preparing Tree Nursery	Best Time of the year to transplant the tree seedlings	Key Economic, Environmental and Socio – cultural benefits	Key Remarks / Instructions
1	*Gmelina aborea*	3>15+	October/Dec	April/ July	Good fuelwood, timber, furniture, nitrogenous fixing hence good in agroforestry system with short rotation crops. Use as shade tree for coffee and cocoa. Leaves and fruits used as fodder hence good in silvopastoral system. Has aesthetic value	- Exotic, in rain forest swampy areas, trees mature faster, pruning of branches for fuelwood commences from 2 year e.g. as in Ikot Ansa plantation - leaves use as fodder for goats
2	*Tectona grandis*	3> 15+	October/ February	April/ July	Good fuelwood, charcoal, timber, poles/pulp for paper/post,	Exotic, in rain forest swampy areas, trees mature faster, highly fire resistant hence excellent in semi-arid and arid areas where fire out-breaks is prevalent. Reaches maturity faster in rainforest zone
3	*Cassia simens*	6>10+	October/ February	Dec/ June	Good fuelwood, timber, nitrogenous fixing hence good in agroforestry system, Good for fodder	Endemic
4	*Khaya ivorensis*	4>15+	October/ February	April/ July	Good fuelwood, timber, charcoal, nitrogenous fixing	Endemic
5	*Brachystegia eurycoma/ nigerica*	6>14+	October/ February	April/ July	Timber, nitrogenous fixing, fuelwood, Silvopatural and seed use for food	Endemic, Seed of high food value. Extremely important forest non timber product, of very high commercial and export value
6	*Afzelia bipendensis/ africana*	10>22+	October/ February	April/ July	-Good fuelwood, -Good timber, -good charcoal - nitrogenous fixing -seed use for food	Endemic, Seed of high food value. Extremely important forest non timber product, of very high commercial and export value
7	*Terminalia ivorensis*	6>15+	October/ February	April/ July	-Good fuelwood, -Good timber, -good charcoal	endemic
8	*Pterocarpus Osun*	6>15+	October/ February	April/ June	-Good fuelwood, -Good timber, -good charcoal - nitrogenous fixing -seed use for food	endemic

					-good wood for carving	
10	*Parkia biglobosa*	6>15+	October/ February	April/ July	Good for firewood, charcoal and timber seed use for fodder and food, nitrogen fixing, good in afro-forestry	Endemic Seed of high protein value
11	*Eucalyptus* *Camaldulensis/ globulus*	4>10	October/ Dec	April /May	Good for windbreak, firewood, aesthetics, landscaping, electric poles, timber and furniture	Exotic Highly recommended for planting in northern derived savanna region of CRS
12	*Irrivingia gabonensis*	4>15+	October/ February	April/ July	Good for firewood, charcoal and timber fruit and seed use for fodder and food	-Endemic improved seed that enhances fast growth is very expensive- sold in IITA, high food value. Extremely important forest non timber product, of very high commercial and export value

Table 18: Shows some of the Delta State identified forest development preferences and their propagation timing as well as their key economic, environmental and socio –cultural benefits.

No	Tree Species	Years to Maturity	Best Time of the year to Start Preparing Trees Nursery	Best time of the year to transplant the tree seedlings	Key economic, environmental and socio-cultural benefits	Key remarks/instructions
1	*Tectona grandis* (Teak)	3 – 5 years	December - February	May - August	Fuelwood for cooking and heating, Carbon sequestration and release of oxygen, stabilize and improve soil quality, reduce storm water runoff/erosion and provide habitat and shelter for wildlife Socio-cultural benefits include improved mental health and wellbeing, reduces stress and improved environmental quality	The objective of management determines the age of maturity. Trees for timber/poles may take up to 10-15 years to mature. It is fire resistant, fast growing and has coppicing ability
2	*Gmelina arborea*	3 – 5 years	December - February	May - August	Fuelwood for cooking and heating, Carbon sequestration and release of oxygen, stabilize and improve soil quality, reduce storm water runoff/erosion and provide habitat and shelter for wildlife	Management determines the age of maturity. Trees for timber/poles may take up to 10-15 years to mature. It is fire resistant, fast growing and has coppicing ability

					Socio-cultural benefits include improved mental health and wellbeing, reduces stress and improved environmental quality	
3	Terminalia spp	3 – 5 years	December - February	May - August	Fuelwood for cooking and heating, Carbon sequestration and release of oxygen, stabilize and improve soil quality, reduce storm water runoff/erosion and provide habitat and shelter for wildlife Socio-cultural benefits include improved mental health and wellbeing, reduces stress and improved environmental quality	of management determines the age of maturity. Trees for timber/poles may take up to 10-15 years to mature. It is fire resistant, fast growing and has coppicing ability

Table 19: Shows some of the Kaduna State identified forest development preferences and their propagation timing as well as their key economic, environmental and socio –cultural benefits.

No	Tree Species	Years to Maturity	Best Time of the year to Start Preparing Trees Nursery	Best time of the year to transplant the tree seedlings	Key economic, environmental and socio-cultural benefits	Key remarks/ instructions
1.	*Isoberlinia doka*	6-10 years	October/ Dec	April /May	- used for joinery, furniture and cabinet work. -Traditionally, it is also used for posts, poles, handicrafts and agricultural implements. -It is suitable for light construction, flooring, panelling, moulding, ship building, railway sleepers, boxes, crates. -The wood is widely used for fuel or made into charcoal.	Wood ash is used in soap making. The inside of the fruits is used to scour earthenware pots. Several parts of the tree have traditional medicinal uses.
2	*Gmelina arborea*	3 – 5 years	December - February	May - August	Mainly used for Timber and fuelwood	has medicinal value
3.	*Tamarindus indica,* indigenous spp.	3 – 5 years	October/ Dec	April /May	Used for wood, firewood and has edible pulp from the fruits	emulsify cholesterol
4.	*Tectona grandis (Teak)*	3 – 5 years	October/ Dec	April /May	Hardwood up to 30m, deciduous, for wood & Furniture, Ornamental.	It is fire resistant, fast growing and has coppicing ability.

Continued ... Table 19: Shows some of the Kaduna State identified forest development preferences and their propagation timing as well as their key economic, environmental and socio –cultural benefits

No	Tree Species	Years to Maturity	Best Time of the year to Start Preparing Trees Nursery	Best time of the year to transplant the tree seedlings	Key economic, environmental and socio-cultural benefits	Key remarks/ instructions
5.	*Khaya grandifoliola*	3-4 years	October/ Dec	April /May	African mahogany, as it is commercially called, is a high-priced wood often used in furniture, cabinetry, paneling, veneer, office and shop fixtures, interior joinery, staircase banisters, handrails and domestic flooring because the wood usually dries well and rapidly with a beautiful sheen when polished (Timber Research and Development Association – TRADA, 2004). The timber is water-resistant and it is therefore used in ship-building.	The bitter-tasting bark is used in traditional medicine. It is widely used as a treatment against fever caused by malaria, whilst decoctions are also taken to treat stomach complaints including gastric ulcers and diarrhea caused by intestinal parasites; pain after childbirth; and gonorrhea. The pulverized root bark is applied externally to treat skin diseases. Regeneration is poor away from parent individuals and is best at the savannah-forest boundary. The tree is classified as 'Vulnerable' in the IUCN Red List of Threatened Species (2010).
6.	*Albizia zygia*	4-5years	October/ Dec	April /May	Albizia zygia is a fast-growing, medium-sized deciduous tree with a spreading crown and a graceful architectural form. It can range in height from 9 up to 30 meters and, when growing in the forest, can produce a clean bole up to 15 meters tall. A multipurpose tree, it is used locally in traditional medicine, and is also sometimes used for food and other commodities. Planted as an ornamental shade tree, roadside tree and fire break, it also has some importance on the international timber market, although it is considered a lesser-used species.	Albizia zygia is confirmed as nodulating and capable of symbiotic nitrogen fixation both in the wild and under greenhouse conditions when inoculated with cowpea Bradyrhizobium. The species also showed tolerance to acidic soil and water stress, which are major constraints to plant grown on degraded cocoa lands. All this makes the species a suitable candidate for cocoa rehabilitation and the provision of shade for cocoa in Ghana in particular and the West African subregion in general.

4.3 Key Lessons Learned During the MTR

Based on the findings of this Midterm Review of the SFM Project, the following lessons and good practices have been identified:

1. For the success of national sustainable fuelwood management project (SFMP)to succeed, huge and reliable resources are required, the resource required include; financial, technological, technical and human resources. Based on the above, the project designer, developers and implementers must mobilize key and relevant partners from public, private, development partners and civil societies. The national, regional and local government administration should work harmoniously, seamlessly as well as purposively in order to realise the expected SFMP outputs, targets, outcomes and impacts;

2. Some of the critical actions for establishing and managing a sustainable fuelwood management project include: the comprehensive mapping of the forest resource; carry out further baseline studies, development of a national/regional/local forest resource management plan, and criteria and indicators for woodfuel sustainable production and consumption , along with protocols for monitoring and feedback mechanism; then actual carrying out afforestation, reforestation and protection of the forest and woodlots; then provision of alternative woodfuel sources; and the involvement of communities in the sustainable management of the forest resource;

3. It is important to set reliable and achievable project's targets; this has to be balanced with consideration of pushing the boundary and remaining ambitious and not over ambitious. Indeed, for so long, Quality, Cost, and Time become an Iron Triangle for measuring project success. In essence, it is important to assess the project's targets with the consideration of the aspects of Quality-Cost-Time in a project under uncertainty. Knowing the probability to meeting the three project's aspects is important, especially during the project planning. Proper consideration of project's Quality-Cost-Time aspects / parameters leads to project management gaining information insights about the confidence level to meet various project's targets and potential risk in the future. If we define quality as: 1) a standard or requirement to be met with failed and successful probability; 2) it has consequences or impact on additional cost and/or additional time for nonconformity; and 3) the time and cost have their own relationship and form of uncertainty, here is the approach or method to evaluate probability of a project whether it met its Quality-Cost-Time target under uncertainty. This cab be called the Project Reliability;

4. Partnership, collaboration and community rural appraisals are crucial tools for ensuring success of sustainable fuelwood management projects;
5. Level of clean and efficient cookstoves sales are significantly defined or controlled by availability of enough clean cookstoves in the market, these cookstoves should be safe and secure to use, and should be affordable to the consumers;
6. For sustainable fuelwood management project to succeed, various traditional / conventional practices and briefs must be overcome; and
7. Every day millions of women and girls in Nigeria breathe in harmful smoke while cooking and spend hours walking far distances to secure cooking fuel. Reliance on polluting, open fires and inefficient fuels leads to health problems like emphysema, cataracts, cancer, heart disease, etc. and also adds economic burdens that disproportionately impact women and girls. In many ways, women play a crucial role in the widespread adoption and use of cleaner and more modern household cooking solutions because of their central responsibility for managing household energy and cooking. As consumers and users of cookstoves, women are not just victims but a critical component of the sector's ability to scale. For SFM Project, the MTR team noted that women are significantly participating and innovating in the areas of clean and efficient cookstoves and fuels manufacturing, distribution and retailing. Based on the above, it is crucial for women to be fully integrated into the process of designing sustainable fuelwood management projects because without their opinions and input, clean cookstoves and fuels products will not meet their needs and will not be used;

ANNEXES

Annex 1: MTR Terms of Reference

UNDP-GEF Midterm Review Terms of Reference

Consultancy for UNDP-GEF Midterm Review of the Sustainable Fuelwood Management Project in Nigeria

Location	**Nigeria**
Project Title:	Sustainable Fuelwood Management in Nigeria
Application Deadline:	30th September 2019
Type of Contract	Individual Contract – International
Start Date:	October 2019
Assignment Type	Individual Contract (IC) – International
Language Required	English
Duration of Initial Contract	
Expected Duration of Assignment	3 months

1. INTRODUCTION

This is the Terms of Reference (ToR) for the UNDP-GEF Midterm Review (MTR) of the full-sized project titled "**Sustainable Fuelwood Management in Nigeria** (PIMS # 5366) implemented through the Energy Commission of Nigeria (ECN), which is to be undertaken in Q2 2019. The project started on Feb 7, 2017 and is in its second year of implementation. In line with the UNDP-GEF Guidance on MTRs, this MTR process was initiated before the submission of the second Project Implementation Report (PIR). This ToR sets out the expectations for this MTR. The MTR process must follow the guidance outlined in the document Guidance For Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects (http://web.undp.org/evaluation/guidance.shtml#gef).

2. PROJECT BACKGROUND INFORMATION

The Sustainable Fuelwood Management (SFM) project in Nigeria was designed to address the problem of deforestation in Nigeria. Over half of Nigeria's estimated 170 million inhabitants live below the poverty line, with over 70% of the population still relying on biomass for fuelwood. Rapid deforestation is a major concern with over half of the country's primary forests cut down in the last 10 years, exacerbated by rapid population growth of 2.5%. The unsustainable production and utilization of biomass resources represents one of the key drivers of deforestation and land degradation in Nigeria. In response to this challenge, the Government of Nigeria has secured funding from the Global Environment Facility (GEF) for a sustainable fuelwood management project. The project, which began implementation in May 2017, has a GEF grant of $4,410,000 and co-financing of $16,400,000.

The objective of the project is sustainable fuelwood production and consumption to secure the flow of multiple environmental benefits, including carbon storage and sequestration. This will be achieved through i) supply side management (the production and procurement of certified fuelwood from sustainably sourced feedstock from a) woodlands outside the protected forests in Cross River and Delta State in the South and b) from farmer-managed woodlots in Kaduna State in the North and ii) demand side management through the promotion of improved stoves/kilns in the domestic sub-sector as an inclusive business to reduce fuelwood demand, improve health and reduce greenhouse gas emissions.

To achieve this, the project has been divided into four main components:

- ***Component 1***: Sustainable Fuelwood Supply
- ***Component 2:*** Fuelwood Demand Management

- ***Component 3:*** Domestic Industry for Clean Cook Stoves and Other Clean Energy Alternatives
- ***Component 4:*** Financial Models for Sustainable Fuelwood Management

The following outcomes are expected from the project:

- ***Expected outcome of component 1:*** **Models for sustainable fuelwood production demonstrated in:**
  - a. At least 10 communities in Cross River and Delta State leading to:
  - 50,000 ha of forestlands under improved multifunctional forest management;
  - Forest Management Committees (FMCs) created/strengthened in SFM
  - b. At least 10 communities in Kaduna State leading to:
  - 3,003 ha of degraded land restored with Sustainable Land Management measures like woodlots;
  - SLM Management Committee created/strengthened in SLM
- ***Expected outcome of component 2:***
  - Improved awareness and acceptance of alternative (renewable and more efficient) energy technologies for domestic, institutional and industrial sub-sectors in Cross River, Delta and Kaduna States.
  - Increased penetration of improved/alternative energy technologies for domestic needs in targeted communities by at least 20% (BAU: 0.1%);
  - Avoided emissions of 40,000 t CO_2 eq/year from combustion of un-sustainable biomass in inefficient cook stoves/kilns (replaced by more efficient or other alternatives)
- ***Expected outcome of component 3:***
  - Improved efficiency, quality and affordability of domestically manufactured cooking/heating appliances for domestic, institutional and industrial sub-sectors.
  - Strengthened domestic supply chain for EE/RE cooking and heating appliances
- ***Expected outcome of component 4:***
  - Consumer financing model for EE cook stove/kiln successfully operates.
  - Sales of efficient cook stoves/kilns increased by at least 20% in Cross River, Delta and Kaduna State.
  - Investment in sustainable forest management in Cross River and Delta State increased

The project duration is 5 years starting from Feb 7, 2017 and ending Feb 6 2022 with an overall GEF budget of US $ 4,410,000 and co-financed by UNDP US$300,000, National Government (in –kind) 1,900,000, National Government (Grant) US$2,200,000, MFBs/MFIs US$3,000,000, UNREDD+ US$ 4,000,000, SME US$ 2,000,000, ICEED US$2,000,000, DARE US$1,000,000 total budget US$ 20,810,000.The project is nationally implemented (NIM) by the Energy Commission of Nigeria with UNDP Country office support.

3. OBJECTIVES OF THE MTR

The MTR will assess progress towards the achievement of the project objectives and outcomes as specified in the Project Document and assess early signs of project success or failure with the goal of identifying the necessary changes to be made to set the project on-track to achieve its intended results. The MTR will also review the project's strategy, its risks to sustainability.

4. MTR APPROACH & METHODOLOGY

The MTR must provide evidence-based information that is credible, reliable and useful. The MTR team will review all relevant sources of information including documents prepared during the preparation phase (i.e. PIF, UNDP Initiation Plan, UNDP Environmental & Social Safeguard Policy, the Project Document, project reports including Annual Project Review/PIRs, project budget revisions, lesson learned reports, national strategic and legal documents, and any other materials that the team considers useful for this evidence-based review). The MTR team will review the baseline GEF focal area Tracking Tool submitted to the GEF at CEO endorsement, and the midterm GEF focal area Tracking Tool that must be completed before the MTR field mission begins. The MTR team is expected to follow a

collaborative and participatory approach ensuring close engagement with the Project Team, government counterparts (the GEF Operational Focal Point), the UNDP Country Office(s), UNDP-GEF Regional Technical Advisers, and other key stakeholders. Engagement of stakeholders is vital to a successful MTR. Stakeholder involvement should include interviews with stakeholders who have project responsibilities, including but not limited to the Project Steering Committee members, and the Energy Commission of Nigeria (ECN), Federal Ministry of Environment (FMEnv.), Federal Ministry of Finance (FMF), Federal Ministry of Budget and National Planning, Nigerian Alliance for Clean Cookstoves (NACC), National Orientation Agency, Cross River State Forestry Commission, Delta State Ministry of Environment, Kaduna State Ministry of Agriculture and Environment, Standard Organization of Nigeria (SON), Consumer Protection Council, Federal Ministry of Women Affairs, etc. Additionally, the MTR team is expected to conduct field missions to the three States where the project is focusing. The final MTR report should describe the full MTR approach taken and the rationale for the approach making explicit the underlying assumptions, challenges, strengths and weaknesses about the methods and approach of the review.

5. DETAILED SCOPE OF THE MTR

The MTR team will assess the following four categories of project progress. See the *Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects* for extended descriptions.

i Project Strategy

Project design:

- Review the problem addressed by the project and the underlying assumptions.
- Review the effect of any incorrect assumptions or changes to the context to achieving the project results as outlined in the Project Document.
- Review the relevance of the project strategy and assess whether it provides the most effective route towards expected/intended results. Were lessons from other relevant projects properly incorporated into the project design?
- Review how the project addresses country priorities. Review country ownership. Was the project concept in line with the national sector development priorities and plans of the country?
- Review decision-making processes: were perspectives of those who would be affected by project decisions, those who could affect the outcomes, and those who could contribute information or other resources to the process, taken into account during project design processes?
- Review the extent to which relevant gender issues were raised in the project design. See Annex 9 of *Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects* for further guidelines.
- If there are major areas of concern, recommend areas for improvement.

Results Framework/Log frame:

- Undertake a critical analysis of the project's Log frame indicators and targets, assess how "SMART" the midterm and end-of-project targets are (Specific, Measurable, Attainable, Relevant, Time bound), and suggest specific amendments/revisions to the targets and indicators as necessary.
- Are the project's objectives and outcomes or components clear, practical, and feasible within its time frame?
- Examine if progress so far has led to / or could in the future catalyse beneficial development effects (i.e. income generation, gender equality and women's empowerment, improved governance etc...) that should be included in the project results framework and monitored on an annual basis.
- Ensure broader development and gender aspects of the project are being monitored effectively. Develop and recommend SMART 'development' indicators, including sex-disaggregated indicators and indicators that capture development benefits.

ii Progress Towards Results Progress Towards Outcomes Analysis:

- Review the logframe indicators against progress made towards the end-of-project targets using the Progress Towards Results Matrix and following the *Guidance For Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects*; colour code progress in a "traffic light system" based on the level of progress achieved; assign a rating on progress for each outcome; make recommendations from the areas marked as "Not on target to be achieved" (red).

Table: Progress Towards Results Matrix (Achievement of outcomes against End-of-project Targets)

Project Strategy	Indicator (if applicable)	Baseline Level	Level in 1st PIR	Mid-Term Target	End of project Target	Mid-Term Level & Assessment	Achievement rating	Justification for Rating
Objective:								
Outcome 1:	**Indicator 1:**							
	Indicator 2:							
Outcome 2:	**Indicator 3:**							
	Indicator 4:							
	Etc.							
Etc.								

Indicator keys

Green = Achieved	**Yellow = on target to be achieved**	**Red = not on target to be achieved**

In addition to the progress towards outcomes analysis:
• Compare and analyse the GEF Tracking Tool at the Baseline with the one completed right before the Midterm Review.
• Identify remaining barriers to achieving the project objective in the remainder of the project.
• By reviewing the aspects of the project that have already been successful, identify ways in which the project can further expand these benefits.

iii Project Implementation and Adaptive Management

Management Arrangements:

- Review overall effectiveness of project management as outlined in the Project Document. Have changes been made and are they effective? Are responsibilities and reporting lines clear? Is decision-making transparent and undertaken in a timely manner? Recommend areas for improvement.
- Review the quality of execution of the Executing Agency/Implementing Partner(s) and recommend areas for improvement.
- Review the quality of support provided by the GEF Partner Agency (UNDP) and recommend areas for improvement.

Work Planning:

- Review any delays in project start-up and implementation, identify the causes and examine if they have been resolved.
- Are work-planning processes results-based? If not, suggest ways to re-orientate work planning to focus on results?
- Examine the use of the project's results framework/ logframe as a management tool and review any changes made to it since project start.

Finance and co-finance:

- Consider the financial management of the project, with specific reference to the cost-effectiveness of interventions.
- Review the changes to fund allocations as a result of budget revisions and assess the appropriateness and relevance of such revisions.
- Does the project have the appropriate financial controls, including reporting and planning, that allow management to make informed decisions regarding the budget and allow for timely flow of funds?
- Informed by the co-financing monitoring table to be filled out, provide commentary on cofinancing: is co-financing being used strategically to help the objectives of the project? Is the Project Team meeting with all co-financing partners regularly in order to align financing priorities and annual work plans?

Project-level Monitoring and Evaluation Systems:

- Review the monitoring tools currently being used: Do they provide the necessary information? Do they involve key partners? Are they aligned or mainstreamed with national systems? Do they use existing information? Are they efficient? Are they cost-effective? Are additional tools required? How could they be made more participatory and inclusive?
- Examine the financial management of the project monitoring and evaluation budget. Are sufficient resources being allocated to monitoring and evaluation? Are these resources being allocated effectively?

Stakeholder Engagement:

- Project management: Has the project developed and leveraged the necessary and appropriate partnerships with direct and tangential stakeholders?
- Participation and country-driven processes: Do local and national government stakeholders support the objectives of the project? Do they continue to have an active role in project decision-making that supports efficient and effective project implementation?
- Participation and public awareness: To what extent has stakeholder involvement and public awareness contributed to the progress towards achievement of project objectives?

Reporting:

- Assess how adaptive management changes have been reported by the project management and shared with the Project Board.
- Assess how well the Project Team and partners undertake and fulfil GEF reporting requirements (i.e. how have they addressed poorly-rated PIRs, if applicable?)
- Assess how lessons derived from the adaptive management process have been documented, shared with key partners and internalized by partners.

Communications:

- Review internal project communication with stakeholders: Is communication regular and effective? Are there key stakeholders left out of communication? Are there feedback mechanisms when communication is received? Does this communication with stakeholders contribute to their awareness of project outcomes and activities and investment in the sustainability of project results?
- Review external project communication: Are proper means of communication established or being established to express the project progress and intended impact to the public (is there a web presence, for example? Or did the project implement appropriate outreach and public awareness campaigns?)
- For reporting purposes, write one half-page paragraph that summarizes the project's progress towards results in terms of contribution to sustainable development benefits, as well as global environmental benefits.

Sustainability

- Validate whether the risks identified in the Project Document, Annual Project Review/PIRs and the ATLAS Risk Management Module are the most important and whether the risk ratings applied are appropriate and up to date. If not, explain why.
- In addition, assess the following risks to sustainability:

Financial risks to sustainability:

- What is the likelihood of financial and economic resources not being available once the GEF assistance ends (consider potential resources can be from multiple sources, such as the public and private sectors, income generating activities, and other funding that will be adequate financial resources for sustaining project's outcomes)?

Socio-economic risks to sustainability:

- Are there any social or political risks that may jeopardize sustainability of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that the project benefits continue to flow? Is there sufficient public / stakeholder awareness in support of the long term objectives of the project? Are lessons learned being documented by the Project Team on a continual basis and shared/ transferred to appropriate parties who could learn from the project and potentially replicate and/or scale it in the future?

Institutional Framework and Governance risks to sustainability:

- Do the legal frameworks, policies, governance structures and processes pose risks that may jeopardize sustenance of project benefits? While assessing this parameter, also consider if the required systems/ mechanisms for accountability, transparency, and technical knowledge transfer are in place.

Environmental risks to sustainability:

- Are there any environmental risks that may jeopardize sustenance of project outcomes?

Conclusions & Recommendations

The MTR team will include a section of the report setting out the MTR's evidence-based conclusions, considering the findings.

Recommendations should be succinct suggestions for critical intervention that are specific, measurable, achievable, and relevant. A recommendation table should be put in the report's executive summary. See the Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects for guidance on a recommendation table.
The MTR team should make no more than 15 recommendations total.

Ratings

The MTR team will include its ratings of the project's results and brief descriptions of the associated achievements in a MTR Ratings & Achievement Summary Table in the Executive Summary of the MTR report. See Annex E for ratings scales. No rating on Project Strategy and no overall project rating is required.

Table. MTR Ratings & Achievement Summary Table for Sustainable Fuelwood Management (SFM) in Nigeria

Measures	MTR achievements	Achievements description
Project Strategy	N/A	
Progress Towards Results	Objective Achievement Rating: (rate 6-point scale)	
	Outcome 1 achievement ratings (rate 6-point scale)	
	Outcome 2 achievement ratings (rate 6-point scale rating)	
	Outcome 3 achievement rating (rate 6-point scale rating)	
	Etc.	
Project implementation & adaptive management	(rate 6-point scale rating)	
Sustainability	(rate 4-point scale rating)	

6 TIMEFRAMES

The total duration of the MTR will be approximately twenty-one (21) days over a time period of six (6) weeks starting (13 May 2019), and shall not exceed three (3) months from when the consultant(s) are hired. The tentative MTR timeframe is as follows:

Time Frame	Activity
27 September, 2019	Application closes
Before 7th October, 2019	Selected MTR Team
18 October, 2019	Prep the MTR Team (handover of Project Documents)
2 days (before 21 October 2019)	Document review and preparing MTR Inception Report
2 days (before 25 October 2019)	Finalization and Validation of MTR Inception Report- latest start of MTR mission
7 days (between 11 November 2019 and 20 November 2019)	MTR mission: stakeholder meetings, interviews, field visits
Between 18 - 20 November 2019)	Mission wrap-up meeting & presentation of initial findings earliest end of MTR mission
7days (25 November - 6 December 2019)	Preparing draft report
3 Weeks (28 December 2019)	Incorporating audit trail from feedback on draft report/Finalization of MTR report
TBD	Preparation & Issue of Management Response
TBD	Expected date of full MTR completion

Options for site visit should be provided in the inception report

7. MIDTERM REVIEW DELIVERABLES

S/N	Deliverables		Timeline		Payment
1	**MTR Inception Report**	MTR team clarifies objectives and methods of Midterm Review	No later than 2 weeks before the MTR mission: 25 October 2019	MTR team submits to the Commissioning Unit and project management	20%
2	**Presentation**	Initial Findings	End of MTR mission: 20 November 2019	MTR Team presents to project management and the Commissioning Unit	30%
3	**Draft Final Report**	Full report (using guidelines on content outlined in Annex B) with annexes	Within 3 weeks of the MTR mission: 6 December 2019	Sent to the Commissioning Unit, reviewed by RTA, Project Coordinating Unit, GEF OFP	30%
4	**Final Report***	Revised report with audit trail detailing how all received comments have (and have not) been addressed in the final MTR report	Within 1 week of receiving UNDP comments on draft: 28 December 2019	Sent to the Commissioning Unit	20%

*The final MTR report must be in English.

8. MTR ARRANGEMENTS

The principal responsibility for managing this MTR resides with the Commissioning Unit. The Commissioning Unit for this project's MTR is UNDP Nigeria Country Office. The commissioning unit will contract the consultants and ensure the timely provision of per diems and travel arrangements within the country for the MTR team. The Project Team will be responsible for liaising with the MTR team to provide all relevant documents, set up stakeholder interviews, and arrange field visits.

ToR ANNEX A:

List of Documents to be reviewed by the MTR Team

1. GEF Project Information Form (PIF)
2. UNDP Initiation Plan
3. UNDP Project Document
4. UNDP Environmental and Social Screening results
5. Project Inception Report
6. All Project Implementation Reports (PIR's)
7. Quarterly progress reports and work plans of the various implementation task teams
8. Audit reports
9. Finalized GEF focal area Tracking Tools at CEO endorsement and midterm (GEF CC Mitigation Tracking Tool)
10. Oversight mission reports
11. All monitoring reports prepared by the project
12. Financial and Administration guidelines used by Project Team The following documents will also be available:
13. Project operational guidelines, manuals and systems
14. UNDP country/countries programme document(s)
15. Minutes of the SFM Project Steering Committee (PSC) Meetings and other meetings (i.e. Project Appraisal Committee meetings)
16. Project site location maps.

ToR ANNEX B:

Guidelines on Contents for the Midterm Review Report

i. Basic Report Information (*for opening page or title page*)

- Title of UNDP supported GEF financed project
- UNDP PIMS# and GEF project ID#
- MTR time frame and date of MTR report
- Region and countries included in the project
- GEF Operational Focal Area/Strategic Program
- Executing Agency/Implementing Partner and other project partners
- MTR team members •
- Acknowledgements

ii. Table of Contents

iii. Acronyms and Abbreviations

1. Executive Summary (*3-5 pages*)

- Project Information Table
- Project Description (*brief*)
- Project Progress Summary (*between 200-500 words*)
- MTR Ratings & Achievement Summary Table
- Concise summary of conclusions
- Recommendation Summary Table

2. Introduction (*2-3 pages*)

- Purpose of the MTR and objectives
- Scope & Methodology: principles of design and execution of the MTR, MTR approach and data collection methods, limitations to the MTR
- Structure of the MTR report

3. Project Description and Background Context (*3-5 pages*)

- Development context: environmental, socio-economic, institutional, and policy factors relevant to the project objective and scope

- Problems that the project sought to address: threats and barriers targeted
- Project Description and Strategy: objective, outcomes and expected results, description of field sites (if any)
- Project Implementation Arrangements: short description of the Project Board, key implementing partner arrangements, etc.
- Project timing and milestones
- Main stakeholders: summary list

4. Findings (*12-14 pages*)

4.1 Project Strategy

- Project Design
- Results Framework/Logframe

4.2 Progress Towards Results

- Progress towards outcomes analysis
- Remaining barriers to achieving the project objective

4.3 Project Implementation and Adaptive Management

- Management Arrangements
- Work planning
- Finance and co-finance
- Project-level monitoring and evaluation systems
- Stakeholder engagement
- Reporting
- Communications

4.4 Sustainability

- Financial risks to sustainability
- Socio-economic to sustainability
- Institutional framework and governance risks to sustainability
- Environmental risks to sustainability

5. Conclusions and Recommendations (*4-6 pages*)

5.1 Conclusions

5.2 Comprehensive and balanced statements (that are evidence-based and connected to the MTR's findings) which highlight the strengths, weaknesses and results of the project

5.3 Recommendations

- Corrective actions for the design, implementation, monitoring and evaluation of the project
- Actions to follow up or reinforce initial benefits from the project
- Proposals for future directions underlining main objectives

6. Annexes

- MTR ToR (*excluding ToR annexes*)
- MTR evaluative matrix (evaluation criteria with key questions, indicators, sources of data, and methodology)
- Example Questionnaire or Interview Guide used for data collection • Ratings Scales • MTR mission itinerary
- List of persons interviewed
- List of documents reviewed
- Co-financing table (if not previously included in the body of the report)
- Signed UNEG Code of Conduct form • Signed MTR final report clearance form
- *Annexed in a separate file:* Audit trail from received comments on draft MTR report
- *Annexed in a separate file*: Relevant midterm tracking tools (METT, FSC, Capacity scorecard, etc.)

Annex 2: MTR Evaluative Matrix

Evaluative Questions	Indicators	Sources	Methodology
Project Strategy: To what extent is the project strategy relevant to country priorities, country ownership, and the best route towards expected results?			
How do you see the relevance of the project? To what level the project is relevant to the priority needs of the community?	Study conducted before start of project implementation, Baseline info documented, relevant government offices and communities consulted during the project life,	PRODOC, project staff, Government offices, Community leaders, beneficiaries	Doc. Review, In-depth interview (IDI) with project staff, members NSC[6], PMU, discussion with community groups, analysis of data,
How do you see the alignment of the project to policies, strategies, and priorities of the government?	Project priorities adhered to national policies and regulations, national policies and frameworks reviewed for the project design, Government officials consulted during project design,	PRODOC, project staff, Government offices, Community leaders, beneficiaries	Doc. Review, IDI with project staff, PMU, NSC members, discussion with community groups, analysis,
How do you describe the level of joint planning, implementation, monitoring and evaluation of project activities among government offices and the project office?	All relevant government offices represented and participated in the project design, all relevant offices actively engaged at all stages and decisions in the project implementation	PRODOC, project staff, Government offices, Community leaders, beneficiaries Reports, Minutes,	Doc. Review, IDI with project staff & NSC members, PMU, discussion with community groups, analysis,
Tell us the effect of any incorrect assumptions or changes to the context to achieving the project results as outlined in the Project Document.	Assumptions and risks clearly discussed in the project design, project implementers clearly understood risks and assumptions, mitigative measures clearly discussed, and implemented in the project implementation	PRODOC, project staff, Government offices, Community leaders, beneficiaries	Doc. Review, IDI with project staff, NSC members, PMU, discussion with community groups, analysis,
Were lessons from other relevant projects properly incorporated into the project design?	Relevant exemplary previous projects reviewed and lessons drawn during project design, innovations included in the project activities,	PRODOC, project staff, Government offices, Community leaders, beneficiaries	Doc. Review, IDI with project staff, NSC members, PMU, discussion with community groups, analysis,
Were gender issues raised? In what?	All data are gender disaggregated, Women are properly represented in the project,	PRODOC, project staff, Government offices, Community leaders, beneficiaries	Doc. Review, IDI with project staff, NSC members, discussion with community groups, analysis,
Progress Towards Results: To what extent have the expected outcomes and objectives of the project been achieved thus far?			
How much the project achieved the planned outputs/results and its objectives so far?	Project plans achieved based on the plans, activities are implemented based on anticipated quality and standards,	Reports, M&E Tracking tools, Officials, beneficiaries, field observation	Report review, discussion with project staff, IDI with NSC members, PMU, discussion with the beneficiaries, analysis,
On which expected results and objectives is the project more successful? Why?	Project plans achieved based on the plans, activities are implemented based on anticipated quality and standards,	Reports, M&E Tracking tools, Officials, beneficiaries, field observation	Report review, IDI with NSC members, PMU, discussion with project staff, discussion with the beneficiaries, analysis,
What benefits do government institutions and community groups	Project implementation capacities improved,	Reports, M&E Tracking tools, Officials,	Report review, IDI with NSC members, PMU,

[6] NSC = National steering committee

got from the project activities and outputs? To what extent they benefited from the project?	New innovations adapted and implemented in other areas, The efficiency and effectiveness of project implementation capacity of beneficiaries improved	beneficiaries, field observation	discussion with project staff, discussion with the beneficiaries, analysis,
Project Implementation and Adaptive Management: Has the project been implemented efficiently, cost-effectively, and been able to adapt to any changing conditions thus far? To what extent are project-level monitoring and evaluation systems, reporting, and project communications supporting the project's implementation?			
Is the relationship between input of resources and results achieved appropriate and justifiable? To what extent have individual resources been used economically?	Inputs for the project implementation clearly and efficiently identified, properly allocated, properly expended	Reports, M&E Tracking tools, Officials, beneficiaries, field observation	Report review, IDI with NSC members, PMU, discussion with project staff, discussion with the beneficiaries, analysis,
Are there any alternatives for achieving the same results with less inputs/ funds?	Strategies in place to adapt alternative strategies to implement activities with less inputs and funds,	Reports, M&E Tracking tools, Officials, beneficiaries, field observation	Report review, IDI with NSC members, PMU, discussion with project staff, discussion with the beneficiaries, analysis,
Does the project have the appropriate financial controls, including reporting and planning, that allow management to make informed decisions regarding the budget and allow for timely flow of funds?	Systems developed to control financial resources, system to allow informed decision making in place	Reports, M&E Tracking tools, Officials, beneficiaries, field observation	Report review, IDI with NSC members, PMU, discussion with project staff, discussion with the beneficiaries, analysis,
Sustainability: To what extent are there financial, institutional, socio-economic, and/or environmental risks to sustaining long-term project results?			
In your assessment, to what extent will both the project benefits/results and impacts continue during the second half life of the project, and afterwards?	Mechanisms are put in place by the project to ensure sustainability	Reports, M&E Tracking tools, Officials, beneficiaries, field observation	Report review, IDI with NSC members, PMU, discussion with project staff, discussion with the beneficiaries, analysis,
To what extent has the project strengthened the capacities of government offices to take over project activities and outputs to continue in the long-run?	Local government offices, beneficiaries are capacitated to take over project activities to ensure sustainable use of interventions	Reports, M&E Tracking tools, Officials, beneficiaries, field observation	Report review, IDI with NSC members, PMU, discussion with project staff, discussion with the beneficiaries, analysis,
What should be done in the future to improve the effectiveness of the project and enhance the benefit to the community from the project?	Mechanisms are put in place by the project to ensure sustainability	Reports, M&E Tracking tools, Officials, beneficiaries, field observation	Report review, IDI with NSC members, PMU, discussion with project staff, discussion with the beneficiaries, analysis,

Annex 3: Example Questionnaire or Interview Guide used for Data Collection

ORGANIZATION:	STATE:	LGA:
NAME OF PARTICIPANT:	GENDER:	TEL:

Key Questions Guide

Evaluation Aspect	Questions Guide	Answer	Rating (1-6)
Relevance	Is the SFM Project doing the right thing? How important is the **relevance or significance** of the intervention regarding local and national requirements and priorities?		
Effectiveness	Are the objectives of the development interventions being achieved? How big is the **effectiveness or impact** of the project compared to the objectives planned (Comparison: result –planning)?		
Efficiency	Are the objectives being achieved economically by the development intervention? How big is the **efficiency or utilization ratio** of the resources used (Comparison: resources applied –results)?		
Impact	Does the development intervention contribute to reaching higher level development objectives (preferably, overall objective)? What is the **impact or effect** of the intervention in proportion to the overall situation of the target group or those effected?		
Sustainability	Are the positive effects or impacts sustainable? How is the **sustainability or permanence** of the intervention and its effects to be assessed[5]?		

Further Assessment & Observation

Planned Activities / Projects	Allocated Budget	Released Finance	Utilized Finance	Out Put	Outcome	Impact

Participant Closing Remarks:

Annex 4: Ratings Scales

Use the 6-point Progress towards Results Rating Scale: HS, S, MS, MU, U, HU

Ratings for Progress Towards Results: (one rating for each outcome and for the objective)		
6	Highly Satisfactory (HS)	The objective/outcome is expected to achieve or exceed all its end-of-project targets, without major shortcomings. The progress towards the objective/outcome can be presented as "good practice".
5	Satisfactory (S)	The objective/outcome is expected to achieve most of its end-of-project targets, with only minor shortcomings.
4	Moderately Satisfactory (MS)	The objective/outcome is expected to achieve most of its end-of-project targets but with significant shortcomings.
3	Moderately Unsatisfactory (HU)	The objective/outcome is expected to achieve its end-of-project targets with major shortcomings.
2	Unsatisfactory (U)	The objective/outcome is expected not to achieve most of its end-of-project targets.
1	Highly Unsatisfactory (HU)	The objective/outcome has failed to achieve its midterm targets, and is not expected to achieve any of its end-of-project targets.

Ratings for Project Implementation & Adaptive Management: (one overall rating)		
6	Highly Satisfactory (HS)	Implementation of all seven components – management arrangements, work planning, finance and co-finance, project-level monitoring and evaluation systems, stakeholder engagement, reporting, and communications – is leading to efficient and effective project implementation and adaptive management. The project can be presented as "good practice".
5	Satisfactory (S)	Implementation of most of the seven components is leading to efficient and effective project implementation and adaptive management except for only few that are subject to remedial action.
4	Moderately Satisfactory (MS)	Implementation of some of the seven components is leading to efficient and effective project implementation and adaptive management, with some components requiring remedial action.
3	Moderately Unsatisfactory (MU)	Implementation of some of the seven components is not leading to efficient and effective project implementation and adaptive, with most components requiring remedial action.
2	Unsatisfactory (U)	Implementation of most of the seven components is not leading to efficient and effective project implementation and adaptive management.
1	Highly Unsatisfactory (HU)	Implementation of none of the seven components is leading to efficient and effective project implementation and adaptive management.

Ratings for Sustainability: (one overall rating)		
4	Likely (L)	Negligible risks to sustainability, with key outcomes on track to be achieved by the project's closure and expected to continue into the foreseeable future
3	Moderately Likely (ML)	Moderate risks, but expectations that at least some outcomes will be sustained due to the progress towards results on outcomes at the Midterm Review
2	Moderately Unlikely (MU)	Significant risk that key outcomes will not carry on after project closure, although some outputs and activities should carry on
1	Unlikely (U)	Severe risks that project outcomes as well as key outputs will not be sustained

Annex 5: MTR Mission Itinerary

Sub-Region	MTR Team Meeting Group/s	Key Tasks	Date	Time	No. of Days
Abuja	Nenu Engineering Limited, CEO and Owner, Christopher Obi	Site visit and Meeting	26/11/19	1.00 – 2.00pm	
Abuja	Roshan Global Services, Managing Director / CEO, Ms. Happy Amos	Site visit and Meeting	26/11/19	3.00 - 5.00pm	1
Abuja	Federal Competitive and Consumer Protection Commission Eng. Shamm T. Kolo, Director and Kelechi Okoh, Deputy Director	Office visit and Meeting	26/11/19	6.30 - 8.30pm	
Abuja	Nigerian Alliance for Clean Cookstoves, National Chairman Prince Ene Okechukwu	Office visit and Meeting	27/11/19	8.00 – 9.00am	1
Abuja	Federal Ministry of Finance, Budget and Planning, Mr. Anselim Ogwaku, Deputy Director, Vincent Chukujekwe (PAO) and Imo Ekanem U. (A.O.I)	Office visit and Meeting	27/11/19	9.30 – 10.30am	
Abuja	Federal Ministry of Environment GEF Focal Point Person, David Kusimo	Office visit and Meeting	27/11/19	11.00 – 11.30am	
Abuja	Break	Lunch Break	27/11/19	12.00 – 12.40pm	
Abuja	National Orientation Agency, Officer, Ms. Oneli Stella	Office visit and Meeting	27/11/19	1.00 – 1.30pm	
Abuja	ECN / PMU, Eng. Okon Ekpenyong (National SFM Project Coordinator / Manager), Grace Ibe (Administrative Officer)	Office visit and Meeting	27/11/19	1.35 – 2.30pm	
Abuja to Calabar, CRS	Air Travel to Calabar, Cross River State (CRS)	Travel to CRS	27/11/19	3.30 – 4.30pm	
Calabar	CRS MFIs & MFBs Associations Representatives	Office visit and Meeting	27/11/19	6.30 – 8.30pm	

Sub-Region	MTR Team Meeting Group/s	Key Tasks	Date	Time	No. of Days
Calabar	Meeting with Stakeholders (clean cookstove manufacturer, retailers and users) in CRS and specific project sites (Ekiriba forestland in Akpabuyo LGA and Ikot Ansa woodlots)	Field Mission	28/11/19	8.30am – 5.00pm	1
Ogoja/Obudu	Travel to specific project sites (Linus - cookstoves manufacturer site, Ogoja tree nurseries and woodlots and Mbok demonstration centre)	Field Mission	29/11/19	6.30am – 5.00pm	1
Calabar to Abuja	Travel from Calabar to Abjua and a teleconference with UNDP CO Focal Point Person.	Travel and Teleconference	30/11/19	9.00am – 5.00pm	1
Abuja to Asaba	Travel from Abuja to Asaba and brief meeting with Delta Sate SFM Project Focal Point Person, Chukwuma Nwose	Travel and Field Mission Preparatory Meeting	1/12/19	10.00am – 5.00pm	1
Asaba	Meeting with Stakeholders (MFBs & MFIs Associations Representatives and Clean Cookstoves retailers and consumers) in Delta State and visit to cookstoves kiosks	Office visit and Meeting	2/12/19	9.00am – 5.00pm	1
Delta State	Visit to Project sites/beneficiaries (Ogwushi-Uku tree nurseries and forestlands, Adonte and Abah-Uno community woodlots and Ukwuu-Oba enriched forestlands, as well as Agbarho Demonstration Centre / MFP)	Field Mission	3/12/19	7.00am – 6.00pm	1
Asaba to Abuja, then Kaduna	Travel to Abuja, then Kaduna State	Travel to Kaduna	4/12/19	10.00am – 6.00pm	1
Kaduna	Meeting with Stakeholders (MFBs & MFIs Associations Representatives and Clean Cookstoves retailers and consumers) in Kaduna State.	Office visit and Meeting	4/12/19	6.15pm – 8.40pm	
Saminka - Kaduna	Visit to Project sites/beneficiaries (Greenland Fati Gold Services, Mrs. Binta Yahaya, CEO, Saminaka community and LGA representatives, LGA and Buruku Community Woodlots in Kaduna State)	Field Mission and travel back to Abuja	5/12/19	6.00am – 6.00pm	1
Abuja	Wrap-Up Meeting	MTR Team brief presentation on initial findings to PSC, PMU and UNDP CO Representatives	6/12/19	10.00am – 1.00pm	1

Annex 6: List of Persons Interviewed

S. N	Name of person	Gender	Location	Position
1	Muyiwa Odele	M	Abuja	UNDP Nigeria Country Office Focal Point Person for the SFM Project.
2	Eng. Okon Ekpenyong	M	Abuja	ECN, SFM Project Coordinator / Manager
3	David Kusimo	M	Abuja	Federal Ministry of Environment, GEF Focal Point Person.
4	Oneli Stella	F	Abuja	Officer at National Orientation Agency.
5	Anselim Ogwaku,	M	Abuja	Deputy Director, Federal Ministry of Finance, Budget and Planning
6	Vincent Chukujekwe	M	Abuja	POA, Deputy Director, Federal Ministry of Finance, Budget and Planning
7	Imo Ekanem U.	F	Abuja	A.O.I, Deputy Director, Federal Ministry of Finance, Budget and Planning
8	Christopher Obi	M	Abuja	CEO and Owner, Nenu Engineering Limited
9	Happy Amos	F	Abuja	Managing Director / CEO, Roshan Global Services
10	Lawal Gada	M	Abuja	National Vice Chairman, Nigerian Alliance for Clean Cookstoves
11	Prince Ene Okechukwu	M	Abuja	National Chairman, Nigerian Alliance for Clean Cookstoves
12	Eng. Shamm T. Kolo,	M	Abuja	Director Surveillance & Enforcement, Abuja - FCT, Federal Competitive and Consumer Protection Commission
13	Kelechi Okoh	M	Abuja	Deputy Director, Quality Assurance and Development, Federal Competitive and Consumer Protection Commission
14	Yusuf Ahmed Gyallesu	M	Kaduna	1st Vice President, National Association of Microfinance Banks
15	Edu Effiom	F	Calabar, Cross River State	SFM Project's Cross River State's focal point person
16	Chukwuma Ben Nkwose	M	Asaba, Delta State	SFM Project's Delta State's focal point person
17	Asmau Adamu	F	Kaduna, Kaduna State	Desk officer, Ministry of Environment Kaduna State
18	Ms. Grace Ohiowele	F	Abuja	SFM Project Administrative Officer
19	Binita Yahaya	F	Kaduna, Kaduna State	CEO & Founder, Greenland Fati Gold Services
20	Olanike Olugboji	F	Kaduna, Kaduna State	Program Director, Women Initiative for Sustainable Environment (WISE)

NB: (The following list details those officials the MTR team discussed with in a hall meetings. The names and detail of people the MTR team discussed at the field level is not included because of the larger size of the people the team met).

Annex 7: List of Documents Reviewed

UNDP-GEF Directorate, 2014, *Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects*

UNDP, December, 2011, *A Companion Guide to the Handbook on Planning Monitoring and Evaluating for Development Results for Programme Units and Evaluators. December 2011*

UNDP-GEF, December 2, 2016, *Final ProDoc; CCA Growth: The Sustainable Fuelwood Management (SFM) Project in Nigeria (PIMS # 5366)*

UNDP-GEF, June 2019, *Project Implementation Report (PIR).*

ECN, 2018, *Report of the UNDP-GEF project team/PMU visit to Cross River State for the Monitoring and Evaluation of the participatory gender sensitive technical and business training on SFM best practices in Cross River State, 20th – 23rd march, 2018, facilitated by NISO integrated services limited at Ikot Nya Ekpo community, Akpabuyo LGA, CRS.*

ECN, 2019, *Report of the SFM PMU Monitoring and Evaluation Visit to Cross River State from Monday, 2nd – Friday, 6th September 2019.*

ECN, 2018, *Report of the monitoring and evaluation visit to the 3 states for the implementation of the GEF UNDP Sustainable Fuelwood Management (SFM) project in Nigeria by members of the SFM project steering committee on the 19th-27th October, 2018.*

UNDP-GEF, June 2018, *Project Implementation Report (PIR).*

***International Journal of Electronic Business Management**, September 2011, Project Reliability: Probability of a Project Meets Its Quality-Cost-Time Target Under Uncertainty Vol. 9, No. 3, pp.*

The International Bank for Reconstruction and Development/THE WORLD BANK GROUP, 2010, Energy Sector Management Assistance Program (ESMAP) Report, *Sustainable Production of Commercial Woodfuel: Lessons and Guidance from Two Strategies.*

GEF, *Focal Area Tracking Tools at CEO Endorsement and Midterm, The Sustainable Fuelwood Management (SFM) Project in Nigeria (PIMS # 5366)*

FAO, 2010 *Criteria and Indicators for Sustainable Woodfuels*

ADB, December 2008, *Midterm Review Process Special Evaluation Study Update, Reference Number: SES:REG 2008-78*

Annex 8: Midterm LDCF/SCCF Core Indicators

-Annexed in a separate file: midterm LDCF/SCCF Core Indicators

Annex 9: MTR Audit Trail

-Annexed in a separate file: MTR Audit Trail

Annex 10: Signed UNEG Code of Conduct Form

Evaluators/Consultants:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study limitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

MTR Consultant Agreement Form

Agreement to abide by the Code of Conduct for Evaluation in the UN System:

Name of Consultant: *MR. STEPHEN NDIBOI*_____

Name of Consultancy Organization (where relevant): _____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at *NAIROBI, KENYA*_____ *(Place)* on 22nd JANUARY, *2020*___ *(DATE)*

Signature: _____

Annex 11: Signed MTR Final Report Clearance Form

(to be completed by the Commissioning Unit and UNDP-GEF RTA)

Midterm Review Report Reviewed and Cleared By:

Commissioning Unit: Environment & Energy

Name: __MUYIWA ODELE_____

Signature: _____ Date: _____

UNDP-GEF Regional Technical Advisor

Name: _____

Signature: _____ Date: _____