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**Energy Efficient Production and Utilisation of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone**

**UNDP PIMS: 4904**

**Atlas Project ID: 00090575**

**GEF Agency: United Nations Development Programme**

**Executing Agency: Ministry of Energy, Republic of Sierra Leone**

**Focal Area: Climate Change**

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**Report of the Mid-term Review**

**November, 2018**

Dr. Arun Rijal (Independent International Consultant)

Dr. Hindowa Momoh (Independent National Consultant)

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**Project Period: 2015-2019**

**Evaluation Team**

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**Mid-term Review Report**

**November, 2018**

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This report is a joint effort of the Mid-term Review Consultants and all the staff and people connected with the Project “Energy Efficient Production and Utilisation of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone” who gave freely their time to share ideas to make the evaluation process a success. There are many people to mention by name – and everyone who contributed are included in the lists of names annexed to this report – but special mention must be made of Mr. Benjamin Kamara, Director of Energy, Ministry of Energy and the Chairperson of the Project Board, Mr Sahr Kellie, Deputy Director of Agriculture, Ministry of Forest, Agriculture and Food Security, Mrs. Tanzila Watta Sankoh, Program Specialist and Team Lead -Environment Cluster, UNDP. I also like to thank Chief Pa Alimamy Kanu, Mawoma Section Koya Chiefdom, Dr. Milton Gbondah, CORD-SL and Hannah Tapsr, WestWind Energy for sharing their experience and also briefing on their activities. I would like to thank Mr. Luseni Kappia for making arrangement for field mission, providing information and also accompanying us during mission. All of these personnel answered every question I asked and discussed the points raised. I am very thankful to all experts involved in this team.

The views expressed in this report are intended to offer an overview of the project. I have tried to balance my thoughts and to offer fair perspectives of what was observed and learned from people far more knowledgeable about the Project and its context than I will ever be.

And finally, one of the delights of this sort of work remains that of visiting new and extremely welcoming country and going home again having made new friends, seen new things, and witnessed with great admiration the dedication and enthusiasm that so many people bring to their work in accomplishing Energy Efficient Production and Utilisation of Charcoal through Innovative Technologies and Private Sector Involvement Project activities. I would like to thank them and wish them every success in their continuing endeavours.

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Acronyms and Terms

ARC Aprovecho Research Centre

BDS Business Development Services

BET Biomass Energy Technologies

BRAC Finance Institution of Sierra Leone

CCDC CookStove and Charcoal Development Center

CC-SP Climate Change-Strategic Program

CO Country Office

CPA Charcoal Producer Association

CPAP Country Programme Action Plan

DIM Direct Implementation Modality

DNA Designated National Authority

DoE Department of Energy

EA Executing Agency

ECREEE ECOWAS Renewable Energy and Energy Efficiency Centre

EFA Environment Foundation of Africa

EEPUC Energy Efficient Production and Utilisation of Charcoal

EFO Energy for Opportunity

EUEI-PDF EU Energy Initiative Partnership Dialogue Facility

FAO Food and Agriculture Organisation

FD Forest Division

GEF Global Environment Facility

GERES Group Energies Renouvelables Environnement et Solidarités

GHG Greenhouse Gas

GIZ Gesellschaft fiir Internationale Zusammenarbeit (German International Cooperation)

GoSL Government of Sierra Leone

IA Implementing Agency

IC International Consultant

ICRAF International Centre for Research in Agroforestry

ICS Improved Cook Stoves

LRGS Loan Risk Guarantee Scheme

MAFFS Ministry of Agriculture, Forestry and Food Security

MFED Ministry of Finance and Economic Development

MoE Ministry of Energy

M&E Monitoring and Evaluation

MILCPE Ministry of Lands, Country Planning and the Environment

MoU Memorandum of Understanding

MVE Measuring, Verification and Enforcement

MTI Ministry of Trade and Industry

MTR Mid-term Review

NGO Non-Government Organisation

NPD National Project Director

PA Project Assistant

PEDCORM Consultancy Firm

PES Payment for Environment Services

PIR Project Implementation Report

PIW Project Inception Workshop

PM Project Manager

PMU Project Management Unit

Prodoc Project Document

PSC Project Steering Committee

QA Quality Assurance

QC Quality Control

REDD Reducing Emissions from Deforestation and Forest Degradation

REC Renewable Energy Centre

ROtI Review of Outcome to Impact

RKLCC Research, Knowledge, Learning and Coordination Centre

RRF Results and Resources Framework

NSC National Steering Committee

SABI Agribusiness Service Program

SLEPA Environment Protection Agency

SMART Specific, Measurable, Achievable, Relevant, Time-bound

SONGHAI Centre involved in agricultural training, research and production for sustainable livelihoods in Africa.

ToR Terms of Reference

UNDAF UN Development Assistance Framework

UNDP United Nations Development Programme

UNDP HQ UNDP Headquarters

UNFCCC United Nations Framework Convention on Climate Change

US$ United States Dollar

WAPFR Western Area Peninsula Forest Reserve

WFP World Food Program

WHL Wekthungerhilfe

WWF World Wildlife Fund

Currency of Sierra Leone is the Sierra Leone. At the time of the mid-term review, US$ 1 = SLL8300.

**ii. Executive Summary**

This Mid-term Review (MTR) has been conducted as part of the Monitoring and Evaluation plan of the UNDP/GEF Project: “Energy Efficient Production and Utilization of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone”, and will be referred to as the “Project” in the scope of this report. The MTR mission to Sierra Leone was conducted from 20th to 31th October 2018. Extensive consultations with the project partners were also conducted prior and following the mission to ensure a good understanding of the project’s results; leading to the submission of the MTR report on the date of this report.

**Project Summary Table**

As per requirements for MTR, the Project Summary Table is provided below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Project Summary Table** | | | | | |
| **Project Title:** | Energy Efficient Production and Utilization of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone | | | | |
| **Atlas Award ID:**  **Project ID:** | **00081156**  **00090575** |  | | **at endorsement**  **(US$)** | **at Mid-term (US$)** |
| UNDP Project ID: | PIMS 4904 | GEF Fund (Cash) | | 1,768,182 | 1,111,298.62 |
| Country: | Sierra Leone | UNDP (Cash) | | 200,000 | 165,219 |
| SLEPA-EU Cap Dev (Cash) | | 5,016,000 | 0 |
| Government (in Kind) | | 500,000 | 13,600 |
| BRAC (Microfinance Company (in-kind) | | 1,682,174 | 0 |
| WestWind Energy (in-kind) | | 200,000 | 5,000 |
| Toyola Energy (Kind) | | 100,000 | 0 |
| Bockarie (private sector) (in-kind) | | 150,000 | 0 |
| Region: | Africa | Samu Enterprise (Private sector) (in-kind) | | 100,000 | 0 |
| Focal Area: | Climate Change | **Total co-financing (Cash):** | | **6,984,182** |  |
| Executing Agency: | Ministry of Energy, Republic of Sierra Leone | **Total Project Cost:** | | **7,732,174+(in kind US$2,732,174)** |  |
| Other Partners involved: | Ministry of Agriculture, Forestry and food security | ProDoc Signature (date project began): | | | 24 April 2015 |
| (Operational) Closing Date: | Proposed:  December 2019 | | Actual:  December 2019 |

**Brief Description of Project**

Sierra Leone is a country in West Africa with a total 71,740km2 of landmass and population of 7,075,641 as of 2015 census. Sierra Leone’s dense tropical rainforest and swampy environment used to be considered impenetrable and in the past it protected people from conquests by the Mande and other African empires. The centre of the country is a region of lowland plains, containing forests, bush and farmland that occupies about 43% of country’s land area. The northern section of this has been categorised by the WWF as part of the Guinean forest savanna mosaic ecoregion while the south is rain-forested plains and farmland.

In the west, Sierra Leone has some 400 km of Atlantic coastline, giving it both bountiful marine resources and attractive tourist potential. The coast has areas of low-lying Guinean mangroves swamp. Once the much forested country (70%) the majority of the original forest cover has now been converted to agricultural lands and savannah and only 5% of the original intact forest remains. At present about 2,725,821ha (38% of total land area) forest cover is left. In 1990 and 2010 annual average deforestation rates were 20,000ha per year. The main driver of deforestation is agriculture expansion including shifting cultivation practices, logging, mining and unregulated use of wood for construction and fuel wood.

Natural resources play a vital role in the livelihoods of people of Sierra Leone with 75% of the population living in rural areas and over 70% employed by the agriculture and forestry sector. Increased economic development and demographic pressure are changing agricultural and forestry practices which is increasing pressure on the natural resource base. Internal migration to urban areas (mainly Freetown), poor enforcement of legislation and widespread poverty are some of the main contributing factors to energy poverty and degraded natural resources. Over extraction and insufficient re-plantation of trees is threatening both people’s ability to afford fuel wood for cooking and their ability to easily attain it in other ways threatening the sustainability of the natural environment and its ability to perform ecological services in and around Freetown.

The objective of the Energy Efficient Production and Utilisation of Charcoal (EEPUC) Project is to reduce annual fuel wood consumption, improve energy access, create green environment and reduce GHG emissions in Sierra Leone through demand side management to scale up certified cook stoves and certified charcoal business as a stop gap solution to increasing access to modern energy services. Project expected to achieve these through 3 major components:

Component 1: Policy and regulatory frameworks on the use of more efficiently produced charcoal and improved cook stoves

Component 2: Development of public-private initiatives for the improved and more efficient production of charcoal and the scaling up of improved cookstove production

Component 3: Improved, more efficient production and efficient utilization of certified charcoal and cookstove

Project aims to address the problem by:

• Developing policy, regulatory and institutional environment that support efficient use of charcoal and improved cook stoves.

• Enhancing the capacity of relevant institutions on biomass resource utilization at national, regional and community level.

• Developing public-private initiatives to address technical and financial barriers for the improved and efficient production of charcoal and scaling up of improved cook stoves.

• Knowledge management for overcoming the information barrier and low knowledge base for improved and efficient production and utilization of charcoal and cook stoves.

Because it believes that:

- Effective enforcement of policies and management plans will help to address threats that the natural resources area facing.

- Improved technology will reduce consumption of firewood and also reduce emissions.

- Enhancing capacity of the implementing agencies will strengthen the enforcement of policies.

- Improving efficiency of kilns and cook stoves will reduce consumption of biomass and that will reduce pressure on natural resources and also support environmental management.

- Community involvement in efficient production and utilization of charcoal and cook stoves will help to decrease pressure on the natural resources and make environment management more effective and sustainable.

The Project Document was approved jointly by Government of Sierra Leone (Ministry of Energy), and UNDP on 24 April 2015 for the duration of four years. The Project is implemented by the UNDP CO with the support of a Project Management Unit (PMU) under Direct Implementation Modality (DIM) in close coordination with the Ministry of Energy as an executing agency. UNDP has been responsible for the preparation, implementation and quality assurance of all activities, including procurement, recruitment, monitoring, and financial disbursement. The Project has been executed in accordance with the standard rules and procedures of the UNDP DIM Execution Modality. The Project budget is US$ 10,589,670 of which US$7,857,496 is cash contribution and US$2,732,174 in kind contribution. Of the cash contribution US$1,768,182 is the GEF Grant, US$200,000 is the UNDP contribution and US$5,889,314 is provided by other three partners. Besides, Government of Sierra Leone, Microfinance Company and four private sector companies also contributed in-kind contributions.

**Summary Rating Table**

As per UNDP and GEF’s requirements for MTR, the Mid-Term Review Rating Table is provided below:

|  |  |  |
| --- | --- | --- |
| **Measure** | **MTR Rating** | **Achievement Description** |
| Project Strategy | N/A | The project aims to achieve its objective through three components, 3 outcomes which will have a total of 12 outputs. The project was designed to address the problem by improving/establishing institutions (government, private and local institutions) to reduce GHG emissions, make biomass resources production and utilisation sustainable, and promote sustainable biomass energy technologies in Sierra Leone using market based approaches.  Project was able to conduct cookstove and kiln training for trainers at Freetown but the targeted rural area producers and government agencies training was not initiated, updated energy policy was yet to be approved and implemented, target production and distribution of cookstoves, kilns and furnaces in the rural areas was not initiated yet, establishment of lab and training for government personnel was not done and replication of successful model within this project (as provisioned) has very less hope to be completed within the project life. |
| Progress Towards Results | Objective Achievement: **Unsatisfactory** | Project targeted to reduce fuel wood consumption for energy use in households and industries by 174,167 tonnes but it was not able to train rural entrepreneurs to produce 700 institutional stoves, 1,000 efficient kilns and 14,000 energy efficient cook stoves. It has only conducted training for trainers at the capital.  As training for rural producers and production of 1,000 kilns was not done, there was no efficient charcoal production.  Expected to benefit 15,000 households and industries by adopting energy efficient furnaces and stoves but the production of furnaces and stoves was not initiated by the time of the MTR. |
| Outcome 1: **Moderately Unsatisfactory** | Trained some people at the capital but training for rural producers was not initiated and due to that targeted 46 improved cookstove producers and 100 charcoal producers was not met.  Targeted biomass utilization projects were planned to develop for PURE/SURE purpose was not accomplished.  National Energy Policy 2009 was revised to harmonize and update but approval and implementation was still not done.  Financial Incentive scheme document development initiated recently so funding for BET application project has not taken place yet.  Expected involvement of Government agencies and institutions in biomass energy production and linking with each other via a working mechanism for coordination was not done and working mechanism yet to be developed. |
| Outcome 2: **Highly Unsatisfactory** | Targeted number of Cookstoves were not produced so difficult to meet the target with the present pace of project management.  No improved Kilns were installed for efficient production of charcoal.  Not a single institutional furnace/stove installed so difficult to meet the target.  Not a single industrial stove installed.  Not a single USD invested on biomass energy technology application due to lack of financing policy document so difficult to meet target of USD500,000. |
| Outcome 3: **Unsatisfactory** | Not a single new project proposed or planned to replicate successfully operating stoves and kilns.  Project expected to receive proposal for replication of the successful model of cookstoves and kilns and accomplish by year 4 but it is not initiated yet.  It is expected that by the end of the project i.e. year 4, 146 local manufacturing firms that can fabricate and install equipment/components used in stoves and kilns systems but village level manufacturers were not trained to produce the equipment/components used in stoves and kilns.  Project targeted to train 3,000 men/women from the rural areas for working in stoves and kilns application projects but it has not initiated training for rural target yet and has only trained some in Freetown and are working for Westwind Energy.  Training of the government agencies has not taken place so integration of biomass energy use, stoves and kilns applications and biomass industry development in the local development plan has not taken place.  Targeted training of 15 local men and women financial officers that will be capable of evaluating biomass energy and other RE project proposals was not done.  Project targeted to involve 25 local entrepreneurs and SMEs that make up the value chain of the bioenergy application industry. But not even preparatory training for local entrepreneurs and SMEs initiated so difficult to meet the target within the project period. |
| Project Implementation & Adaptive Management | **Moderately Unsatisfactory** | The Project’s adaptive management has been weak due to lack of effective monitoring mechanism. Very limited visits were made to monitor activities of the project in the field. Adaptive management has not been operated effectively at both the strategic level and the tactical level.  Project organised Inception workshop to discuss the project components and application procedures. In inception workshop, stakeholders suggested to pilot woodlot creation and following this suggestion, project conducted plantation in three villages to create woodlots for supply of wood for charcoal production and also firewood for cooking. In PIR of 2016 and 2017, it was mentioned that the Ministry of Energy is responding slow and project board meeting is not taking place on time. It was mentioned that the Steering committee is looking at rotating the chairmanship but it did not happen and no changes took place. It was also told in these PIRs that Steering committee will sharpen and update the project objective indicators but no change was observed till MTR period. |
| Sustainability | **Unlikely** | The evaluation of the sustainability of this Project is mostly unlikely.  The outlook for the long-term financial sustainability of the project appears weak and it is connected to the interest of the local government and the national government. No financial commitment was available from government, INGOs, bilateral agencies or the private sector. Ministry of Energy and Ministry of Agriculture, Forestry and Food Security have to allocate budget for the additional staff needed to provide technical support to the rural communities and also producers of charcoal and cook stoves but government agencies indicated that they have financial constraints so difficult to bear these additional costs. Even the financial institution that committed at the project development phase to invest in financial incentives program stepped back.  The social sustainability of the project is also not promising as communities members were seeking financial support for management of the woodlots and also other activities and this means they may not be interested to continue if there is no food for work program.  The institutional sustainability of the Project could be good if the community institutions are made self-reliant. Similarly, if the capacity enhancement of the government institutions are completed then this could also be sustainable. But at the time of Mid-term review, community awareness activities were not conducted, establishment of Research, Knowledge, Learning and Coordination Center (RKLCC) was not done, training for government staffs in the centre, establishment of lab, approval of energy policy, and training for communities on efficient kilns/cook stoves etc. were not done.  The institution establishment, capacity development, policy formulation and use of efficient kilns and cookstoves are to decrease quantity of biomass use and emissions but major activities were not initiated yet to achieve the targeted results. |

**Key successes** (Progress Summary)

Project is able to establish some woodlots with the help of communities. Identified DoE for establishing Research, Knowledge, Learning and Coordination Centre (RKLCC). Project made several advertisements for hiring an expert to establish a testing lab for charcoal and cook stoves but not able to find one. Advertisement made again. It conducted training on efficient charcoal production and utilization. Similarly, consultation with stakeholders to define and formulate the cooking energy action plan is initiated. Firm named PEDCORM was consulted to harmonise and update the 2009 National Energy Policy and the draft is submitted to Government for approval. Similarly, a consultant is hired to design the rebate and grant scheme including information on procedure, regulations, procedures, standards and incentives for the smooth and effective implementation of biomass energy applications. Project also conducted training and awareness campaign on the use, maintenance and benefits of energy-efficient kilns. Project prepared design drawings, construction procedure guide and manual for the construction and operation of energy-efficient stoves and also conducted training on the installation, operation and maintenance of energy-efficient furnaces/stoves/kilns.

**Key problem areas**

Over 90% of rural households in Sierra Leone still rely on fuelwood for cooking and thermal energy whilst over 50% of the urban and peri-urban rely on charcoal for cooking. Similarly, a large portion of cottage industry also uses charcoal and firewood for thermal energy. The firewood analysis indicated that in Freetown there has been a trend of shifting towards charcoal as a primary fuel instead of firewood. Similarly, there is also a trend of increasing fuel consumption in Sierra Leone. The analysis of problem through stakeholders’ consultations indicated that the unsustainable production and utilisation of biomass resources are the main causes of problem related to biomass resources. The situation is created mainly due to lack of accurate and reliable baseline data for conducting detailed cost-benefit analysis on the opportunity cost of efficient charcoal and improved cook stove solutions. Lack of activities to sensitize public, private and CSO stakeholders on the threats and opportunities of alternatives. Poor institutional setup, limited resources and lack of institutional capacity to implement the National Energy Plan and National Energy Strategy (2009). Similarly, lack of incentives in the supply side i.e. management of woodlands, quality and quantity of production could not be sustainable.

Private sector development is a potential option for economic growth for addressing poverty and also at the same time addressing problems related to the energy sector. But decrease in fuelwood price discouraged effort to improve efficiency. There is also a lack of market-based mechanism and value chain financing to support value chain actors. Similarly, insufficient capital to expand production and wide distribution is also important setback to improve technology and increase sales of improved cook stoves.

Similarly, local communities had limitation of knowledge and expertise to produce and utilise efficient charcoal kiln and cook stoves. There is also lack of Standards, Certification and Label on products for end users for informed decision making on purchase. Due to limitation of effective promotional materials and campaign strategies, level of awareness and capacity on sustainable biomass energy technologies is limited.

**Main conclusions and recommendations**

**Conclusion**

The EEPUC Project is well designed, but still much room for improvement. Women are very much connected to fuelwood and charcoal in Sierra Leone and the project adopted gender strategy to address the gender gaps and its importance to mainstream in national development policy (energy policy). The project was planned for 2015-2019 but due to the Ebola outbreak, it was delayed and only initiated in 2016. Project intends to reduce GHG emissions in the rural households and industrial sectors of Sierra Leone through integrated and sustainable biomass resource production and utilization, and introduction of sustainable and efficient energy technologies. Within the three years period, project was able to review National Energy Policy 2009 and developed updated draft policy document, implemented tree planting to create woodlots in 36 acres of land in Kasewa and Makolerr villages of which some area in Makolerr village was destroyed by fire, conducted training on installation, operation and maintenance of energy efficient furnaces/stoves/kilns for entrepreneurs, craftsman and technical students.

To address the Climate Change problems and fulfil commitment of reducing GHG emissions and improve livelihoods of rural communities, project attempted six main approaches: improvement in policies, establishment of institution (community institutions), capacity enhancement, framework for quality assurance, technology improvement for emission reduction and strengthen monitoring and evaluation. In three years period, the project was able to deliver only few interventions. The Project had problem in management and implementation and due to that it is able to accomplish only few of the targeted activities and facing several challenges to complete the remaining activities for meeting the targeted results. Project Inception workshop was delayed which delayed work-plan preparation and latter approval of work plan and procurement was delayed. The project board meeting could not take place timely which affected approval of work-plan and programs. Moreover, project could not receive timely and sufficient technical support from the Ministry of Energy and Ministry of Forest. Despite repeated attempts from project management to encourage Ministry of Energy for its active engagement and support it failed. These issues were mentioned in the PIR and also planned further discussion to address this challenge by either rotating chairmanship or other options but no progress took place. Project team also misunderstood the project activities e.g. they believed that the training for entrepreneurs, craftsman and technical students is all to do for charcoal production and improved cook stove program but did not realise that there is provision of such training for different target audience e.g. ministry staffs, rural users and producers of charcoal and cook stoves from the rural areas. Due to this confusion such trainings were not carried out. Similarly, project team were found waiting for the financial incentives scheme to initiate several other activities which they could do without it also e.g. they could develop standard by revising references for kiln and cook stoves for certifying and this does not need to wait Financial scheme. Similarly, establishment of RKLCC, CCDC and establishment of monitoring and evaluation mechanism and also Monitoring, Verification and Enforcement set-up could be done as these are not related to loan and rebate scheme.

The project revised to harmonise and update National Energy Policy 2009 but approval and endorsement was still not done. Project trained entrepreneurs, craftsman and technical students from the city but training for rural communities and promotion of improved cook stoves and efficient kilns to the target rural communities was yet to be conducted. The project had to establish functional Research, Knowledge, Learning and Coordination Centre (RKLCC), a Cook Stove and Charcoal Development Center (CCDC) with laboratory to test charcoal kiln and cook stoves, develop standard for kiln and cook stoves and certify. Also need to conduct training for capacity building of CCDC and training for rural communities on efficient charcoal production and utilisation. Project identified DoE for establishment of Research, Knowledge, Learning and Coordination Centre (RKLCC) and also made several advertisements for hiring an expert to establish the lab for testing charcoal and cook stoves but not able to find one and re-advertisement is made again. The Renewable Energy Centre in the Government Technical Institute DoE building was identified for CCDC and establishing lab but technical team suggested that the building is not suitable for installing equipment and it need heavy renovation. Similarly, while procuring the equipment for the lab, procurement made a mistake and did not include provision of installation of equipment and to install these equipment there is no expert within the country and bringing expert from outside costs a lot and there is no budget for installation of equipment. Program specialist from UNDP mentioned that she is trying to find the expert and also way to bear the cost. Due to lack of establishment of Monitoring, Verification and Enforcement arrangement, it is not able to generate information to support Designated National Authority (DNA) to develop and leverage carbon finance.

Many activities of the project are linked to loan, grant and rebate scheme and as per earlier agreement, the financial institution of the Sierra Leone named BRAC committed to take responsibility of management of this scheme but it stepped back at the time of implementation. This created big challenge to the management and due to this implementation of several activities were affected. As per UNDP rules, it is not allowed to loan money so UNDP initiated communication with Regional Office (RO) for their advice. But communication started only 30th October 2017 (followed in 26 Feb 2018 and 17 April 2018). This indicates that project management came to know about BRAC’s decision only in the middle of 2017. Weak coordination with the partners is the reason that delayed project activities. If management had coordinated with the partners closely from the beginning of the project, then it would be aware of partners’ intention and prepare accordingly to prepare alternative approach to fill the gap. Now, after receiving the advice from the UNDP regional office, the Project Steering Committee approved hiring of the Financial Engineering Expert to develop loan, grant and rebate scheme to promote improved kiln and stoves.

As per the project’s initial plan, in the first two years, it had to produce and distribute a large number of cook stoves and kilns in rural areas, develop the regulatory framework containing regulations, procedures, standards and incentives for the smooth and effective implementation of biomass energy application, establish procedure, implementation arrangement, oversight and modalities for the implementation of start-up grant and end user rebate scheme. Then they should be monitoring impact of these activities and with feedback from monitoring should have made technical improvement of stoves/kiln and also improvement in financial schemes. Then in the remaining two years, replicate in the new areas.

**Recommendation**

|  |  |  |
| --- | --- | --- |
| **Rec #** | **Recommendation** | **Entity Responsible** |
|  | **Outcome 1** |  |
| 1. | The Energy policy is very important to support energy related activities. Project provided support to review and update the National Energy Policy 2009 but it is still in draft form. Hence it is recommended to follow up with the Ministry of Energy for approval and endorsement. After approval, there should be activities to make people aware of the policy and the important provisions that supports people. | UNDP CO/Project Management |
| 2. | As early as possible, establish RKLCC and install equipment of the lab and train staffs so that research and certification activities could be initiated. | Project Management |
|  | **Outcome 2** |  |
| 3. | As per project plan, after accomplishment of first round of work of production and distribution of kiln and cook stoves and also implementation of the loan and rebate scheme, monitoring and evaluation should have been done to provide feedback for improvement in technology and also scheme and replicate in new areas. Project is pushed far behind so need to initiate remaining activities immediately and also follow implementation with standard monitoring and evaluation. Within the remaining one year period, project should meet its targeted activities of financial scheme implementation, kiln establishment and stove production and trainings. | Project Management |
| 4. | Also establish targeted number of kilns and produce targeted number of cook stoves in the targeted areas i.e. rural communities within the coming one year. | Project Management |
|  | **Outcome 3** |  |
| 5. | Project should consider to establish bigger woodlots for demonstration (piloting) of rotational harvest for wood supply for charcoal production and wood for cooking stoves. Woodlot program should include other income generation activities e.g. agro-forestry with cash crops. | Project Management |
|  | **Project Implementation and Adaptive Management** |  |
| 6. | M&E activities were weak. Implementing agency should immediately establish M&E mechanism so that project activities could be monitored closely and feedback is provided on time to strengthen adaptive management. They should also permanently arrange qualified expert in the Ministry of Agriculture, Forest and Food Security to assess the carbon sink and also in Ministry of Energy to assess emission reductions from improved stoves and kilns because these activities need to be carried out on regular basis even beyond the project life. Such monitoring and verification will support DNA of the government with the data (quantity of carbon stock information and decrease in emissions) to claim from carbon finance. Besides, as provisioned in the project activities, it is necessary to conduct impact assessment to see the impact of project intervention. | Project Management/Ministry of Energy and Ministry of Agriculture, Forest and Food Security |
|  | **Sustainability** |  |
| 7. | Continuous technical support is need for the community members and producers of charcoal and cookstoves to continue their activities beyond the project life and for that, Ministry of Energy and Ministry of Agriculture, Forestry and Food Security has to allocate budget for the additional staff needed to provide technical support to the rural communities and also producers of charcoal and cook stoves. | Ministry of Energy and Ministry of Agriculture, Forest and Food Security. |

More [Recommendations](#_Where_is_the_Greek Government money) are given on pages 37-38.

1. **Introduction**

**1.1 Purpose of the Evaluation**

As per UNDP’s guidance for initiating and implementing Mid-term project Review of UNDP supported projects that have received grant financing from the GEF, this Mid-term Review (MTR) has the following complementary purposes:

* To assess progress towards the achievement of the project objectives and outcomes as specified in the Project Document, and asses 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.
* Review the project’s strategy, its risks to sustainability
* To promote accountability and transparency, and to assess and disclose the extent of project accomplishments.
* To synthesize lessons that can help to improve the selection, design and implementation of future UNDP activities and also help in adaptive management of this project.
* To provide feedback on issues that are recurrent across the UNDP portfolio and need attention and on improvements regarding previously identified issues.
* To contribute to the overall assessment of results in achieving GEF strategic objectives aimed at global environmental benefits.
* To gauge the extent of project convergence with other UN and UNDP priorities, including harmonization with other UN Development Assistance Framework (UNDAF) and UNDP Country Programme Action Plan (CPAP) outcomes and outputs.

The guidance is designed to enhance compliance with both UNDP and GEF evaluation policies and procedural requirements, which are consistent and mutually reinforcing, and use common standards. The guidance also responds to GEF requirements to ensure that Mid-term Review of GEF-financed projects should include ratings of project's relevance, effectiveness, efficiency, monitoring and evaluation implementation as well as sustainability of results (outputs and outcomes).

By adopting “UNDP’s guidance for Conducting Mid-term Review of UNDP-Supported GEF-Financed Projects”, this Mid-term Review responds to both UNDP and GEF requirements for Mid-term Reviews.

1.2 Scope & Methodology

This Mid-term Review (MTR), carried out by independent consultants, was initiated by UNDP Sierra Leone as the GEF Implementing Agency for the “Energy Efficient Production and Utilization of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone” Project to assess progress towards the achievement of the project objectives and outcomes as specified in ProDoc, 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 conducted over a period of 30 days between 10th October and 20th November 2018 by an International consultant and a National consultant. The approach was determined by the terms of reference ([Annex I](#_Annex_I_:)) which were closely followed, via the itinerary detailed in [Annex II](#_Annex_II_:). Full details of the objectives of the MTR can be found in the TOR, but the evaluation has concentrated on assessing the concept and design of the Project; its implementation in terms of quality and timeliness of inputs, financial planning, and monitoring and evaluation; the efficiency and effectiveness of activities carried out and the objectives and outcomes achieved, as well as the likely sustainability of its results, and the involvement of stakeholders. The draft report was revised after receipt of comments and finalised on 14th January 2019. The text has been revised to correct factual inaccuracies in the draft or to include additional information, while other comments have been reproduced in full and audit trail is provided in the annex XII with comments from reviewers and responses from the consultants.

The evaluation was conducted through the following participatory approach to provide it with sufficient evidence upon which to base conclusions:

* extensive face-to-face interviews with the project management and technical support staff. Throughout the evaluation, particular attention was paid to explaining carefully the importance of listening to stakeholders’ views and in reassuring staff and stakeholders that the purpose of the evaluation was not to judge performance in order to apportion credit or blame but to measure the relative success of implementation and to determine lessons learned for the wider GEF context. Wherever possible, information collected was cross-checked between various sources to ascertain its veracity, but in some cases time limited this. A full list of people interviewed is given in [Annex III](#_Annex_III_:).
* face-to-face interviews with local stakeholders and project staffs;
* face-to-face interviews with National Project Director (Director of Energy, Ministry of Energy) and Deputy Director of Ministry of Agriculture, Forestry and Food Security and Director of CORD-SL, West Energy and Project Manager, UNDP CO, National Consultants;
* a thorough review of project documents and other relevant texts, including the Project Document, revised log-frame, and monitoring reports, such as progress and financial reports prepared for UNDP and annual Project Implementation Reviews (PIR), minutes of Project Steering committee meetings, technical reports and other activity reports, relevant correspondence, and other project-related material produced by the project staff or partners; and

Wherever possible the MTR Consultants have tried to evaluate issues according to the criteria listed in the *UNDP Monitoring and Evaluation Policy*, namely:

* Relevance – the extent to which the activity is suited to local and national development priorities and organisational policies, including changes over time, as well as the extent to which the project is in line with the GEF focal areas or the strategic priorities under which the project was funded.
* Effectiveness – the extent to which an objective has been achieved or how likely it is to be achieved.
* Efficiency – the extent to which results have been delivered with the least costly resources possible.
* Results – the positive and negative, and foreseen and unforeseen, changes to and effects produced by a development intervention. In GEF terms, results include direct project outputs, short-to medium term outcomes, and longer-term impact including global environmental benefits, replication effects and other, local effects.
* Sustainability – the likely ability of an intervention to continue to deliver benefits for an extended period of time after completion. Projects need to be environmentally as well as financially and socially sustainable.

**Note:** Relevance, Effectiveness and Efficiency analysis is not mandatory for MTR but Consultants feels these are important to analyse for better analysis of implementation practise and to draw appropriate recommendations.

The original logframe in the Project Document was revised significantly in 2016 and change was made during Project Inception workshop (PIW). The project logframe, comprising 3 Components, 3 outcomes and 12 Outputs, has been used throughout as the basis for this evaluation (see [Annex V](#_Annex_IV_:)), and the MTR has evaluated the Project’s performance against these according to the current evaluation criteria provided to it by the GEF. This is reproduced in Annex XI for clarity. Project results were measured against achievement indicators guided by evaluation questions (tracking tools, Annex IX).

In addition, other scales have been used to cover sustainability (Annex XI-ii), monitoring and evaluation, and to assess impacts. The ratings for “achievement of outcomes” and “progress towards intermediate states” translate into ratings for the “overall likelihood of impact achievement” on a six-point scale.

The results of the evaluation were conveyed to UNDP and other stakeholders ([Annex IV](#_Annex_V:_List)).

1.3 Constraints

Despite repeated attempts, consultants were not able to meet some of the stakeholders. Detailed breakdown of provisioned budget and actual expenses for each component year wise of the UNDP, GoSL and other partners were not available so detailed analysis of financial performance of the project could not be done.

1.4 Structure of the Evaluation Report

The MTR report is structured in line with UNDP’s guidance (see Annex 1). It initially presents an Executive Summary of the evaluation, giving a brief background of the project and its design, a summary of the main findings related to the activities, management, and important aspects such as partnership and sustainability. This is followed by an Introduction outlining the main elements of the project and evaluation, such as problems addressed by the project, overall progress and the methodology adopted. Other chapters include the following Sections:

* Project description and development context (this includes project design, its rationale and development context, the problems that the project sought to address, the objectives, establishment of baseline, key stakeholders and expected results)
* Findings (Results of implementation and comparison with the targets as set)
  + Project Design / Formulation
  + Project Implementation
  + Project Results
* Conclusions, Recommendations & Lessons
* Annexes.

2 Project Description and Development Context

2.1 Project Start and Duration

The Project Document was signed on 24 April 2015 for the duration of four years. Project activities were officially launched in February 2016 with the recruitment of a project manager. The project will end in December 2019. The Mid-term Review was conducted in October-November 2018. After a thorough analysis of gaps identified from analysis of status and trends, secondary information and interaction with relevant stakeholders, the project identified activities for this project.

The key timelines which are planned or expected for project implementation are shown in Table below.

**Key timelines planned or expected for project implementation.**

|  |  |
| --- | --- |
| **Key project’s milestones** | **Date** |
| Submission of Concept to GEF | 7 March 2012 |
| Approval of the Concept by the GEF Board | 15 November 2012 |
| Development of a Full Project Proposal |  |
| Submission to GEF of a Full Project Proposal | 31 July 2014 |
| Project Document Signature date | 24 April 2015 |
| Project activities launched | 5 February 2016 |
| Mid-term Review Date | 10Oct-20Nov 2018 |
| Original Planned Closing Date | December 2019 |
| Revised Closing Date | n/a |

2.2 Problems that the Project sought to Address

**Immediate and Development Objectives of the Project**

The project “Energy Efficient Production and Utilization of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone” is aimed to bring economic, social and environmental benefits through the production of certified charcoal from sustainably sourced feedstock and through the promotion of improved cookstoves to reduce fuel wood demand, improve health and reduce greenhouse gas emissions. The project is well aligned with: i) the Agenda for Prosperity (2013-2017) to promote a low carbon, climate resilient, high growth, gender sensitive, inclusive and sustainable development path; and ii) the National Forestry Policy (2010) to promote the rehabilitation and conservation of forests, soil and water resources, and other relevant national policy and legal frameworks.

2.3 Project Description and Strategy

The project aims to achieve its objective through three components, 3 outcomes which have a total of 12 outputs. The project was designed to address the problem by improving/establishing institutions to reduce GHG emissions, make biomass resources production and utilisation sustainable, and promote sustainable biomass energy technologies in Sierra Leone using market based approaches.

***Goal:*** Reduction of GHG emissions in the rural household and industrial sectors of Sierra Leone through integrated and sustainable biomass resource production and utilization, and promotion of sustainable biomass energy technologies in Sierra Leone using market based approaches.

***Objective*:** The overall (or immediate) objective of the project is:

Removal of barriers to sustainable production and utilisation of biomass resources in Sierra Leone and application of biomass energy technologies to support local economic, environmental and social development that leads to GHG mitigation.

The Project is designed to implement three components to generate Three outcomes.

**Component 1.** Policy and regulatory frameworks on the use of more efficiently produced charcoal and improved cook stoves

**Outcome 1:** Strengthened institutional capacity on biomass resource utilization at the national, regional and community level. Operational effective policy, legal, and regulatory frameworks and review mechanisms on biomass energy technology applications.

**Output 1.1** Adequately trained and capable decision-makers and relevant stakeholders (from EPA-SL, ministries, private sector, rural communities, etc.) leading efforts, communicating and managing more efficiently produced charcoal and improved cookstove utilization in an integrated manner

**Output 1.2.** Formulated, approved and enforced policies, laws and regulations on more efficient charcoal and improved cookstoves production

**Output 1.3**Developed standards and certification protocols for efficient charcoal and improved cookstove

**Component 2.** Development of public-private initiatives for the improved and more efficient production of charcoal and the scaling up of improved cookstove production

**Outcome 2:** Increased number of investments on improved, more efficient charcoal and improved cookstove production in Sierra Leone

**Output 2.1** Established partnerships between the public and private stakeholders involved in the value chain of charcoal production and utilization

**Output 2.2** Developed incentives through carbon finance, microfinance, rebate and loan guarantee schemes to scale up sustainable charcoal and improved cookstove businesses

**Output 2.3:** Implemented and operational i) 300 locally produced industrial stoves for income generating local enterprises such as fish smoking, bakery, palm oil processing and tobacco curing and ii) 700 institutional stoves for school, prisons and hospitals.

**Output 2.4:** Implemented and operational 1,000 locally produced efficient kilns for the sustainable production of charcoal.

**Output 2.5: Locally produced 14,000 energy-efficient stoves in rural households for cooking needs implemented and promoted for replication**

**Output 2.6 Established and operational framework for the phase-out of traditional charcoal kilns and cook stoves**

**Component 3.** Improved, more efficient production and efficient utilization of certified charcoal and cookstove

**Outcome 3:** The production and utilization of certified charcoal and certified improved cook stoves are common practices in Sierra Leone.

**Output 3.1:** Developed gender sensitive capacity development and modules for the production and utilization of certified charcoal and ICS

**Output 3.2** Developed and implemented promotional schemes on the social, economic and environmental co-benefits of improved charcoal and improved cook stoves to create demand, generate good buy-in and willingness to pay

**Output 3.3** Sensitized key value chain actors through public awareness campaign and capacity development

Baseline indicators were fully established and the latter given in the Project Document ahead of the Project’s commencement.

**2.4 Implementation Arrangement and Main Stakeholders**

UNDP Direct Implementation Modality (DIM) was applied to ensure broad stakeholder participation and to create both a high flexibility and an enabling environment for innovation. Project was implemented by UNDP through the Ministry of Energy in coordination with various other ministries, private sector, NGOs and research institutes relevant to the project activities. UNDP CO assured activities implementation, monitoring and ensuring proper use of GEF funds to assigned activities, timely reporting of implementation progress as well as undertaking of mandatory and non-mandatory evaluations. All services for the procurement of goods and services, and the recruitment of personnel were conducted in accordance with UNDP procedures, rules and regulations.

The project had a Project Board (PB), which is chaired by the Secretary of Ministry of Energy. The project board is responsible for making management decisions on a consensus basis for the Project when guidance is required by Project Manager, including approval of project revisions. The Project also had a National Steering Committee (NSC) under the chairmanship of the Director General of Department of Energy with representation from MLCPE, MFED, MTI, MAFFS, UNDP, Cooking Energy Stakeholders Group, Charcoal Producers Association, Project Director, Project Manager, Private sector and co-financing partners and was overseeing the preparation and implementation of the work programme of the EEPUC. EEPUC was represented by relevant other Ministries/Departments, UNDP CO, related national government and non-government bodies, private sector organisations and civil society organisation. The Project Manager (PM) is responsible for running project on a day-to-day basis on behalf of the implementing Partners within the constraints laid down by the Board. More information on project management arrangement is provided in the following section.

The project development process involved many stakeholders including the private sector, financial institutions, non-government agencies that are related to energy. Consultations were held with the Ministry of Energy, other relevant government departments and Research Institute in order to discuss the project concept and the gap identification. As per project document following stakeholders were planned to include in implementation process:

**Division of Energy (DoE), Ministry of Energy**: The DoE was set up to conduct strategic planning on energy security and access issues and was mandated to introduce new energy resources and ensure efficient utilization of energy resources. The unit is responsible for organizing and conducting research and development in renewable energy and energy efficiency and conservation. It is also responsible for training public and private and CSO stakeholders and students in subjects like climate change and RE and EE.

**Environmental Protection Agency (SLEPA), GEF Focal Point:** The SLEPA explored feasibility to develop sustainable supply of feedstock through community woodlot as an output to compliment the demand for efficient cookstove and charcoal. The team will work closely with SLEPA in designing the GEF funded project and work to enhance their capacity in the coordination and networking of clean technology and to develop baseline data inventory monitoring system.

**Ministry of Trade and Industry:** The Ministry explored feasibility to address the wood energy use in the cottage industries like tobacco curing, fish smoking, cassava gari production, bakery and brick/ceramic production. The GEF project will work closely with the Ministry to enhance their clean credential and green technical capacity. As there was no directory on the number of enterprises, this project will help to develop a directory of microenterprises with information like volume of firewood used and also monitors the GHG savings from this sector.

**Forestry Division (FD)** is under the Ministry of Agriculture, Forestry and Food Security. The GEF funded project will with FD to promote micro-nursery and community forestry through tree replanting and Farmers Managed Agroforestry to ensure that there is sustainable supply of renewable biomass to decrease pressure on the natural forests. This project will work closely with the EU’s REDD+ project that are managed by this division and complement their work to enhance the capacity of the Forestry experts at the national, district, Chiefdom and village level.

**Ministry of Local Government and Rural Development:** This ministry is mandated to design, implement, coordinate and evaluate the policies and is also committed to ensuring access of the citizens to professional training, enabling everyone to acquire and constantly update knowledge and skills to enter and / or remain working.

**UNDP’s Business Development Service (BDS) and Agribusiness Services Programme (SABI):**

The objectives of the BDS project is to operationalize business development services in different locations by creating self-employment opportunities for 250 youths as part of the Youth Employment & Empowerment Programme. Similarly, the SABI project is a joint initiative between the GoSL, UNDP, FAO and UNIDO, modeled after the SONGHAI Centre in Benin that seeks to transform the agricultural value chain, boost the attractiveness of the agricultural sector to youth entrepreneurs in urban and rural communities and create greater employment opportunities nationwide. The BDS and SABI will compliment Component 2 of this project.

**Micro-Finance Institution:** BRAC is the largest MFI in Sierra Leone and has established 36 branches within the last 2 years. BRAC will contribute in developing viable MFI business in Sierra Leone. BRAC also has UNCDF funding, it will work with the project to design loan and service products for scaling up charcoal and cookstove production.

**World Food Program (WFP):** WFP has been operational in Sierra Leone since 1968. WFP operates in the Southern, Northern, Eastern and Western regions with an office in Freetown and one sub-office located in Kenema. In collaboration with the GoSL and other partners, WFP pursues the goal of feeding the hungry poor by supporting reconstruction and rehabilitation following the devastating civil war in the 1990s.

**Renewable Energy Centre (REC), Government Technical Institute, Freetown:** Set up in 1964, the institute has about 3,000 students doing 3 years diploma courses in various technical disciplines. The center has experience in developing solar, hydro and biogas technology. The institute is partnering with ECREEE on RE and EE projects. The project will work with REC to strengthen the technical and financial capacity and also explored the potential to develop REC as a Centre of Excellence in RE. REC contribute in setting up the Cookstove and Charcoal Development Center (CCDC) for the testing and certification program with support from Aprovecho.

**ECOWAS Renewable Energy and Energy Efficiency Center, Cape Verde (ECREEE):** ECREEE as ECOWAS’ Center of Excellence was established to enhance regulatory, financial and technical capacity of ECOWAS members in formulating REEE policy and strategy. This project will work with ECREEE's West African Clean Cookstove Alliance (WACCA) initiative to strengthen their support in Sierra Leone especially in the development and harmonization of standard and label for cookstove.

**WestWind Energy:** The founder of WonderStove was the pioneer who started to introduce the Kenyan charcoal stove in 1989. WonderStove had trained many early workers who also started their own production. WonderStove provides a 6 months guarantee and provide repair service beyond the warranty period. They have been producing their own clay liner and contract out some of the production.

**Toyola Energy:** Toyola Energy Limited started producing and distributing energy efficient charcoal stoves for domestic users in the urban and rural parts of Ghana and is now seeking to expand their business model to Sierra Leone. Toyola have implemented an innovative business model that includes the poor along the whole value chain as suppliers, manufacturers, retailers and customers and accounts for positive economic, social and environmental effects.

**Bockarie Kargbo at Lunsar:** Started making cookstove liner and cookstove in 1993 and had trained other apprentice. Bockarie used the clay from their site to make liner as well as brick and compressed blocks. The owner is one of the pioneers and partnered with WonderStove to introduce the stove from Kenya. Access to high quality clay is critical for making the durable liners for the stove as well as for making high quality brick with high refractive properties. As a pioneer and given his excellent factory space, Bockarie could train to produce liners for the 15,000 stoves.

**Charcoal Producers Association (CPA):** CPA serves its members through advocacy and dialogue with government on policy and regulatory issues as well as help to promote the safe and sustainable production and use of charcoal. This project will partner with CPA to strengthen their capacity and to promote the use of efficient kilns and sustainable supply of fuelwood for charcoal production.

**Environmental Foundation of Africa (EFA):** EFA is currently conducting a household energy usage survey as part of the DFID funded CKDN project ‘Renewable Energy Empowerment in Rural Sierra Leone: A Vision to Electrify Rural Sierra Leone’. EFA will share data with this project for its use. This project will benefit from EFA’s experience from working with local community and beneficiaries in the scaling up of kiln and cookstove as inclusive business.

**International Center for Research in Agroforestry (ICRAF):** The World Agroforestry Centre (ICRAF) in Sierra Leone support the ‘Building Biocarbon and Rural Development in West Africa Project (BIODEV)’. BIODEV is working in Guinea, Mali and Sierra Leone to demonstrate development and environmental benefits from undertaking a "high value biocarbon approach" across large landscapes. The four-year project, implemented in partnership with the Center for International Forestry Research (CIFOR) and regional and international universities, is funded by the Government of Finland. This GEF funded project planned to work with ICRAF to develop sustainable rural development intervention for securing food and bioenergy access.

**EU Energy Initiative Partnership Dialogue Facility (EUEI-PDF):** EUEI PDF on request from Sierra Leone government is assisting to formulate Household Cooking Energy Plan. This will help to develop a comprehensive Household Cooking Energy Plan for Sierra Leone and will build on the scoping study that EUEI-PDF has undertaken in 2011 with the Ministry of Energy. The project will be carried out under the framework of the Africa-EU Renewable Energy Cooperation Project (RECP) and will be implemented in two phases.

**Welthungerhilfe (WHL):** WHL started its engagement in Sierra Leone in 2003. Since then, around 20 projects and working in WASH, agricultural development and income generation for disadvantaged population. WHL is the implementer of the WAPFR project which is working for the reduction of fire wood for fish-conservation industry (fish-smoking) in Western Area Peninsula.

**WAPFR (Conservation of the Western Area Peninsula Forest Reserve) and its Watersheds:**

WAPFR is a Government project, funded by EU and is introducing participatory processes in decision making for the sustainable use of natural resources that contribute to the reduction of rural poverty in the Western Area Peninsula and to conserve and sustainably manage the Sierra Leonean Western Area Peninsula Forest Reserve (WAPFR) and its watershed. This project will also build a new and final boundary of the forest reserve with an official enforcement of this boundary. The WAPFR is implemented by EPA-SL (Environment Protection Agency – Sierra Leone). The GEF funded project seeks to add incremental value to the activities under this project in order to generate significant global environmental benefits, one of which is ensuring that charcoal production is not leading to continuous deforestation.

**GERES (GERES):** Through the StovePlus program and in collaboration with GACC,GERES is providing technical support to project developers in West Africa in the areas of baseline assessments, market study, improve cookstove production, demand creation and testing. This GEF funded project will work with GERES in scaling up improved cookstove in Sierra Leone.

**CARE:** CARE UK is working with USAID in Northern Sierra Leone and Guinea on the STEWARD forestry project. They are working with a number of communities on improved land use management and agriculture.

**BioClimate** is based out of Edinburgh, Scotland, with an active team of Sierra Leoneans working on sustainable forest management, supported by the STEWARD Project. They focus on payment for environmental services (PES) for improved forestry and land use management using the Plan Vivo carbon management approach.

**Regional Collaboration Center (RCC), UNFCCC:** In order to address the under representation of CDM projects/programs in LDC, RCC in Lome, Togo is tasked to provide financial and technical support to strengthen the capacity of the DNAs and project developers in West Africa for meeting CDM requirements. In collaboration with UNDP MDG carbon, this GEF funded project will seek to develop the improved cookstove and charcoal kilns programs as bankable and verifiable carbon project. MDG Carbon and RCC will help to look for potential investors in these two programs.

**Food and Agriculture Organization (FAO):** FAO has developed the Bioenergy and Food Security (BEFS) Approach for Sierra Leone that seeks to assist policy-makers in assessing the interplay between natural resource availability, bioenergy production potential, rural development and food security, and in strengthening their capacity to manage the trade-offs associated with bioenergy development.

**Energy for Opportunity (EFO):** EFO is a national NGO that was established in 2005. The organization is currently operating in six districts in the country focusing on energy, sanitation, clean water, health promotion and agriculture. EFO has 25 permanent staff with extensive experience in community mobilization, battery charging, clean water projects, and community energy projects, including carrying out fuel wood trade, energy assessments and surveys, solar capacity design, installation and training.

**Aprovecho Research Center (ARC)** is a non-profit corporation established in 1976 and it is dedicated in conducting research, developing and disseminating appropriate technological solutions for meeting the basic human needs of refugees and impoverished people and communities in the developing world. This GEF funded project will explore the feasibility to collaborate with ARC to set up stove testing labs in Sierra Leone in collaboration with regional ECREEE in Cape Verde.

**Consumers:** The consumers especially women will be important beneficiaries of the bioenergy program, as they are the one to reduce the share that energy represents in household budgets. However, given the relative lack of knowledge of many buyers in Sierra Leone, an information and outreach campaign will be needed to explain the value of considering the total cost of ownership before making an appliance purchase.

**University of Njala, Freetown:** This is the major institution of [higher education](http://en.wikipedia.org/wiki/Higher_education) in the country. The Department of Community Development leads local researchers and supervises the data collection and analysis.

**EFA:** The Environmental Foundation for Africa (EFA) “aims to protect and restore the environment in West Africa. It has been active in Sierra Leone for over 15 years. EFA leads environmental education and awareness raising campaigns, restores degraded lands and conserves forests, minimizes the impacts of civil war on the environment and its inhabitants, and equipped thousands of people with sustainable livelihood skills such as agroforestry.”

3. Findings

3.1 Project Design/Formulation

The project was designed to address the problem by improving/establishing institutions to reduce GHG emissions, make biomass resources production and utilisation sustainable, and promote sustainable biomass energy technologies in Sierra Leone using market based approaches. The design of the RRF was clear with clear outputs milestones (except for Mid-term level milestones missing and indicators not disaggregated gender wise), activities for each outputs and SMART indicators to monitor implementation and achievements. The project was designed to work at both a macro level (national government scale, national level private sector) and a micro level (local government and local communities). On the national level, it aimed to identify policy gaps and recommend legislative needs, establish institutional set up and enhance capacity of these institutions and promote evidence based planning. Similarly, at the micro level it aimed to work at community level in establishing community managed woodlots, train communities on improved charcoal kilns and cook stoves and train to repair these devices etc. Similarly, to provide additional income, project also supported to plant fruit trees inter-cropped with vegetables and ground nuts.

The implementing and executing institutions were involved in the project from the project design phase. The project design involved a thorough analysis of capacities of various partners and their interests. Project design has incorporated lessons learned from several relevant projects in other countries and also its own experiences from earlier projects in Sierra Leone. Roles and responsibilities of implementing partner and other institutions were very clearly defined in the project design. During project formulation, gender issues were discussed and development interaction also included women. The indicator of the project does not specify gender wise disaggregated results but within the community women will also benefit from the outcome of the project. Hence to address these problems, the project was designed to apply following approaches:

3.1.1 Analysis of Logical Framework

The log frame has a single development objective, three components and 3 outcomes. The extensive activities are also listed in full, complete with their own indicators. The objectives, components and outputs are clear and appropriate to the issues and also designed considering the timeframe of the project. Project also utilised lessons from other projects related to forest, firewood, cookstoves, kilns and energy (see in 3.1.4) and also capacity of executing/implementing agencies considered while developing project activities (see 3.1.5 - 3.1.7). Project design sufficiently analysed potential risks and assumptions (see 3.1.2) related to the project and it is well articulated in the PIF. Roles and responsibilities of the partners were made clear from the project design phase (see 3.1.7 & 3.2.2). The logical framework was revised in 2015 but no change was made in indicators. There has not been any change in number of outputs or activities from the original logframe. But inception workshop suggested to add an activity to establish woodlots to strengthen supply side for reducing pressure on the forest because ICRAF and EU-REDD+ programmes which focus on the supply side, in partnership with FD and Charcoal Producers Association and local Chiefdom had left the country as a result of the Ebola crisis and had never returned.

The indicators of the logframe are all SMART (Specific; Measurable; Achievable and attributable; Relevant and realistic; Time-bound, timely, trackable and targeted) and are relevant and precise. All are based on sound scientific monitoring protocols using the most relevant measures for a given criteria. But only drawback of the logframe was that it did not have mid-term target indicators and indicators are not gender disaggregated.

3.1.2 Assumptions and Risks

The key risks identified at project formulation phase are as follows:

* Legislative delay that may go beyond the project life span.
* Inability of members and low buy in of the Sierra Leonean Parliament to fully understand the entire concept of energy efficiency and the importance thus may not show much interest in the issues.
* Slow/delayed adoption of the new law and policy by the Sierra Leonean government.
* The mandates of SSE and other relevant agencies to the project are not revised timely. This may pose a threat to the project.
* Lack of project ownership
* The willingness of the staff of these institutions to adopt new knowledge and practice
* insufficient training of laboratories staff, manufacturers, importers and retailers in the implementation of the labeling program
* Lack of adequate training of key stakeholders to the project
* Inadequate training on procedures for energy consumption measuring, calculation of energy efficiency index and enforcement procedures.
* The Sierra Leonean economy is highly dependent on oil import. Any increase in the price of oil in the international market may have significant impacts on the volume of economic activities in Sierra Leone. The current and future price of fossil fuel could influence the uptake and buy in of bioenergy options. A drop in international and regional oil prices would diminish the attractiveness of bioenergy measures and therefore could likely threaten the willingness of the stakeholders to engage in the proposed bioenergy reform & strategy.
* Political upheaval and instability could affect economic development and the uptake of bioenergy technology
* The Government and many of these development partners may be unwilling to put in this quantum of investment.
* The unstable nature of the exchange rates of both local and foreign currencies and high interest rates.
* The higher upfront cost of bioenergy appliances (improved cookstove, kiln) may be a deterrent to consumers.
* Insufficient numbers of households purchase alternative energy technologies to conduct useful analysis
* The anomalies in the Sierra Leone marketing/distribution system such as the proliferation of traditional and substandard products, monopoly of distribution etc., may pose a potential danger to the success of the project. This makes the current business environment not conducive to the development of bioenergy.
* There is low level of awareness on the potentials of bioenergy solutions to bring about economic development and environmental sustainability.
* There is also lack of thorough communication with key policy makers.
* More also, there is lack of an accurate reporting of existing legal and regulatory framework.
* Not many Sierra Leoneans have information on the existence and availability of bioenergy appliances.
* Illiteracy and general low capacity among households in target areas poses challenges in terms of data collection and impact measurement

Of these risks, only financial risk like unwillingness of government and partners to put in this quantum of investment, higher upfront cost of bioenergy appliances may discourage consumer and unstable exchange rate of local and foreign currencies and high interest rates are of high level of risks. Project made strategy of promoting public-private partnership, complementing adequate structures, mechanism, policy and legislation to encourage investment. Sierra Leone is dependent on oil imported from international market and changes in oil price in the international market will have impact on the bioenergy measures and this is considered as medium level risk to the project intervention. The forecast of oil price in international market indicates towards stable high price for some time so chances of this risk is also minimum. Similarly political instability could also be a medium level risk but recent past indicates that there is very low chances of such risk. Remaining other risks identified in the project documents are of low level.

3.1.3 Relevance

The Agenda for Prosperity (AfP) 2013-2017 intends to drive Sierra Leone to an inclusive middle income country by 2035 with low emissions, climate resilient, gender sensitive and sustainable growth trajectory. It also commits to establish inclusive development with the goals of creating opportunities for all in a fair, equitable and inclusive manner.

This project is also in line with the GEF climate change mitigation objective 2: Promote market transformation for energy efficiency in industry and the building sector and is designed to remove the barriers to access the affordable alternative energy by introducing the necessary legal, institutional and regulatory frameworks for scaling up of bioenergy solutions. It has activities to remove the technical barriers by providing government agencies, manufacturers and importers with technical assistance and a certified independent testing facility to measure the energy consumption of end-use appliances. It will also address the information barriers with a component to carry out outreach programs designed to sensitize the Sierra Leone populace on bioenergy and energy efficiency concepts and its potential for socio-economic development.

3.1.4 Lessons from other Relevant Projects incorporated into Project Design

Project development reviewed local, national, regional and international lessons learned in the scaling up of bioenergy solutions as inclusive business and value chain financing. This helped to design, adapt, adopt and recommend proven and tested fiscal, economic and value chain incentives that reward hard work, productivity and innovation. Project development also investigated the financial mechanisms of similar programs as the EEPUC in Sierra Leone as well as other countries. It was found that technology led and input-based approach can be ineffective and inefficient in developing public goods and services and appliances given free often do not install ownership. Project also drew lessons regarding addressing barriers from the former and existing projects like the Participatory Rural Energy Project and Second National Communication.

**3.1.5 Planned Stakeholder Participation**

At the project development phase, the project development team undertook extensive consultations with a wide range of stakeholders from National government bodies, Non-government institutions, research institutions, regional government bodies, large industries and university through a series of opinion polls, presentations, interviews, group discussion and workshops. These wide-ranging consultations were undertaken to ensure that stakeholders at all levels are aware of the project and its objectives and that they assist in the monitoring, measuring and reporting emissions. A thorough assessment of relevancy, experience and capacity of implementing partner and other implementing stakeholders was also conducted. This assessment also helped to understand and utilise strength of the implementing partners and also develop capacity enhancement programs. Project design, criteria for potential sites and site selection for piloting was carried out with the stakeholders’ participation. Planned stakeholders and their expertise and potential role in the project is explained in section 2.4 of this report and also in Annex B, page 116 of the ProDoc.

Project was planned to implement following the UNDP DIM modality in close coordination with the Ministry of Energy, Sierra Leone. But Project failed to receive support from several stakeholders e.g. BRAC and few other who stepped back at the implementation phase. Similarly, project was not able to receive quick response from the project board and project board meetings were not held on scheduled time. As a result annual work-plan development, approval, procurements were delayed and these delayed implementation of activities. BRAC which was identified in ProDoc for co-financing and partnering in the implementation of the loan, grant and rebate stepped back at the implementation phase and to address this problem, the loan aspects was subdued into the grant scheme but for this the Project Management Unit waited long on the GEF Regional Office for GEF policy guideline on grant and rebate scheme as it was being reviewed. In managing this risk, the Project Management Unit (PMU) is soliciting technical support from consultancy services for Chief Technical Advisor (CTA) and Financial Engineering Expert (FEE).

3.1.6 UNDP Comparative Advantage

In the inception workshop, UNDP’s project assurance role was presented and discussed in detail. The Participants endorsed the assurance role described in the approved project document. Enhancement of capacities at the national and sub-national levels has been considered by UNDP to be essential to its strategy for Climate Change risk reduction. Accordingly, and in line with the government’s national priorities, support to enhance capacities and make planning evidence based in the fields of energy efficiency improvement, forest and biodiversity conservation and environment management was also a priority area. The EEPUC Project deemed to congruent with these priorities as elaborated in the Sustainable Development Goal where ensuring environment sustainability is one of the priority programme areas for Sierra Leone; second UNDAF priority for Government institutions, the private sector, and local communities manage natural resources in a more equitable and sustainable way, the third UNDP Strategic Plan Environment and Sustainable Development for expanding access to environmental and energy services for the poor, the fourth Country Program to access to support sustainable energy and livelihoods for remote Chiefdoms (Sub-districts/blocks) improved and the fifth, UNDP Strategic Plan and UN Development Assistance Framework for Sierra Leone (2015-2018) to Strengthen national capacities to mainstream environment and energy concerns into national development plans and implementation systems. The project is in line with the pillars of technical and financial assistance which form the foundation from which risks of Climate Change can be reduced in Sierra Leone. Specifically, the project will help realise four pillars identified by UNDP:

* Development of the capacity of the National and regional government to adapt best practices on climate change threats;
* Establish knowledge base and assure access to the information to encourage evidence based planning;
* Engagement of National and local government and Private sector to reduce risk of climate change;
* Networking with national and regional organisations working in the field of environment and climate change.

In Sierra Leone, UNDP has been working in the field of Natural Resources Management (biodiversity conservation, environment protection), sustainable land management, disaster risk reduction, Renewable Energy and Energy Efficiency, Climate Change (including Climate Change Mitigation, Climate Change Adaptation), Poverty Reduction, Conflict Prevention and Democratic Governance. UNDP has a lot experience in these areas. The project has benefited from UNDP experience from the project development phase to implementation.

3.2 Project Implementation and Adaptive Management

The project was implemented under the Direct Implementation Modality (DIM), with UNDP as the implementing partner, working closely with the Ministry of Energy and other partners. The implementing partner was responsible and accountable for managing the project. UNDP had responsibility on the quality assurance and other relevant project implementation support (identification and recruitment of project and programme personnel, procurement of goods and services, administration of GEF financial contributions and provision of other technical and administrative supports). The PMU managed day to day activities of the project. The pilot sites were selected with the help of the experts by the project to conduct vulnerability and adaptation impact assessment.

3.2.1 Management Arrangement

UNDP Direct Implementation Modality (DIM) was applied to ensure broad stakeholder participation and to create both a high flexibility and an enabling environment for innovation. Project was implemented by UNDP through the Ministry of Energy in coordination with various other ministries, private sector, NGOs and research institutes relevant to the project activities. Regular meetings were conducted to discuss on progress and constraints of the project. UNDP maintained high-quality technical and financial implementation of the project through its local office in Sierra Leone. UNDP CO also assured activities implementation, monitoring and ensuring proper use of GEF funds to assigned activities, timely reporting of implementation progress as well as undertaking of mandatory and non-mandatory evaluations. All services for the procurement of goods and services, and the recruitment of personnel were conducted in accordance with UNDP procedures, rules and regulations.

The project had a Project Board (PB), which is chaired by the Secretary of Ministry of Energy. The project board is responsible for making management decisions on a consensus basis for the Project when guidance is required by Project Manager, including approval of project revisions. Project assurance reviews were made by the PB at designated decision points during the running of a project. The PB also had responsibility of the Project Monitoring and Evaluation, use evaluations for performance improvement, accountability and learning, assure required resources are committed, arbitrate on conflict, approve appoint of Project Manager (PM) and other key positions, approve annual work plan, quarterly plans and approve changes in original plans. The Project also had a National Steering Committee (NSC) under the chairmanship of the Director General of Department of Energy with representation from MLCPE, MFED, MTI, MAFFS, UNDP, Cooking Energy Stakeholders Group, Charcoal Producers Association, Project Director, Project Manager, Private sector and co-financing partners and was overseeing the preparation and implementation of the work programme of the EEPUC. EEPUC was represented by relevant other Ministries/Departments, UNDP CO, related national government and non-government bodies, private sector organisations and civil society organisation. Despite repeated approach by UNDP Country Office to Ministry of Energy to encourage active engagement and support, not much success achieved and as a result Project Board meetings were not being held on time, and the required technical support from the Ministry was not made available.

The Project Manager (PM) is responsible for running project on a day-to-day basis on behalf of the implementing Partners within the constraints laid down by the Board. PM ensures the project produces the results as specified in the project document with required standard. Due to delay in recruitment of Project Manager, project implementation was delayed and delayed annual work plan making, decision making and delayed procurement delayed project implementation. Stepping back by some of the partner eg. BRAC and declining by vendor identified for clearing land for woodlots establishment also delayed implementation activities. Projecject had a Project Assistant (PA) to provide administration, management and technical support to the PM. Project also hired both national and international short-term experts to provide technical assistance to support various activities of the project.

**3.2.2 Adaptive Management**

The Project’s adaptive management has been weak due to lack of effective monitoring mechanism. Very limited visits were made to monitor activities of the project in the field. Adaptive management has not been operated effectively at both the strategic level and the tactical level. Late responses and lack of technical support from Ministry of Energy and delay of board meeting was mentioned in PIR of 2016 and this was repeated in 2017 PIR. To address this problem it stated that Steering Committee suggested rotational chairmanship but no action to resolve the problem was found. PIR of 2016 also indicated that the indicators will be revised as they are sharp to measure cumulative achievement of the project but indicators were not changed or sharpened. PIR of 2016 and 2017 failed to bring information on challenges created to implement loan and grant scheme due to stepping back by BRAC.

Project organised Inception workshops to discuss the project components and application procedures. During the inception workshop, stakeholders suggested to pilot woodlot creation and following this suggestion, project conducted plantation in three villages to create woodlots for supply of wood for charcoal production and also firewood for cooking.

3.2.3 Partnership Arrangement

Without contribution of various ministries, local government, research institutes, NGO/INGOs working in energy sector and private sectors, EEPUC project could not succeed. Hence this project was designed to involve a wide range of partners to accomplish various activities related to improving energy use efficiency, improve production of biomass, sustainable supply of wood and generate awareness.

Project involved Environment Protection Agency (SLEPA), Ministry of Trade and Industry, Forestry Division, Ministry of Local Government and Rural Development, UNDP’s Business Development Service and Agribusiness Service Programme, BRAC (micro-finance Institute), World Food Program, Renewable Energy Centre, ECOWAS, WestWind Energy, Toyola Energy, Bockarie Kargbo at Lunsar, Charcoal Producers Association, Environment Foundation of Africa, ICRAF, EUEI-PDF, Welthungerhilfe, WAPFR, GERES, CARE, FAO, Energy for Opportunity, Aprovecho Research Center, BioClimate, Regional Collaboration center, Consumers, University of Njala and EFA. During implementation very few of these were available and that had affected performance of the project. One serious example is that the BRAC, a micro-finance institute identified for operating loan and rebate schemes for kiln/furnaces/cookstoves production stepped back and due to that most of the project activities were affected. BRAC which was identified in ProDoc for co-financing and partnering in the implementation of the loan, grant and rebate stepped back at the implementation phase. To address this problem, the loan aspects was subdued into the grant scheme but for this the Project Management Unit waited long on the GEF Regional Office for GEF policy guideline on grant and rebate scheme as it was being reviewed. In managing this risk, the Project Management Unit (PMU) is soliciting technical support from consultancy services for Chief Technical Advisor (CTA) and Financial Engineering Expert (FEE). It was agreed between the RO and Country Office (CO) to repurpose the fund for the loan guarantee scheme and to hire consultancy services of Chief Technical Advisor (CTA) and Financial Engineering Expert to provide support in the establishment of procedures, implementing arrangement, oversight and modalities for the implementation of start-up grant and end user rebate scheme. Besides, weak technical support from Department of forest and Ministry of Energy also affected the implementation of the project activities. Project received support from community institutions but there is need to raise awareness on benefits of creating woodlots and energy efficient stoves, kilns and furnaces.

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| The Project has worked closely with many stakeholders while developing project document and expected to involve most of them but several of them stepped back. Involvement of some of the stakeholders has been useful to accomplish few activities, hence stakeholder participation is evaluated as **Moderately** **Satisfactory**. |

3.2.4 Gender

Women and children are the ones who are most vulnerable to energy related problems and to climate change. Women in Sierra Leone participate in wood collection and also take care of home gardens that supply fuelwood for their energy needs. They are also involved in charcoal production and have good knowledge of making charcoal. Decrease in supply of fuelwood due to deforestation will have serious impact on women. As women play key role in fuelwood and charcoal production and utilisation, EEPUC project interacted with them from the project development phase to implementation and policy and program formulation activities. This project contributes to Gender Equity at both supply level to consumer level. The gender strategy is adopted by the project to address the gender gaps and its importance has been mainstreamed in accordance with the project document. The project ensures the integration of gender perspective into relevant outputs, particularly sustainable forest management, charcoal production and utilisation of cookstoves.

Project woodlots management groups had high number of women and were in decision making level as well. Cookstove training also involved good number of women which support them in income generation.

3.2.5 Feedback from M&E Activities used for Adaptive Management

The Project’s adaptive management has been very weak due to lack of strong monitoring mechanism. Only few monitoring program was conducted which made limited recommendations. Those recommendations were accepted by the management and used for improvement. There should have been more frequent progress monitoring including technical personnel to accelerate activities implementation and also maintain quality. As per suggested in the inception workshop, project added woodlots creation activities in three villages. The woodlots created were not sufficient to demonstrate rotational harvest of wood for supplying for charcoal production. Similarly, there is also provision in the project document of monitoring the impact of interventions to improve technical aspects for replication and also provide information to DNA of the government. But there was limitation of technical staffs within the relevant ministries to conduct such monitoring and also training, awareness and development of efficient Kiln and cookstoves in the villages were not initiated yet so could not monitor impacts of these in community and overall carbon emission reductions.

Late responses and lack of technical support from Ministry of Energy and delay of board meeting was mentioned in PIR of 2016 and this was repeated in 2017 PIR. PIR informed that the Steering Committee is will further discuss with Ministry on rotational chairmanship to address these problem but no action to resolve the problem was found. PIR of 2016 also indicated that the indicators will be revised as they are sharp to measure cumulative achievement of the project but indicators were not changed or sharpened. PIR of 2016 and 2017 failed to bring information on challenges created to implement loan and grant scheme due to stepping back by BRAC.

3.2.6 Project Finance

As per the project document, the total project cost is US$10,589,670 which includes US$7,857,496 in cash and US$2,732,174 in kind. Of the cash contributions US$1,768,182 is from GEF, US$200,000 from, UNDP, US$5,016,000 from SLEPA-EU Cap Dev, US$823,314 from ICRAF BioDev and US$50,000 from GERES (Table 1 and 4). Of the kind contributions, US$500,000 from Government of Sierra Leone (GoSL), US$1,682,174 from BRAC, US$200,000 from WestWind Energy, US$100,000 from Toyola Energy, US$150,000 from Bockarie and US$100,000 from Samu Enterprise. If Project spending is used as a basis of measure of the progress of implementation, then the Project has achieved very limited progress compared to what was originally envisaged. Project conducted plantation in 36 acres of land which was not in the planned activities of the project documents but was added after the suggestion from the stakeholders during Inception workshop. Co-financing was well planned and clearly mentioned in the project document. But there was big difference between committed contribution and actual contribution from the GERES, GoSL, WestEnergy i.e. the committed amount was US$50,000, US$500,000 and US$200,000 respectively while actual contribution was US$10,000, US$13,600 and US$5,000 respectively. By the time of the mid-term review, about 12.45% of committed budget was available. Among the partner no contribution was received from SLEPA-EU Cap Dev, ICRAF Bio.Dev BRAC, Toyola Energy, Bockarie and Samu Enterprise. Of the ICRAF BioDev left the country during the Ebola crisis and did not return.

* As per information provided by UNDP, Project management costs were funded by GEF ($106,417.35) and by UNDP (US$165,219).
* Project management cost increased by 129.85% and born from the GEF and UNDP fund.
* Project management costs were proposed US$118,182 and primarily funded by GEF, but the actual management cost by the end of October 2018 was US$271,636.35 which is more by 129.85% than the budgeted amount. One more year left for the project and most of the activities are not accomplished so project may need to make no cost extension which will further increase management cost.
* The project expected co-funding from the GEF, UNDP, SLEPA-EU CC CapDev, ICRAF BioDev, GERES, GoSL, BRAC, WestWind Energy, Toyola Energy, Bockarie and Samu Enterprise. But very little from GoSL, GERES and WestWind Energy was received while no contribution received from SLEPA-EU CC CapDev, ICRAF BioDev, BRAC, Toyola Energy, Bockarie and Samu Enterprise.
* GEF funding was allocated for all components while UNDP funding is mainly for management. In-kind contribution from GoSL was also for management.

Table 1: Total disbursement of funds by output (end of October 2018) (US$) against full project budget as per Project Document.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Component** | **GEF** | | | **UNDP** | | | **Govt. of Sierra Leone** | | | **Other Partners (cash contributors)** | | | **Other Partners (kind contributors)** | | | **Total** | | |
| **Budget** | **Actual** | **%** | **Budget** | **Actual** | **%** | **Budget** | **Actual** | **%** | **Budget** | **Actual** | **%** | **Budget** | **Actual** | **%** | **Budgeted** | **Actual** | **%** |
| Component A | 125,000 | 125,196.45 | 100% |  |  |  |  |  |  |  |  |  |  |  |  | 125,000 | 125,196.45 | 100% |
| Component B | 1,300,000 | 652,218.94 | 50% |  |  |  |  |  |  |  |  |  |  |  |  | 1,300,000 | 652,218.94 | 50% |
| Component C | 225,000 | 227,465.88 | 101% |  |  |  |  |  |  |  |  |  |  |  |  | 225,000 | 227,465.88 | 101% |
| ME & PMU | 118,182 | 106,417.35 | 90% |  |  |  |  |  |  |  |  |  |  |  |  | 118,182 | 106,417.35 | 90% |
| **Total** | **1,768,182** | **1,111,298.62** | **63%** | **200,000** | **165,219** | 82.6% | 500,000 | 13,600 | 2.72% | 5,889,314 | 10,000 | 0.17% | **2,732174** | **18600** | 0.68% | 10,589,670 | 1,318,717.62 | 12.45% |

Analysis of budgeted and actual expenditure shows that the expenses had exceeded the budgeted amount in many components except management budget. Government contribution (in-kind) was much less than committed in the project document and also due to lack of details of expenses for each year and component, detailed analysis could not be done. Similarly, very limited contribution was received from GERES and WestWind Energy while other partners did not make any contribution. The planned management cost was US$118,182 (GEF budget) while actual management cost was US$1,111,298.62 (GEF) and US$165,219 (UNDP). The cost increase was US$135,454.35 which is comparatively very big and this is only up to the end of October 2018 and excluding management cost of the government and other partners. Still one year left for the project and it may need one extra year as most of the activities are not accomplished yet and this will further increase management cost. The reason for exceeding management costs and also program costs from the provisioned management and also expending large portion of budget for only limited output is not known as PMU staffs were unable to explain reasons for this increase.

Tables 1 show the disbursement of GEF and but detailed component wise budget was not available from other co-financers including GoSL. UNDP contribution covers cost of DPC, Salary and Miscellaneous expense.

Personnel from Ministry of Energy and Ministry of Agriculture, Forestry and food security were very supportive of the project and were advocating importance of the project.

Table 2: Total Disbursement of GEF funds (US$) by Component by Year against budgeted as per Project document.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Component** | **2015** | | | **2016** | | | **2017** | | | **2018** | | | **Total** | | |
|  | Budget | Actual | % | Budget | Actual | % | Budget | Actual | % | Budget | Actual | % | Budget | Actual | % |
| Component A | 112000 | 33327.18 | 29.76 | 6000 | 85530.59 | 1425.51 | 3000 | 45956.77 | 1531.89 | 4000 | 39618.09 | 990.4523 | 125000 | 204432.6 | 163.54 |
| Component B | 289120 | 1078.22 | 0.4 | 343080 | 74429.46 | 21.69 | 342200 | 177884 | 51.98 | 325600 | 398827.3 | 122.4899 | 1300000 | 652218.9 | 50.17 |
| Component C | 59500 | 48693.82 | 81.84 | 55000 | 233937.2 | 425.34 | 55000 | 179643.5 | 326.62 | 55000 | 234808.7 | 426.9248 | 224500 | 697083.2 | 310.50 |
| ME & PMU | 23800 | 0 | 0 | 36540 | 38321.03 | 104.87 | 13700 | 61198.16 | 446.70 | 44142 | 6898.16 | 15.6272 | 118182 | 106417.4 | 90.04 |
| **TOTAL** | **484420** | **83099.22** | **17.15** | **434620** | **432218.3** | **99.45** | **413900** | **464682.4** | **112.27** | **428742** | **131298.7** | **30.62417** | **1761682** | **1111299** | **63.08** |

Table 3: Total Disbursement of UNDP funds (US$) by Component by Year against Budgeted as per Project document.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Item Description** | **2015** | **2016** | **2017** | **2018** | **Total** |
| DPC | 0 | 2,500 | 26,256 | 0 | 28,756 |
| Salary | 53,735 | 53,735 | 9,381 | 16,565 | 133,416 |
| Miscellaneous | 350 | 1,997 | 350 | 350 | 3,047 |
| **Total UNDP Contribution** |  |  |  |  | **165,219** |

Table 2 shows the actual funds spent for each component by year from GEF budget. GEF budget was allocated for all four components with highest spending on Component C in 2018. UNDP budget was only allocated for management. The GEF budget was within the allocated amount in the first year while in the second year it exceeded the budgeted amount in most component in the three years (2016-2018). Information on actual expenses breakdown of GoSL contribution was not available so not able to analyse in detail in this report. These expenses do not correspond to the work accomplishment in respective years. Project management costs (Component 4) peaked in 2016 and 2017 and mainly from GEF budget.

Throughout, Project Management Unit has exhibited financial planning and management skills in dealing with the Project in terms of the array of activities undertaken. At all times, the National Project Director has been kept abreast of the Project’s progress though good reporting. Similarly, the link between Department of Energy and the UNDP-CO has been efficient in ensuring that budget replenishments have been timely and there have been no inherent procedural delays.

Table no 4: Co-financing of the project.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Co-financing**  **(type/source)** | **UNDP (US$)** | | **GEF**  **(US$)** | | **Govt. of Sierra Leone**  **(US$)** | | **Other Partners** | | **Total**  **(US$)** | |
| Planned | Actual | Planned | Actual | Planned | Actual | Planned | Actual | Planned | Actual |
| Grants | 200,000 |  | 1,768,182 | 1,111,299 |  |  | 5,889,414 | 10,000 | 7,857,596 | 1,121,299 |
| Loans/Concessions |  |  |  |  |  |  |  |  |  |  |
| * In-kind support |  |  |  |  | 500,000 | 13,600 | 2,232,174 | 5,000 | 2,732,174 | 18,600 |
| * Other |  |  |  |  |  |  |  |  |  |  |
| **Totals** |  |  | **1,768,182** | **1,111,299** | **500,000** | **13,600** | **8,121,588** | **15,000** | **10,589,770** | **1,139,899** |

Source: UNDP (Project Management Unit)

3.2.7 Monitoring and Evaluation: Design at Entry and Implementation

***M&E Design***

The Project design contained a good monitoring and evaluation (M&E) plan which is comprehensive in its depth and scope. The project had logframe to monitor achievement and logframe had clear objectives, components and outputs and appropriate to the issues and also designed considering the timeframe of the project. A detailed situation analysis study was conducted with the help of consultants following the standard scientific methods to identify the most vulnerable site which will help to judge impact of intervention. Role and responsibilities of the partners were made clear from the project design phase. The indicators of the logframe were all SMART (Specific; Measurable; Achievable and attributable; Relevant and realistic; Time-bound, timely, trackable and targeted) and are relevant and precise. At the stage of the Inception Workshop, clarification and updates were made to the M & E plan but no change was made but additional activity to create woodlots was suggested. All activities were listed and explained, and a table was included determining responsibilities, budgets and timeframe for each. Budgets were set realistically for all components except for M&E. A total of USD 71,500 (Seventy One Thousand Five Hundred) being set aside for M&E activities. Baselines were already set in the Project Document and household energy survey was conducted immediately after launching the project. The inclusion of indicators for each activities were appropriate and useful for evaluation and also for management purposes. The weaker part of the logframe was that it did not have mid-term level indicators and gender wise disaggregated indicators.

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| The design of M&E was of a standard much advanced over that normal for the design period, with a fully itemised and costed Plan included in the Project Document covering all the various M&E steps including the allocation of responsibilities but did not have Mid-term level targets/indicators and gender wise disaggregated indicators; hence monitoring and evaluation design has been evaluated as **Moderately Satisfactory**. |

***M&E Implementation***

Monitoring and evaluation of Project activities have been undertaken in varying detail at three levels:

1. Progress monitoring
2. Internal activity monitoring
3. Impact monitoring

Progress monitoring has been weak and has been made through quarterly and annual reports to the UNDP-CO which were not able to capture the cause of delays of planned activities, problems faced in plantation program, lack of technical backup and lack of monitoring mechanism for plantation and also energy sector. The annual work plans have been developed at the end of each year with inputs from the Implementing partner, Project staff and the UNDP-CO. The annual work plans were then submitted for endorsement by the Project Steering Committee, and subsequently sent to the UNDP Regional Centre and the Ministry of Energy for formal approval. The implementing team seems in regular communication with the UNDP-CO regarding progress, the work plan, and its implementation failed to bring issues and address them on time. The indicators from the logframe were effective in measuring progress and performances. The UNDP-CO generated its own quarterly financial reports from Atlas. These expenditure records, together with Atlas disbursement records of any direct payments, served as a basis for expenditure monitoring and budget revisions, the latter taking place bi-annually following the disbursement progress and changes in the operational work plan, and also on an *ad hoc* basis depending upon the rate of delivery.

From the quarterly reports, the UNDP-CO has prepared Quarterly Operational Reports which have been forwarded to UNDP/GEF Regional Coordination Unit, and also uploaded all the information on ATLAS. The major findings and observations of all these reports have been given in an annual report covering the period July to June, the Project Implementation Review (PIR), which is also submitted by the Project Team to the UNDP-CO, UNDP Regional Coordination Unit, and UNDP HQ for review and official comments, followed by final submission to the GEF. All key reports were presented to steering committee members ahead of their half-yearly meetings and through this means, the key national ministries and national government have been kept abreast of the Project’s implementation progress.

The Ministry of Energy and the UNDP-CO have maintained a close working relationship, with Project staff members meeting, or talking with, CO staff on an almost daily basis to discuss implementation issues and problems. But despite regular discussions and reporting, M&E implementation was not effective in addressing delays or implementation shortcomings.

The Project’s risk assessment has been updated quarterly together by the UNDP-CO with the main risks identified along with adequate management responses and person responsible (termed the risk “owner”), who in most cases differs from the person who identified the risk.

Internal activity monitoring undertaken by UNDP CO, Ministry of Energy and the National Project Director and Project Manager appears to have been weak as it is not able to monitor issues and provide feedback to address them. The implementation has been guided by the Annual Work Plan and the quarterly plans submitted to release funds. Generally the Project has been small enough not to require formalised communication or monitoring procedures; members being in almost daily contact. Management was not able to follow each activities timely and act on time to the problems. Many activities of the project were connected to loan, grant and rebate scheme and one of the partners named BRAC was responsible for management of such activities but it stepped back from its commitment. If project management was in close contact with the partners, then such issues would have been known in the beginning days of the project implementation but it only came to know late and initiated for alternative arrangement with feedback from the UNDP regional office.

Impact monitoring has been provisioned in the activities but due to delay in implementing activities at the community level, this could not take place. Following the impact monitoring, replication was planned and that also could not be done.

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| M&E implementation has been weak, with weak progress monitoring and internal activity monitoring. Not sufficiently able to respond the risks and issues, and the MTR consultants considers it to be “weak practice”, hence the implementation of monitoring and evaluation has been evaluated as **Un**s**atisfactory**. |

3.2.8 UNDP and Implementing Partners Implementation / Execution, Coordination and Operational Issues

**Project Oversight**

Project was implemented following Direct Implementation Modality (DIM) to ensure broad stakeholder participation and to create both a high flexibility and an enabling environment for innovation. Project was executed under the execution of UNDP CO in close coordination with the Ministry of Energy. There was good communication and coordination between Implementing and executing agencies. Regular meetings were conducted to discuss on progress and constraints of the project. UNDP had ensured high-quality technical and financial implementation of the project through its local office in Sierra Leone. UNDP CO was responsible for implementing activities, monitoring and ensuring proper use of GEF funds to assigned activities, timely reporting of implementation progress as well as undertaking of mandatory and non-mandatory evaluations. All services for the procurement of goods and services, and the recruitment of personnel were conducted in accordance with UNDP procedures, rules and regulations. Some weakness was observed in procurement of the charcoal and stove testing lab equipment i.e. installation provision was not included in the procurement and due to this project has to bear additional cost for installing equipment. Project Management Unit was formed to coordinate and manage project activities but could not assure achieving targeted results on time. PMU had one National Project Director and Project Manager and it involved staffs of the Ministry of Energy, Ministry of Agriculture, Forestry and Food Security and also private energy institutions in project activities implementation. Director General from the Ministry of Energy (Chair of Project Board), Program Specialist (Environment cluster) and Director of Forestry, Ministry of Agriculture, Forestry and Food Security shared their time to the project. The technical management of the Project was weak and slow due to various challenges.

Though the project was effectively initiated in February 2016 only few activities were carried out in the first year. Project activities were effectively launched in February 2016 with the appointment of the Project Manager.

The Project has been weakly-managed throughout providing products of the average technical quality, delayed from the schedule and exceeded budget, while struggling with a range of internal and external challenges through poor adaptive management, hence the implementation approach has been evaluated as **Unsatisfactory**.

**UNDP Supervision and Backstopping**

UNDP supervision was accomplished as per its procedures. Mid-term Review received no complaints from interviewees about excessive UNDP bureaucracy or delays in procurement, and UNDP’s heavy requirements for reporting.

Key aspects of supervision were made through UNDP’s involvement in communication with the Ministry of Energy and other stakeholders. Members of the Environment Cluster were involved in regular issues such as the review and approval of work plans and budgets, review of progress and performance against such work plans, and completion of the tracking tools. But it seems that it was not able to see the differences between expenses and achievements because project already made more than 60% from GEF budget and more than 80% of the UNDP committed money against very little achievements. Though the project had unbudgeted activity like tree plantation, the additional cost from this could not justify the total amount expensed. It appears that the CO was trying to help and be supportive in the implementation period, responding adequately to provide guidance, honest and constructive criticism, and help to overcome particular problems as necessary. UNDP support was focused towards achieving targeted results and support was appropriate, but not adequate and timely. The annual planning was done on time with active participation of stakeholders. Similarly, risk management options were identified in close consultation of partners and experts but the project was struggling to manage assumed and unexpected risks. The speed of the project was very slow and due to uncertainty created by rebate and loaning scheme after the withdrawal of BRAC, the activity implementation was more affected. In the beginning, project was delayed due to Ebola virus outbreak and that had pushed the implementation date to 2016.

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| UNDP have provided supervision and backstopping to the Project, and its performance has benefitted to some extent but project was facing various challenges and was very much delayed, hence UNDP’s supervision and backstopping role is evaluated as **Moderately** **Satisfactory**. |

**Reporting and Communication**

The implementing team has been in regular communication with the UNDP-CO regarding progress, the work plan, and its implementation. Regular communication was also maintained with all stakeholders including those who stepped back. From such communication, project benefited from suggestions and support. UNDP-CO received quarterly progress reports providing updates on the status of planned activities, the status of the overall project schedule, the products completed, and an outline of the activities planned for the following quarter. The major findings and observations of all these reports have been given in annual report covering the project period July to June, the Project Implementation Review (PIR), which is also submitted by the Project Team to the UNDP-CO, UNDP Regional Coordination Unit, and UNDP HQ for review and official comments. All key reports were presented to steering committee members ahead of their half-yearly meetings and through this means, the key national ministries and other partners has been kept abreast of the project’s implementation progress.

The Project Management Unit and UNDP-CO have maintained a close working relationship with project staff members and partners and discussed issues and problems. Project regularly updated information, progress reports, achievement, technical reports etc. to wide audience through websites.

The progress monitoring updates were regularly reported by Project Manager to National Project Director.

It performed expert consultations on key programs and also with the local government and other related stakeholders. Project Management ensured wider representation and transparency by involving key stakeholders, including, among others, experts from different line ministries, academic institutions, Communities and private sector.

3.3 Project Results

3.3.1 Overall Results

***Attainment of Objectives:***

Project helped to establish and strengthened National and local institutions for sustainable biomass resource production and utilization, and promotion of sustainable biomass energy technologies in Sierra Leone using market based promotion of sustainable biomass energy technologies. Project improved technical knowledge to support local economic, environmental and social development that leads to GHG mitigation. The following arrangements were made for EEPUC accomplishment and address climate change risk management:

* Preparing training on efficient charcoal production and utilization for village level producer and utiliser.
* Tender called to establish a testing lab for cook stoves and charcoal.
* PEDCORM firm consulted to harmonise and update the 2009 National Energy Policy. Draft awaiting government approval and implementation.
* A consultant hired to design the rebate and grant scheme for the smooth and effective implementation of biomass energy applications.
* Identified renewable energy centre of the government for establishing CCDC. But the building needs a lot of renovation to establish lab.
* Conducted training and awareness campaign on the use, maintenance and benefits of energy-efficient kilns and similar awareness campaign will be conducted in village level also.
* Design drawings, construction procedures and manuals for the construction and operation of energy-efficient stoves developed. In the coming days, agreement will be made with the local fabricators on the production of the furnaces/stoves and training on their design and operation features, produce, install and disseminate furnaces/stoves to end users and also conduct training and awareness campaign on the use, maintenance and benefits of energy-efficient furnaces/stoves.
* Organisation of four weeks training for staffs from the CCDC is planned but not initiated yet.
* Will develop standard for fuel efficiency and emission testing of all types of existing cook stoves.
* Will identify roles of community-based organisations and come to agreement on modalities and incentives for their participation.
* Will identify local fabricators, raw material suppliers, micro-entrepreneurs, local producers/masons and their area of involvement. Investigate and formulate appropriate procurement procedures, cost-sharing schemes (e.g. Public-private partnership) and marketing mechanism.
* Will design and implement loan risk guarantee funding scheme for entrepreneurs in the stoves/furnaces supply chains business
* Once the financing scheme is implemented, it will be reviewed and lessons learnt in the financing will be used in scaling up of sustainable charcoal and improved cook stoves business.
* Will arrange regular monitoring and evaluation of installed kilns. Use monitoring information for improvement of design. Promote and replicate kiln design in remaining areas.
* Project will develop a strong monitoring, verification and enforcement (MVE) programmes. With the information form the MVE, it will support Designated National Authority (DNA) to develop and leverage carbon finance.
* Project will also develop gender sensitive capacity development and training modules for the production and utilisation of certified charcoal and ICS.
* Will also develop and implement promotional schemes on the social, economic and environmental co-benefits of improved charcoal and improved cook stoves to create market.
* Project will sensitize key value chain actors through public awareness campaign and capacity development.

A Summary of the Project’s achievements is given directly below, followed by an outline of the attainment of objectives. A summary evaluation of Project Outputs is given in Table 5 followed by a more detailed description. A detailed evaluation of the level of achievements made against the indicators of success contained in the log frame is given in [Annex IV](#_Annex_IV_:).

***Summary of Achievements***

Project results were measured against achievement indicators guided by evaluation questions (tracking tools, Annex IX). The EEPUC Project has been well designed, but had problems in management and implementation. The project team has managed to deliver only a few interventions. Project is able to establish some woodlots with the help of communities. Identified DoE for establishing Research, Knowledge, Learning and Coordination Centre (RKLCC) but the building identified to establish charcoal and stove testing lab was technically not suitable and requires considerable renovation.

Project made several advertisements for hiring expert to establish lab for testing charcoal and cook stoves but not able to find one. In fact, provision of instalment of lab equipment should have been included in the procurement of the equipment. This is also adding cost to the project and there is no expert in Sierra Leone to install the lab equipment. It conducted training on efficient charcoal production and utilization for entrepreneurs, craftsman and technical students but training at the village level producer and users were not conducted. Similarly, consultation with stakeholders to define and formulate the cooking energy action plan is initiated. Firm named PEDCORM was consulted to harmonise and update the 2009 National Energy Policy and the draft is submitted to Government for approval. Similarly, a consultant is recently hired to design the rebate and grant scheme including information on procedures, regulations, standards and incentives for the smooth and effective implementation of biomass energy applications. Project also conducted training and awareness campaign on the use, maintenance and benefits of energy-efficient kilns. Project prepared design drawings, construction procedure guide and manual for the construction and operation of energy-efficient stoves and also conducted training on the installation, operation and maintenance of energy-efficient furnaces/stoves/kilns. Project also conducted plantation in 35 acres to establish woodlots for supplying wood for charcoal production and firewood for cook stoves.

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| Overall, the Project has achieved very few of its objectives, and yielded limited substantial global environmental benefits, with many major shortcomings. The project can be presented as “poor practice”, and hence its attainment of objectives and results is evaluated as **Unsatisfactory**. |

The main problem areas identified by the MTR consultants are:

* There is no expert to install charcoal and stove testing lab equipment and bringing expert from outside costs a lot and there is no budget for such expenses. Installation should have been included in procurement of the equipment.
* Most of the activities are not completed yet and many even not initiated and project has only 1 year left for accomplishing these. It is difficult to complete these within the remaining time and within this project also has to replicate tested activities to new areas. With the present speed of work, even if a year is extended then also difficult to achieve the target.
* Project has burned more than 60% of the GEF budget and more than 80% of UNDP budget while only less than 20% of activities have been accomplished in almost three years of project.

***Objective Indicators***

A single “Project Goal” and single “Project Objective” was articulated in the log frame with the development objective. The overall project goal is to reduce GHG emissions in the rural household and industrial sectors of Sierra Leone through integrated and sustainable biomass resource production and utilisation, and promotion of sustainable biomass energy technologies in Sierra Leone using market based approaches. The objective is removal of barriers to sustainable production and utilisation of biomass resources in Sierra Leone and application of biomass energy technologies to support local economic, environmental and social development that lead to GHG mitigation. The project aims to achieve its stated objective through 3 component and 3 outcomes. For the 3 outcomes, series of 12 outputs were defined. Full details and an evaluation of achievements against targets are provided in [Annex IV](#_Annex_IV_:). By the Mid-term review period, Project was able to accomplish only few of its activities so much effort is needed to achieve targeted activities within the project period. UNDP need to enhance coordination with the implementing government agencies and other non-government institutions and also need to monitor activities closely with improved feedback mechanism for strengthening adaptive management.

3.3.2 Effectiveness and Efficiency

**Cost-effectiveness**

The UNDP Guidance for Conducting Review/Evaluation of UNDP-supported Projects defines the criteria of “efficiency” as:

“*The extent to which results have been delivered with the least costly resources possible; also called cost effectiveness or efficacy*.”

Overall, the Project appears to be not cost-effective since it has accomplished less than 20% of the activities while more than 63% of the GEF budget is utilised. At all levels, the Project have appeared not taking cost-effectiveness very seriously to get the best results for the money spent. The few activities of all 3 components that are accomplished has exceeded the budgeted amount. The management cost exceeded the budgeted amount in the year 2016 and 2017. Overall, project is not cost effective.

Project generated support from the different ministries and local government but not able to receive committed co-financing from partners which also increased the cost of the project.

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| Project was not able to achieve most of the expected outputs, and cost-effectiveness has not been a priority of the implementing agency throughout, amongst their priorities. This, combined with lack of co-financing leveraged, means the overall cost-effectiveness of the Project has been very poor, hence it is evaluated as **Unsatisfactory**. |

Project is able to achieve very few of its targeted level of expected outcomes or objectives and remaining ones are in the process. Stakeholders were also found not much satisfied from the accomplishment of the project. They view that the project was delayed due to Ebola outbreak in the beginning and later due to various political reasons and needs a lot of effort to achieve targeted activities for significant impacts and to able to meet the objective. Stepping back by BRAC created uncertainty of rebate and loaning practices which setback many activities as they were linked to such incentives approach.

Project has made changes in energy policies and practices and increased level of awareness among the stakeholders which will have long term positive impact in energy sector of the country and will also impact in Climate Change of global concern.

Project followed standard scientific methods and used qualified manpower. Project maintained good relation with all stakeholders.

**3.3.3. Achievement of Project Output & Outcome**

This section provides an overview of the main achievements of the Project. Considering the results achieved under each of the outcomes, and the progress toward the overall objective, the project effectiveness is rated Unsatisfactory. The EEPUC project accomplished very few activities and have to work hard to accomplish targeted work plan. The project objective was stated as *“Energy Efficient Production and Utilization of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone”*

Based on the respective indicators and overall level of progress toward the three outcomes, the outcomes rating are as follows:

**Table 5: Evaluation of the project situation as per the logframe up to November 2018**

| **Component** | **Evaluation based on MT level Review\*** | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **HS** | **S** | **MS** | **MU** | **U** | **HU** |
| **Outcome 1:** Strengthened institutional capacity on biomass resource utilization at the national, regional and community level. Operational effective policy, legal, and regulatory frameworks and review mechanisms on biomass energy technology applications. |  |  |  |  |  |  |
| **Output 1.1** Adequately trained and capable decision-makers and relevant stakeholders (from EPA-SL, ministries, private sector, rural communities, etc.) leading efforts, communicating and managing more efficiently produced charcoal and improved cook stove utilization in an integrated manner |  |  |  |  |  |  |
| **Output 1.2**. Formulated, approved and enforced policies, laws and regulations on more efficient charcoal and improved cook stoves production |  |  |  |  |  |  |
| **Output 1.3** Developed standards and certification protocols for efficient charcoal and improved cookstove |  |  |  |  |  |  |
| **Outcome 2:** Increased number of investments on improved, more efficient charcoal and improved cookstove production in Sierra Leone |  |  |  |  |  |  |
| **Output 2.1:** Established partnerships between the public and private stakeholders involved in the value chain of charcoal production and utilization |  |  |  |  |  |  |
| **Output 2.2:** Developed incentives through carbon finance, microfinance, rebate and loan guarantee schemes to scale up sustainable charcoal and improved cookstove businesses |  |  |  |  |  |  |
| **Output 2.3:** Implemented and operational i) 300 locally produced industrial stoves for income generating local enterprises such as fish smoking, bakery, palm oil processing and tobacco curing and ii) 700 institutional stoves for school, prisons and hospitals. |  |  |  |  |  |  |
| **Output 2.4:** Implemented and operational 1,000 locally produced efficient kilns for the sustainable production of charcoal. |  |  |  |  |  |  |
| **Output 2.5**: Locally produced 14,000 energy-efficient stoves in rural households for cooking needs implemented and promoted for replication |  |  |  |  |  |  |
| **Output 2.6:** Established and operational framework for the phase-out of traditional charcoal kilns and cook stoves |  |  |  |  |  |  |
| Outcome 3: The production and utilization of certified charcoal and certified improved cook stoves are common practices in Sierra Leone. |  |  |  |  |  |  |
| Output 3.1: Developed gender sensitive capacity development and modules for the production and utilization of certified charcoal and ICS |  |  |  |  |  |  |
| Output 3.2 Developed and implemented promotional schemes on the social, economic and environmental co-benefits of improved charcoal and improved cook stoves to create demand, generate good buy-in and willingness to pay |  |  |  |  |  |  |
| Output 3.3 Sensitized key value chain actors through public awareness campaign and capacity development |  |  |  |  |  |  |
| **Overall Project Rating** |  |  |  |  |  |  |

\* Note: HS = Highly satisfactory; S = Satisfactory; MS = Marginally satisfactory; MU= Marginally unsatisfactory;

U = Unsatisfactory; HU = Highly unsatisfactory.

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| The Project reviewed National Energy policy (yet to be approved and endorsed), established some woodlots, conducted training for entrepreneurs and craftsmen who will expand training and construction of kiln and cook stoves in rural communities to enhance efficiency of cook stoves and charcoal kilns to reduce carbon emissions and conducted awareness through airing programs on the television and print media. Project had to expand training and awareness activates and charcoal kiln establishment in rural villages and monitor impact of such interventions. Project also had to establish research centre with testing lab and provide monitoring information to DNA of the government. After conducting cook stove and kiln making training and establishment of kilns in some villages, it had to replicate such activities in more areas but these are not done yet. Many of the targeted project outputs are ranked individually as **Highly** **Unsatisfactory with five Unsatisfactory and one moderately Unsatisfactory**; hence overall the achievement of outputs and activities is evaluated as **Unsatisfactory**. Most of the outputs are not achieved, project outcomes are also not achieved as per planned, hence all outcomes of the project is also rated as **Unsatisfactory** and overall project is also rated as **Unsatisfactory**. |

**Outputs and Progress status**

**Component 1.** Policy and regulatory frameworks on the use of more efficiently produced charcoal and improved cook stoves

**Outcome 1:** Strengthened institutional capacity on biomass resource utilization at the national, regional and community level. Operational effective policy, legal, and regulatory frameworks and review mechanisms on biomass energy technology applications.

**Output 1.1** Adequately trained and capable decision-makers and relevant stakeholders (from EPA-SL, ministries, private sector, rural communities, etc.) leading efforts, communicating and managing more efficiently produced charcoal and improved cookstove utilization in an integrated manner

* Four different activities were set to achieve output 1.1 and of these only training on efficient charcoal production and utilization was conducted for entrepreneurs, craftsman and students. But the training by these trained people to the rural communities was not accomplished. Likewise, establishment and operation of Research, Knowledge, Learning and Coordination Center (RKLCC) at DoE was not done. Lab equipment were procured but procurement did not include condition of installation and there is no expert in Sierra Leone to install these equipment. Now it requires separate budget for installation which costs a lot and there is no provision of budget for this purpose. It is learned that UNDP is exploring alternatives to address this problem and in this process assurance received from GIZ to find the expert for installation but still how this additional cost will be borne is not known. Besides, it is also learned that the proposed building of DoE is not suitable for installation of the equipment as it needs serious repairmen which cost a lot and the fund constraint for this is also obstacle for this activity.

**Output 1.2.** Formulated, approved and enforced policies, laws and regulations on more efficient charcoal and improved cook stoves production

* Project supported review and updating of National Energy Policy 2009. This included stakeholder consultations to define and formulate policy. Draft policy is submitted to Ministry of Energy on which they wanted to further discuss with all line agencies and submit to cabinet for approval. The PIR of 2016 and 2017 mentioned that the updated National Energy Policy is approved but that is wrong information. This also indicates weak monitoring and reporting. Policy is uploaded in the webpage of Ministry of Energy, 400 copies of policy distributed to stakeholders, jingles for awareness developed, radio discussion and regional workshop conducted on the subject. After approval of the policy, need to conduct activities to make people aware on this and endorse.
* Project hired financial engineering expert to design rebate and grant scheme and expert has submitted inception report. It is expected that the financial incentives report will be submitted within few months.

**Output 1.3**Developed standards and certification protocols for efficient charcoal and improved cook stove

* Project identified Renewable Energy Centre within the Government Technical Institute for establishing CCDC but building is not suitable for lab establishment and repairing of the building costs a large amount of money which is not provisioned in the project budget so charcoal and cookstove testing lab was not established. The training program for staff from the CCDC and other supporting institutions was also not conducted. Project also expected facilitation by CCDC in improvement of iterative design and new stove designs but due to failure in establishment of CCDC this could not take place.
* Project also planned to develop/define a standard of efficiency of kiln and stoves and emission level but this was also not done.

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| The outputs have achieved very few of its major targets, and not able to yield substantial global environmental benefits. These outputs can be presented as “poor practice” and is rated as **Moderately Unsatisfactory**. Project has accomplished very few activities of outcome 1 that were required to strengthen institutional capacity on biomass resource utilization at the national, regional and community level, hence the outcome achievement is rated as **Moderately** **Unsatisfactory**. |

**Component 2.** Development of public-private initiatives for the improved and more efficient production of charcoal and the scaling up of improved cook stove production

**Outcome 2:** Increased number of investments on improved, more efficient charcoal and improved cook stove production in Sierra Leone

**Output 2.1** Established partnerships between the public and private stakeholders involved in the value chain of charcoal production and utilization

* Market survey generated information on entrepreneurs and came to know that most of the cook stove entrepreneurs were individuals who were unregulated and also not registered.
* Activity to identify roles of community based organizations and establishing agreement on modalities and incentives for their participation was not done.

**Output 2.2** Developed incentives through carbon finance, microfinance, rebate and loan guarantee schemes to scale up sustainable charcoal and improved cook stove businesses

* Under this output, project expected to review lessons learnt from the financing and scaling up of sustainable charcoal and improved stoves business and based on this learning establish procedures, implementing arrangement, oversight and modalities for the implementation of startup grant and end user rebate scheme. Project also had to design and implement the loan risk guarantee funding scheme for entrepreneurs in the stoves/furnaces supply chain business. But all these activities were not done yet as the financial incentives scheme development expert was recently hired and is expected to submit scheme document within few months.

**Output 2.3:** Implemented and operational i) 300 locally produced industrial stoves for income generating local enterprises such as fish smoking, bakery, palm oil processing and tobacco curing and ii) 700 institutional stoves for school, prisons and hospitals.

* Market survey identified local fabricators, raw material suppliers and micro-entrepreneurs and their specific area of involvement. But project had not investigated and formulated appropriate procurement procedures, cost sharing schemes and market delivery mechanism yet. Also the project had not initiated production and delivery of energy efficient stoves/furnaces based on public-private partnership approach.

**Output 2.4:** Implemented and operational 1,000 locally produced efficient kilns for the sustainable production of charcoal.

* Market survey identified local producers/masons, raw material suppliers and micro-entrepreneurs and their specific areas of involvement but formulation of appropriate procurement procedure, cost sharing schemes, incentives and market delivery mechanisms was not done yet. Similarly, implementation of public-private partnerships for installation of efficient kilns and conducting training and awareness campaign on the use, maintenance and benefits of energy-efficient kilns to the rural communities was not done. Monitoring, feedback based on monitoring and replication of these activities were also not done.

**Output 2.5:** Locally produced 14,000 energy-efficient stoves in rural households for cooking needs implemented and promoted for replication

* The design drawings, construction procedures and manuals for the construction and operation of energy-efficient stoves was developed.
* Activities like making agreement with local fabricators on the production of the furnaces/stoves and training on their design and operation features was not done. Similarly, production, installation and dissemination of furnaces/stoves to end-users and conducting training and awareness campaign on the use, maintenance and benefits of energy-efficient furnaces/stoves to rural communities (end users) not conducted.
* Monitoring and evaluation of installed furnaces/stoves, improvement in design based on M&E and promotion and replication to remaining households and community based institutions were not done.

**Output 2.6:** Established and operational framework for the phase-out of traditional charcoal kilns and cook stoves

* Program development for Monitoring, Verification and Enforcement (MVE) was not done so intention of project to support Designated National Authority (DNA) with Monitoring information to develop and leverage carbon finance was not happening.

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| The outputs have not achieved the targets, and not able to yield substantial global environmental benefits. These outputs can be presented as “very poor practice” and is rated as **Highly Unsatisfactory**. Project has not accomplished any activities of the outcome 2 that were required to increase number of investments on improved, more efficient charcoal kiln and improved cook stove production, hence the outcome achievement is rated as **Highly Unsatisfactory**. |

**Component 3.** Improved, more efficient production and efficient utilization of certified charcoal and cook stove

**Outcome 3:** The production and utilization of certified charcoal and certified improved cook stoves are common practices in Sierra Leone.

**Output 3.1:** Developed gender sensitive capacity development and modules for the production and utilization of certified charcoal and ICS

* Workshop for communication and capacity building strategy and action planning was not done.
* Integrated capacity building plan to include policy, institutions, kiln and cook stove technologies and applications, sustainable fuel wood plantation and utilization and market provisions of energy services was not done. No activities under this output were conducted.

**Output 3.2** Developed and implemented promotional schemes on the social, economic and environmental co-benefits of improved charcoal and improved cook stoves to create demand, generate good buy-in and willingness to pay

* Development and implementation of promotional schemes on the social, economic and environmental co-benefits of improved charcoal and improved cook stoves to create demand, generate good buy-in and willingness to pay was not done.
* Documentation, regular production and dissemination of information related to biomass energy resources and kiln and cook stove application and utilization was not done.

**Output 3.3** Sensitized key value chain actors through public awareness campaign and capacity development

* Project conducted training on the installation, operation and maintenance of energy-efficient furnaces/stoves/kilns for entrepreneurs, craftsman and technical students but still training for targeted government staffs are left.

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| The outputs have not achieved its targets except training for entrepreneurs, craftsmen and technical students. These outputs can be presented as “poor practice” and is rated as **Unsatisfactory**. Project has not accomplished most of the targeted activities of outcome 3 that were required to make production and utilisation of certified charcoal and cook stoves common practice in Sierra Leone, hence the outcome achievement is rated as **Unsatisfactory**. |

Besides above mentioned activities, during Inception workshop, stakeholders suggested to pilot woodlots for rotational harvest to supply wood for charcoal production and also firewood for cook stoves. Project established woodlots in 24 acres in Kasewa village and 12 acres in Makolerr village. The earlier plantation of Makolerr village was destroyed by fire and in second phase they planted in less area.

3.3.4 Country Ownership

Ministry of Energy took the responsibility of project execution and its involvement in the project was on behalf of Government of Sierra Leone, therefore Government has ownership in this project. The project outputs identification and project design was carried out by involving relevant government agencies, private sector, local government representative, research institutions and development partners working in Sierra Leone. The results of the project complemented government’s priorities. Some of the government strategies, programs and plans that were complemented by this project are described below:

Natural resources plays important role in the lives of people in Sierra Leone but challenge is to pursue economic development without creating additional burdens on natural resources thereby preserving ecosystems that are critical to maintaining the quality of life and providing environmental services. The Government of Sierra Leone seeks to promote a paradigm shift towards low-emission and climate –resilient development pathways. It also seeks to achieve economic efficiency in securing emission reductions at cost, and to support equity in the distribution of resources. This project complements government’s effort to achieve above mentioned issues. The project is also aligned with the Sierra Leone Government’s National Aspirations – The Agenda for Prosperity (AfP) -2013-2017.

In 2006, Sierra Leone ratified the Kyoto Protocol. Since then, several steps have been taken to develop a national approach to tackle climate change. In 2007 a National Adaptation Programme of Action was developed, and in 2012 a National Secretariat for Climate Change (NSCC) was established. The promotion of REDD+ and CDM is also included the 2009-2012 Poverty Reduction Strategy Paper- the “Agenda for Change” – which identified carbon markets as sustainable financing mechanisms to support the conservation and development of the Forestry sector.

The GEF funded project supports Pillar 1 of the UNDAF that seeks to promote economic diversification through inclusive growth and food insecure households have improved access to decent employment and sustainable income generating opportunities. By 2018 under the Pillar 2, targeted Government institutions, the private sector, and local communities manage natural resources in a more equitable and sustainable way. Under Pillar 5 private sector will be enabled to lead on accelerated generation of sustainable inclusive and decent employment whilst Pillar 8 seeks to mainstream gender equality and women’s empowerment where women have greater access to political and socioeconomic opportunities and increased participation in decision making and development process.

The project is relevant to the UNDP Country Program Action Plan II (2014-2018) mandated through its strong emphasis on environment governance, capacity development and technical training for the private sector in order to provide professionals with the necessary know-how and technical skills to advise builders and other decision makers about energy efficiency standards and to integrate them into national policies and legislations. The EEPUC Project is fully harmonized with the priorities of the current UNDP Sierra Leone Country Programme (CPD 2009-2013).

3.3.5 Sustainability

The evaluation of the sustainability of this Project is most likely to be unsustainable beyond the project life. As will be seen below, the sustainability at the project level is also uncertain.

Financial: The outlook for the long-term financial sustainability of the project appears weak and it is connected to the interest of the local government and the national government. No financial commitment was available from government, INGO, bilateral agencies and private sector. Ministry of Energy and Ministry of Agriculture, Forestry and Food Security have to allocate budget for the additional staff needed to provide technical support to the rural communities and also producers of charcoal and cook stoves but government agencies indicated that they have financial constraints so difficult to bear these additional costs. Even the financial institution that committed at the project development phase to invest in financial incentives program stepped back. Hence in the present scenario, financial sustainability is Unlikely.

Socio-economic: The social sustainability of the project is also not promising as community members were seeking financial support for management of the woodlots and also other activities and this means they may not be interested to continue if there is no food for work program. The only hope to bring their effort for the management of the activities at present and also beyond the project life is by generating awareness among the community members on environmental issues, climate change, and benefits of woodlots, cook stoves and efficient kilns to them. In present scenario, the socio-economic sustainability is judged to be Unlikely.

Institutional and Governance: The institutional sustainability of the Project could be good if the community institutions are made self-reliant. Similarly, if the capacity enhancement of the government institutions are completed then this could also be sustainable. But at the time of Mid-term review, community awareness activities were not conducted, establishment of Research, Knowledge, Learning and Coordination Center (RKLCC) was not done, training for government staffs in the centre, establishment of lab, approval of energy policy, training for communities on efficient kilns/cook stoves etc. were not done so sustainability looks Unlikely.

Environmental: Environment sustainability is one of the important elements of the project strategy. The project achievement will directly reduce GHG emissions and poverty and also preserve ecological resources of Sierra Leone. The institution establishment, capacity development, policy formulation and use of efficient kilns and cookstoves are to decrease quantity of biomass use and emissions. At present socio-economic situation and mind-set, environment sustainability is Unlikely but if communities are encouraged to use improved stoves, efficient kilns and also to manage woodlots, then the environmental sustainability could be Likely.

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| The overall sustainability of the regional component is ranked as **Unlikely**. |

3.3.6 Ratings

104. As per UNDP guidelines, the MTR ratings are consolidated in Table 6 below.

**Table 6: MTR Rating for Project Performance**

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| --- | --- | --- |
| **Criterion** | **Comments** | **Rating** |
| **Monitoring and Evaluation** |  |  |
| Overall quality of M&E | The design of M&E was up to standard with a fully itemised and cost plan included in the Project Document covering all the various M&E steps including the allocation of responsibilities but in implementation it was weak. | Moderately Unsatisfactory |
| M&E design at project start up | The design of M&E was up to standard with a fully itemised and cost plan included in the Project Document covering all the various M&E steps including the allocation of responsibilities. | Moderately Satisfactory |
| M&E Plan Implementation | M&E implementation was weak, with weak progress monitoring and internal activity monitoring. The achievement/impact monitoring was the weak point of project’s M&E. Delay in implementation of activities and limitation of staffs also affected monitoring and evaluation. | Unsatisfactory |
| **IA & EA Execution:** |  |  |
| Overall Quality of Project Implementation/Execution | The Project was originally well-organised but implementation was weak and stepping back by some co-financer also created problem. Implementing agency was not able to move all stakeholder to accomplish work on time and due to that very limited work was accomplished exceeding the budget. | Moderately Unsatisfactory |
| Implementing Agency Execution | Ministry of Energy had limited staff and also technical manpower was limited. Technical staff was also limited for the monitoring, verification and enforcement. Follow up of other co-financers was weak and that had affected the implementation of various activities. Activities implementation exceeded budget. | Unsatisfactory |
| Executing Agency Execution | UNDP has provided an adequate level of supervision and backstopping to the Project, but due to limitation of staff frequent monitoring of activities was affected. | Moderately Unsatisfactory |
| **Outcomes** |  |  |
| Overall Quality of Project Outcomes | Overall quality is of the poor order. | Unsatisfactory |
| Relevance | The Project intervenes to reduce GHG emissions in the rural households and industrial sectors through integrated and sustainable biomass resource production and utilisation and promotion of sustainable and efficient technologies. | Relevant |
| Effectiveness | A review of outcomes to impacts (ROtI) shows the overall likelihood of impacts being achieved is Unlikely. | Highly Unsatisfactory |
| Cost-effectiveness (Efficiency) | Project management costs have exceeded the provisioned budget. Similarly, compared to activities accomplished, expenses were very high i.e. more than 60% of GEF budget was spent for less than 20% achievement. | Highly Unsatisfactory |
| **Sustainability:** |  |  |
| Overall likelihood of Sustainability | There are many risks which may take place if stakeholders are not made aware, strengthened and committed. | Unlikely |
| Financial resources | Poor – Government and partner organisations have not made any long-term commitment to the area and there is lack of evidence of considerable technical, policy and some financial commitments from the Government. | Unlikely |
| Socio-economic | Weak – institutions involved in the project including private sector have not shown sufficient interest and had limited awareness and changed behaviours linked to Climate Change risk management. | Unlikely |
| Institutional framework and governance | Project was able to assign responsible institution that are technically and legally strengthened Institutionally. Political transition and disease outbreak also posed risks as one of the partners left country and did not show interest to return and finance company (BRAC) stepped back due to which most of the activities were affected. | Unlikely |
| Environmental | The project itself is designed to address Climate Change risk but implementation of activities to reduce GHG emissions addressing climate change issues has not reached the targeted rural communities and industries i.e. activities for targeted locations were not initiated yet and only one year left which is not sufficient to accomplish targeted activities. | Unlikely |
| **Impact:** |  |  |
| Environmental Status Improvement | The energy policy is in draft form and not endorsed to see the result. Cook stoves and the kiln construction in rural households and industries has not started yet so no impact could be seen. Monitoring, Verification and enforcement is not conducted to provide information to DNA for carbon finance schemes and lab is not established to test charcoal, kiln and stoves for certification. | Insignificant |
| Environmental Stress Reduction | Establishment of woodlots could contribute in carbon sequestration and also later when they start supplying wood for charcoal production and fuelwood use then may reduce pressure on the forest. Installation of efficient kilns and cook stoves may reduce carbon emissions and contribute to reduce environmental stress but at the moment these activities have not been initiated in target areas so no environmental stress was reduced. | Insignificant |
| Progress towards stress/status change | Very poor – Revised energy policy was not approved and endorsed, improved cook stoves and efficient kilns were not established in the rural communities and industries to reduce GHG emissions. Establishment of research centre and lab was not accomplished. Hence progress towards stress/status change was very poor. | Insignificant |
| **Overall Project Results** |  | **Unsatisfactory** |

1. Conclusion and Recommendation
   1. Conclusion

The EEPUC Project is well designed, but still much room for improvement. Women are very much connected to fuelwood and charcoal in Sierra Leone and the project adopted gender strategy to address the gender gaps and its importance to mainstream in national development policy (energy policy). The project was planned for 2015-2019 but due to the Ebola outbreak, it was delayed and only initiated in 2016. Project intends to reduce GHG emissions in the rural households and industrial sectors of Sierra Leone through integrated and sustainable biomass resource production and utilization, and introduction of sustainable and efficient energy technologies. Within the three years period, project was able to review National Energy Policy 2009 and developed updated draft policy document, implemented tree planting to create woodlots in 36 acres of land in Kasewa and Makolerr villages of which some area in Makolerr village was destroyed by fire, conducted training on installation, operation and maintenance of energy efficient furnaces/stoves/kilns for entrepreneurs, craftsman and technical students.

To address the Climate Change problems and fulfil commitment of reducing GHG emissions and improve livelihoods of rural communities, project attempted six main approaches: improvement in policies, establishment of institution (community institutions), capacity enhancement, framework for quality assurance, technology improvement for emission reduction and strengthen monitoring and evaluation. In three years period, the project was able to deliver only few interventions. The Project had problem in management and implementation and due to that it is able to accomplish only few of the targeted activities and facing several challenges to complete the remaining activities for meeting the targeted results. Project Inception workshop was delayed which delayed work-plan preparation and latter approval of work plan and procurement was delayed. The project board meeting could not take place timely which affected approval of work-plan and programs. Moreover, project could not receive timely and sufficient technical support from the Ministry of Energy and Ministry of Forest. Despite repeated attempts from project management to encourage Ministry of Energy for its active engagement and support it failed. These issues were mentioned in the PIR and also planned further discussion to address this challenge by either rotating chairmanship or other options but no progress took place. Project team also misunderstood the project activities e.g. they believed that the training for entrepreneurs, craftsman and technical students is all to do for charcoal production and improved cook stove program but did not realise that there is provision of such training for different target audience e.g. ministry staffs, rural users and producers of charcoal and cook stoves from the rural areas. Due to this confusion such trainings were not carried out. Similarly, project team were found waiting for the financial incentives scheme to initiate several other activities which they could do without it also e.g. they could develop standard by revising references for kiln and cook stoves for certifying and this does not need to wait Financial scheme. Similarly, establishment of RKLCC, CCDC and establishment of monitoring and evaluation mechanism and also Monitoring, Verification and Enforcement set-up could be done as these are not related to loan and rebate scheme.

The project revised to harmonise and update National Energy Policy 2009 but approval and endorsement was still not done. Project trained entrepreneurs, craftsman and technical students from the city but training for rural communities and promotion of improved cook stoves and efficient kilns to the target rural communities was yet to be conducted. The project had to establish functional Research, Knowledge, Learning and Coordination Centre (RKLCC), a Cook Stove and Charcoal Development Center (CCDC) with laboratory to test charcoal kiln and cook stoves, develop standard for kiln and cook stoves and certify. Also need to conduct training for capacity building of CCDC and training for rural communities on efficient charcoal production and utilisation. Project identified DoE for establishment of Research, Knowledge, Learning and Coordination Centre (RKLCC) and also made several advertisements for hiring an expert to establish the lab for testing charcoal and cook stoves but not able to find one and re-advertisement is made again. The Renewable Energy Centre in the Government Technical Institute DoE building was identified for CCDC and establishing lab but technical team suggested that the building is not suitable for installing equipment and it need heavy renovation. Similarly, while procuring the equipment for the lab, procurement made a mistake and did not include provision of installation of equipment and to install these equipment there is no expert within the country and bringing expert from outside costs a lot and there is no budget for installation of equipment. Program specialist from UNDP mentioned that she is trying to find the expert and also way to bear the cost. Due to lack of establishment of Monitoring, Verification and Enforcement arrangement, it is not able to generate information to support Designated National Authority (DNA) to develop and leverage carbon finance.

Many activities of the project are linked to loan, grant and rebate scheme and as per earlier agreement, the financial institution of the Sierra Leone named BRAC committed to take responsibility of management of this scheme but it stepped back at the time of implementation. This created big challenge to the management and due to this implementation of several activities were affected. As per UNDP rules, it is not allowed to loan money so UNDP initiated communication with Regional Office (RO) for their advice. But communication started only 30th October 2017 (followed in 26 Feb 2018 and 17 April 2018). This indicates that project management came to know about BRAC’s decision only in the middle of 2017. Weak coordination with the partners is the reason that delayed project activities. If management had coordinated with the partners closely from the beginning of the project, then it would be aware of partners’ intention and prepare accordingly to prepare alternative approach to fill the gap. Now, after receiving the advice from the UNDP regional office, the Project Steering Committee approved hiring of the Financial Engineering Expert to develop loan, grant and rebate scheme to promote improved kiln and stoves.

As per the project’s initial plan, in the first two years, it had to produce and distribute a large number of cook stoves and kilns in rural areas, develop the regulatory framework containing regulations, procedures, standards and incentives for the smooth and effective implementation of biomass energy application, establish procedure, implementation arrangement, oversight and modalities for the implementation of start-up grant and end user rebate scheme. Then they should be monitoring impact of these activities and with feedback from monitoring should have made technical improvement of stoves/kiln and also improvement in financial schemes. Then in the remaining two years, replicate in the new areas.

**4.2 Recommendations**

|  |  |  |
| --- | --- | --- |
| **Rec #** | **Recommendation** | **Entity Responsible** |
|  | **Outcome 1** |  |
| 1. | The Energy Policy is very important to support energy related activities. Project provided support to review and update the National Energy Policy 2009 but it is still in draft form. Hence it is recommended to follow up with the Ministry of Energy for approval and endorsement. After approval, there should be activities to make people aware of the policy and the important provisions that supports people. | UNDP CO/Project Management |
| 2. | As early as possible, establish RKLCC and install equipment of the lab and train staffs so that research and certification activities could be initiated. | Project Management |
| 3. | To develop standard for Cookstoves, furnaces, Kilns and charcoal project does not have to wait for establishment of the CCDC and lab. Lab is needed to test for certifying but standard could be developed using references of neighbouring countries and available scientific documents. Hence project should immediately start process of developing National Standard of Charcoal, kiln, stoves and furnaces. | Project Management |
|  | **Outcome 2** |  |
| 4. | As per project plan, after accomplishment of first round of work of production and distribution of kilns and cook stoves and also implementation of the loan and rebate scheme, monitoring and evaluation should have been done to provide feedback for improvement in technology and also scheme and replicate new areas. Project is pushed far behind so need to initiate remaining activities immediately and also follow implementation with standard monitoring and evaluation. Within the remaining one year period, project should meet its targeted activities of financial scheme implementation, kiln establishment and stove production and trainings. | Project Management |
| 5. | Also establish targeted number of kilns and produce targeted number of cook stoves in the targeted areas i.e. rural communities within the coming one year. | Project Management |
| 6. | Project also has activities of upscaling based on monitoring of first phase of implementation. But for the upscaling and impact assessment part of the project activities, time may not be sufficient. Hence it is recommended to extent project for one additional year without additional cost i.e. no cost extension. | Project Board |
|  | **Outcome 3** |  |
| 7. | Project should consider to establish bigger woodlots for demonstration (piloting) of rotational harvest for wood supply for charcoal production and wood for cooking stoves. Woodlot program should include other income generation activities e.g. agro-forestry with cash crops. | Project Management |
|  | Immediately start training and awareness campaign on the use, maintenance and benefits of energy-efficient kilns and cook stoves for village level producers and consumers as they are the target group of the project. | Project Management |
| 8. | Community were asking for food to work program to manage woodlot. This practice will not make program sustainable beyond the project life. Hence awareness activities should include information to make communities understand that those woodlots are for their use and they are the beneficiaries so they also have to contribute their time and effort. Monitoring of woodlots by few people may not be possible as they also have to work for earning food so they could make plan where all of the members will contribute certain hours in a week in rotational basis. By making such arrangement, individuals do not have to spend much time. There was also scarcity of water in the woodlot areas, if it is possible for the project then should arrange water. | Project Management |
|  | **Project Implementation and Adaptive Management** |  |
| 9. | M&E activities were weak. Implementing agency should immediately establish M&E mechanism so that project activities could be monitored closely and feedback is provided on time to strengthen adaptive management. They should also permanently arrange qualified expert in the Ministry of Agriculture, Forest and Food Security to assess the carbon sink and also in Ministry of Energy to assess emission reductions from improved stoves and kilns because these activities need to be carried out on regular basis even beyond the project life. Such monitoring and verification will support DNA of the government with the data (quantity of carbon stock information and decrease in emissions) to claim from carbon finance. Besides, as provisioned in the project activities, it is necessary to conduct impact assessment to see the impact of project intervention.  Since large amount of works are not accomplished, remaining time will not be sufficient so it is recommended to make one year no cost extension (alreeady mentioned in recommendation no. 6) | Project Management/Ministry of Energy and Forest |
|  | **Sustainability** |  |
| 10. | Continuous technical support is needed for the community members and producers of charcoal and cookstoves to continue their activities beyond the project life and for that, Ministry of Energy and Ministry of Agriculture, Forestry and Food Security has to allocate budget for the additional staff needed to provide technical support to the rural communities and also producers of charcoal and cook stoves. | Ministry of Energy and Ministry of Agriculture, Forest and Food Security. |
| 11. | Need to generate awareness among the community members on environmental issues, climate change, and benefits of woodlots, cook stoves and efficient kilns to attract them in management of woodlots and also use of improved cook stoves and kilns beyond the project life. | Project management |
| 12. | To strengthen institutional sustainability of the Project, community institutions need to be made self-reliant. Capacity enhancement of the government and community institutions will also help to continue the activities and arrange sustainable technical feedback beyond the project life. | Project management |

**Annex I: Terms of Reference for Mid-term Review**

**UNDP-GEF Midterm Review Terms of Reference**

1. **INTRODUCTION**

This is the Terms of Reference (ToR) for the UNDP-GEF Midterm Review (MTR) of the *full*-sized project titled ‘*Energy Efficient Production and Utilization of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone’* (PIMS 4904) implemented through *UNDP Sierra Leone Country Office*, which is to be undertaken in *2018*. The project started on 24th April*, 2015* and is in its *third* year of implementation. In line with the UNDP-GEF Guidance on MTRs, this MTR process was initiated before the submission of the *third* 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#handbook>)

**2. PROJECT BACKGROUND INFORMATION**

The production and trade in charcoal has been a massive rural growth industry over the past decade in Sierra Leone. Notwithstanding its popularity, the charcoal and cookstoves sub-sector remains informal, unregulated and fragmented, plagued by inefficient production system relying on non-renewable sources supported by incoherent and often conflicting policy statements. Intervention of the project on Energy Efficient Production and Utilization of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone focuses on making the trade and business more efficient, resilient and sustainable by incentivizing all value chain actors as inclusive business.

This 5-year long project has the intention to deliver on the following three outcomes, being

1. Strengthened institutional capacity on biomass resource utilization at the national, regional and community level. Operational effective policy, legal, and regulatory frameworks and review mechanisms on biomass energy technology applications
2. Increased number of investments on improved, more efficient charcoal and ICS production in Sierra Leone
3. The production and utilization of certified charcoal and certified improved cook stoves are common practices in Sierra Leone. Enhanced capacity of stakeholder in the value chain (producers, farmers, villagers, women, consumers, collectors)

Work is organized around three components that together contribute to the achievement of the above-mentioned objectives. These components are;

1. Policy and regulatory frameworks on the use of more efficiently produced charcoal and improved cook stoves
2. Development of public-private initiatives for the improved and more efficient production of charcoal and the scaling up of improved cookstove production
3. Improved, more efficient production and efficient utilization of certified charcoal and cookstove

This GEF project seeks to build upon the initiatives undertaken by WFP to further scale up institutional cook stoves in the schools, prisons and hospitals.

The project activities commenced in March 2015 with conclusion planned for December 2019. The project runs on principal allocations of 1,768,182 USD from GEF and additional co-finance of 200,000 USD from UNDP. Government co-finance has been estimated at 500,000USD and includes staff time of Government representatives in the National Steering Committee, higher level oversight of the project at ministries and other government staff who directly or indirectly contribute to the project. A total co-financing amounts to $8,821.488 from other relevant partners such as BRAC as Microfinance Company estimated at $1,682,174, GERES an NGO at $50,000 and from private sectors including WestWind Energy, Toyola Energy, Bockarie, and Samu Enterprise estimated at $200,000, $100,000, $150,000 and $100,000 respectively. The management arrangements is Direct Implementation Modality (DIM) with the Ministry of Energy as prime partner and beneficiary. Other partners include Forestry Division of the Ministry of Agriculture Forestry and Food Security (MAFFS) and Ministry of Trade and Industry as key partners.

**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 in order to set the project on-track to achieve its intended results. The MTR will also review the project’s strategy and 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[[1]](#footnote-1) 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.[[2]](#footnote-2) Stakeholder involvement should include interviews with stakeholders who have project responsibilities, including but not limited to*;* executing agencies, senior officials and task team/ component leaders, key experts and consultants in the subject area, Project Board, project stakeholders, academia, local government and CSOs, etc. Additionally, the MTR team is expected to conduct field missions to Freetown, Sierra Leone, including project sites in Port Loko District.

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 (or of participating countries in the case of multi-country projects)?
* 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/Logframe:

* Undertake a critical analysis of the project’s logframe 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[[3]](#footnote-3)** | **Baseline Level[[4]](#footnote-4)** | **Level in 1st PIR (self- reported)** | **Midterm Target[[5]](#footnote-5)** | **End-of-project Target** | **Midterm Level & Assessment[[6]](#footnote-6)** | **Achievement Rating[[7]](#footnote-7)** | **Justification for Rating** |
| **Project Objective**: Removal of barriers to sustainable production and utilization of biomass resources in Sierra Leone and application of biomass energy technologies to support local economic, environmental and social development that leads to GHG mitigation. | **Indicator 1**: Reduction of fuel wood consumption for energy use in households and industries by EOP, tonnes | 0 |  |  | Up to 174,167 |  |  |  |
| **Indicator 2:** No. of enterprises supplying clean and efficient charcoal by EOP. | 0 | 30 |  | At least 1,000 efficient kilns |  |  |  |
| **Indicator 3:** No. of households and industries that adopted, and are benefiting from, the energy-efficient furnaces/stoves by EOP. | 0 | 100 |  | Up to 15,000 |  |  |  |
| **Outcome 1:** Strengthened institutional capacity on biomass resource utilization at the national, regional and community level. Operational effective policy, legal, and regulatory frameworks and review mechanisms on biomass energy technology applications | **Indicator 4:** No. of sustainable charcoal and improved cookstoves production businesses that were proposed and developed as influenced by the strengthened policy and institutional frameworks for the deployment of stoves and kilns and biomass energy businesses by Year 2 | 0 | 5 improved cookstove and 15 charcoal producers |  | 46 improved cookstove and 100 charcoal producers |  |  |  |
| **Indicator 5:** No. of biomass energy utilization projects that are planned and developed for PURE/SURE purposes by EOP | 0 | 0 |  | 15,0000 improved cookstoves and 1,000 end users |  |
|  | **Indicator 6:** No. of policies and legal frameworks that are supportive of BET applications and biomass energy business development approved and enforced by Year 3.  **Indicator 7:** Volume of funding made available for BET application projects by EOP, US$  **Indicator 8:** No. of relevant government agencies and institutions involved in biomass energy production and are linked with each other via a working mechanism for coordination by EOP. | 0 | 2  USD 62,000  5 |  | 1  USD 200,000 (at least)  5 |  |  |  |
| **Outcome 2:** **Increased number of investments on improved, more efficient charcoal and ICS production in Sierra Leone** | **Indicator 9:** No. of improved cook stoves produced (ICS) by Year 4 | 0 | 100 |  | 15,000 |  |  |  |
| **Indicator 10:** No. of ICS bought and utilized by consumers annually starting Year 4 | 0 | 100 |  | 15,000 |  |
| **Indicator 11:** No. of installed efficient charcoal kilns that are operational by EOP. | 0 | 3 |  | 1,000 |  |  |  |
| **Indicator 12:** No. of institutional furnaces/stoves installed & being used on a daily basis by households in targeted areas by EOP | 0 | 3 |  | 700 |  |  |  |
|  | **Indicator 13:** No. of industrial stoves installed and are operational by EOP. | 0 | 10 |  | 300 |  |  |  |
|  | **Indicator 14:** Total volume of investments on biomass energy technology applications by EOP, US$ million | 0 | 0 |  | USD 500,000 |  |  |  |
| **Outcome 3.1:** The production and utilization of certified charcoal and certified improved cook stoves are common practices in Sierra Leone | **Indicator 15:** No. of new proposed and planned project developments that replicates successfully operating stoves and kilns application projects by Year 4 | 0 | **0** |  | 3 |  |  |  |
| **Indicator 16:** No. of stoves and kilns replication projects that are approved and for implementation by Year 4 | 0 | **0** |  | **3** |  |  |  |
|  | **Indicator 17:** No. of completed stoves and kilns replication projects by EOP | 0 | **0** |  | 3 |  |  |  |
| **Outcome 3.2:** No. of completed stoves and kilns replication projects by EOP | Indicator 18: No. of local manufacturing firms that can fabricate and install equipment/components used in stoves and kilns systems by Year 4 | 0 | **40** |  | 146 |  |  |  |
|  | Indicator 19: No. of trained and qualified men and women technicians working on stoves and kilns application projects by EOP | 0 | **400** |  | 3,000 champions |  |  |  |
|  | **Indicator 20:** No. of local development plans that integrate biomass energy use, stoves and kiln applications, and biomass industry development prepared by local government men and women planners by EOP  **Indicator 21:** No. of local men and women financial officers that are capable of evaluating biomass energy and other RE project proposals by EOP  **Indicator 22:** No. of local entrepreneurs and SMEs that are gainfully involved in businesses that make up the value chain of the bioenergy application industry by EOP | 0 | **0**  **5**  **5** |  | 5  **15**  **25** |  |  |  |

**Indicator Assessment Key**

|  |  |  |
| --- | --- | --- |
| 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 co-financing: 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.

**iv. 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, in light of the findings.[[8]](#footnote-8)

Recommendations should be succinct suggestions for critical interventions 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 Energy Efficient Production and Utilization of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone**

|  |  |  |
| --- | --- | --- |
| **Measure** | **MTR Rating** | **Achievement Description** |
| **Project Strategy** | N/A |  |
| **Progress Towards Results** | Objective Achievement Rating: (rate 6 pt. scale) |  |
| Outcome 1 Achievement Rating: (rate 6 pt. scale) |  |
| Outcome 2 Achievement Rating: (rate 6 pt. scale) |  |
| Outcome 3 Achievement Rating: (rate 6 pt. scale) |  |
| Etc. |  |
| **Project Implementation & Adaptive Management** | (rate 6 pt. scale) |  |
| **Sustainability** | (rate 4 pt. scale) |  |

1. **TIMEFRAME**

The total duration of the MTR will be approximately *(30 days)* working daysover a time period of *11 weeks starting 22tnd of May 2018,* and shall not exceed five months from when the consultant(s) are hired. The tentative MTR timeframe is as follows:

|  |  |  |
| --- | --- | --- |
| **ACTIVITY** | **NUMBER OF WORKING DAYS** | **COMPLETION DATE** |
| Document review and preparing MTR Inception Report (MTR Inception Report due no later than 2 weeks before the MTR mission) | *3 days* | *May 25th, 2018* |
| MTR mission: stakeholder meetings, interviews, field visits | *10 days* | *June 25th, 2018* |
| Presentation of initial findings- last day of the MTR mission | *1 day* | *June 26th, 2018* |
| Preparing draft report (due within 3 weeks of the MTR mission) | *7 days* | *July 18th, 2018* |
| Finalization of MTR report/ Incorporating audit trail from feedback on draft report (due within 1 week of receiving UNDP comments on the draft) *(note: accommodate time delay in dates for circulation and review of the draft report)* | *4 days* | *August 16th, 2018* |

Options for site visits should be provided in the Inception Report.

1. **MIDTERM REVIEW DELIVERABLES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **Deliverable** | **Description** | **Timing** | **Responsibilities** |
| **1** | **MTR Inception Report** | MTR team clarifies objectives and methods of Midterm Review | No later than 2 weeks before the MTR mission: *June 25th, 2018* | MTR team submits to the Commissioning Unit and project management |
| **2** | **Presentation** | Initial Findings | End of MTR mission: *June 26th, 2018* | MTR Team presents to project management and the Commissioning Unit |
| **3** | **Draft Final Report** | Full report (using guidelines on content outlined in Annex B) with annexes | Within 3 weeks of the MTR mission: *July 18th, 2018* | Sent to the Commissioning Unit, reviewed by RTA, Project Coordinating Unit, GEF OFP |
| **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: *August 16th, 2018* | Sent to the Commissioning Unit |

\*The final MTR report must be in English. If applicable, the Commissioning Unit may choose to arrange for a translation of the report into a language more widely shared by national stakeholders.

1. **MTR ARRANGEMENTS**

The principal responsibility for managing this MTR resides with the Commissioning Unit. The Commissioning Unit for this project’s MTR is the UNDP Sierra Leone Country Office and UNDP/ UN Environment, Energy and Natural Resource Management (EENRM) team.

The commissioning unit will contract the consultants and ensure the timely provision of per diems and travel arrangements within Sierra Leone 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.

1. **TEAM COMPOSITION**

A team of two independent consultants will conduct the MTR - one team leader (with experience and exposure to projects and evaluations in other regions globally) and one team expert, usually from the country of the project. The consultants cannot have participated in the project preparation, formulation, and/or implementation (including the writing of the Project Document) and should not have a conflict of interest with project’s related activities.

The selection of consultants will be aimed at maximizing the overall “team” qualities in the following areas:

* Recent experience with result-based management evaluation methodologies; *(15%)*
* Experience applying SMART indicators and reconstructing or validating baseline scenarios; *(10%)*
* Competence in adaptive management, as applied to *Climate Change Mitigation and Adaptation*; *(10%)*
* Experience working with the GEF or GEF-evaluations; *(15%)*
* Experience working in *global projects, with focus on non-Annex I Parties under the UNFCCC; (5%)*
* Work experience in relevant technical areas for at least *7 years; (15%)*
* Demonstrated understanding of issues related to gender and *climate change*; experience in gender sensitive evaluation and analysis. *(5%)*
* Excellent communication skills; *(5%)*
* Demonstrable analytical skills; *(5%)*
* Project evaluation/review experiences within United Nations system will be considered an asset (5%);
* A Master’s degree in *environmental sciences, environmental policies, social sciences, economics, business administration, international relations*, or other closely related field. (*10%)*

1. **PAYMENT MODALITIES AND SPECIFICATIONS**

10% of payment upon approval of the final MTR Inception Report

30% upon submission of the draft MTR report

60% upon finalization of the MTR report

1. **APPLICATION PROCESS[[9]](#footnote-9)**

**Recommended Presentation of Proposal:**

1. **Letter of Confirmation of Interest and Availability** using the [template](https://intranet.undp.org/unit/bom/pso/Support%20documents%20on%20IC%20Guidelines/Template%20for%20Confirmation%20of%20Interest%20and%20Submission%20of%20Financial%20Proposal.docx)[[10]](#footnote-10) provided by UNDP;
2. **CV** and a **Personal History Form** ([P11 form](http://www.undp.org/content/dam/undp/library/corporate/Careers/P11_Personal_history_form.doc)[[11]](#footnote-11));
3. **Brief description of approach to work/technical proposal** of why the individual considers him/herself as the most suitable for the assignment, and a proposed methodology on how they will approach and complete the assignment; (max 1 page)
4. **Financial Proposal** that indicates the all-inclusive fixed total contract price and all other travel related costs (such as flight ticket, per diem, etc), supported by a breakdown of costs, as per template attached to the [Letter of Confirmation of Interest template](http://procurement-notices.undp.org/view_file.cfm?doc_id=29916). If an applicant is employed by an organization/company/institution, and he/she expects his/her employer to charge a management fee in the process of releasing him/her to UNDP under Reimbursable Loan Agreement (RLA), the applicant must indicate at this point, and ensure that all such costs are duly incorporated in the financial proposal submitted to UNDP.

All application materials should be submitted to the address UNDP SL[[12]](#footnote-12) in a sealed envelope indicating the following reference “Consultant for the *Energy Efficient Production and Utilization of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone* Midterm Review” or by email at the following address ONLY: ([procure.sle@undp.org](mailto:procure.sle@undp.org)) This email address is being protected from spam bots, you need Javascript enabled to view it by ***20th of April, 2018.*** Incomplete applications will be excluded from further consideration.

**Criteria for Evaluation of Proposal:** Only those applications which are responsive and compliant will be evaluated. Offers will be evaluated according to the Combined Scoring method – where the educational background and experience on similar assignments will be weighted at 70%and the price proposal will weigh as 30% of the total scoring. The applicant receiving the Highest Combined Score that has also accepted UNDP’s General Terms and Conditions will be awarded the contract.

**ToR ANNEX A: List of Documents to be reviewed by the MTR Team**

1. 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
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:

1. Project operational guidelines, manuals and systems
2. UNDP country/countries programme document(s)
3. Minutes of the Energy Efficient Production and Utilization of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone Board Meetings and other meetings (i.e. Project Appraisal Committee meetings)
4. Project site location maps

**ToR ANNEX B: Guidelines on Contents for the Midterm Review Report**[[13]](#footnote-13)

|  |  |  |  |
| --- | --- | --- | --- |
| **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   * 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 |
| **5.2** | | 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.)* | | |

**ToR ANNEX C: Midterm Review Evaluative Matrix Template**

This Midterm Review Evaluative Matrix must be fully completed/amended by the consultant and included in the MTR inception report and as an Annex to the MTR report.

|  |  |  |  |
| --- | --- | --- | --- |
| **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?** | | | |
| (include evaluative question(s)) | (i.e. relationships established, level of coherence between project design and implementation approach, specific activities conducted, quality of risk mitigation strategies, etc.) | (i.e. project documents, national policies or strategies, websites, project staff, project partners, data collected throughout the MTR mission, etc.) | (i.e. document analysis, data analysis, interviews with project staff, interviews with stakeholders, etc.) |
|  |  |  |  |
|  |  |  |  |
| **Progress Towards Results: To what extent have the expected outcomes and objectives of the project been achieved thus far?** | | | |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **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?** | | | |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **Sustainability: To what extent are there financial, institutional, socio-economic, and/or environmental risks to sustaining long-term project results?** | | | |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**ToR ANNEX D: UNEG Code of Conduct for Evaluators/Midterm Review Consultants[[14]](#footnote-14)**

**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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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 *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Place)* on *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Date)*

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ToR ANNEX E: MTR Ratings**

|  |  |  |
| --- | --- | --- |
| **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 |

**ToR ANNEX F: MTR Report Clearance Form**

*(to be completed by the Commissioning Unit and UNDP-GEF RTA and included in the final document)*

**Midterm Review Report Reviewed and Cleared By:**

**Commissioning Unit**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**UNDP-GEF Regional Technical Advisor**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ToR ANNEX G: Audit Trail Template**

*Note:* The following is a template for the MTR Team to show how the received comments on the draft MTR report have (or have not) been incorporated into the final MTR report. This audit trail should be included as an annex in the final MTR report.

**To the comments received on (*date*) from the Midterm Review of Energy Efficient Production and Utilization of Charcoal through Innovative Technologies and Private Sector**

**Involvement in Sierra Leone (UNDP Project ID-*PIMS # 4904)***

*The following comments were provided in track changes to the draft Midterm Review report; they are referenced by institution (“Author” column) and track change comment number (“#” column):*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Author** | **#** | **Para No./ comment location** | **Comment/Feedback on the draft MTR report** | **MTR team**  **response and actions taken** |
|  |  |  |  |  |
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**Approval**

Name: Designation: Signature: Date:

**Annex II: Itinerary of Activities of the Mid-term Review Mission**



**Annex III: Persons Interviewed**

**WestWind Energy Company**

1. Ms Hannah Tapsr

**CORD- SL**

1. Dr. M. Gbondah

1. Chief Pa Alimamy Kanu, Mawoma Section Koya Chiefdom P/L

**Markoleh Village, Mawoma Section, Koya Chiedom, Port Loko District**

1. Group 1: Usman Sesay
2. Group 2: Ibrahim Kamara
3. Group 3: Hawanatu T. Kamara
4. Group 4: Abdulai Tarawally

**Kasewa Village, Moyamba Junction Moyamba District**

1. Sheika Koroma-Group 3 leader
2. Fatmata Gbla
3. Hawa Bundu
4. Abu Bakarr Gbla-Group 2 leader
5. Kenie Jawei-Group 1 leader
6. Amadu Kanu
7. Fatmata Koroma

Note that each group has 30 members each

**Annex IV: Summary Evaluation of Project Achievements by Objectives and Outcomes**

The Project logframe in the Project Document was revised in the Inception Report. The present evaluation matrix uses the version contained in the Inception Report.

Key:

Green = Achievement of MTR level target.

Yellow = On target to be achieved.

Red = Not on target to be achieved.

Hatched colour = estimate; situation either unclear or indicator inadequate to make a firm assessment against.

**Project Title: Energy Efficient Production and Utilisation of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Project Strategy** | **Indicator** | **Baseline Level** | **Level in 1st PIR (self- reported)** | **End-of-project Target** | **Midterm Level & Assessment** | **Achievement Rating** | **Justification for Rating** |
| **Project Objective**: Removal of barriers to sustainable production and utilization of biomass resources in Sierra Leone and application of biomass energy technologies to support local economic, environmental and social development that leads to GHG mitigation. | **Indicator 1**: Reduction of fuel wood consumption for energy use in households and industries by EOP, tonnes | 0 |  | Up to 174,167 | 0 | U | Establishment of Kiln and production of cook stoves has not been initiated yet. |
| **Indicator 2:** No. of enterprises supplying clean and efficient charcoal by EOP. | 0 | 30 | At least 1,000 efficient kilns | 0 | U | Not initiated yet. |
| **Indicator 3:** No. of households and industries that adopted, and are benefiting from, the energy-efficient furnaces/stoves by EOP. | 0 | 100 | Up to 15,000 | 0 | U | Not initiated yet |
| **Outcome 1:** Strengthened institutional capacity on biomass resource utilization at the national, regional and community level. Operational effective policy, legal, and regulatory frameworks and review mechanisms on biomass energy technology applications | **Indicator 4:** No. of sustainable charcoal and improved cookstoves production businesses that were proposed and developed as influenced by the strengthened policy and institutional frameworks for the deployment of stoves and kilns and biomass energy businesses by Year 2 | 0 | 5 improved cookstove and 15 charcoal producers | 46 improved cookstove and 100 charcoal producers | 0 | U | Trained some entrepreneurs but production by them and further training to village level producer has not started yet. |
| **Indicator 5:** No. of biomass energy utilization projects that are planned and developed for PURE/SURE purposes by EOP | 0 | 0 | 15,0000 improved cookstoves and 1,000 end users | 0 |
|  | **Indicator 6:** No. of policies and legal frameworks that are supportive of BET applications and biomass energy business development approved and enforced by Year 3.  **Indicator 7:** Volume of funding made available for BET application projects by EOP, US$  **Indicator 8:** No. of relevant government agencies and institutions involved in biomass energy production and are linked with each other via a working mechanism for coordination by EOP. | 0 | 2  USD 62,000  5 | 1  USD 200,000 (at least) 5 | National Energy Policy 2009 is revised to harmonize and update but not approved by cabinet  0  0 | U  U  U | Policy draft prepared but not approved by the cabinet.  Financial Incentive scheme document development initiated recently by hiring a consultant. Funding has to wait for some time.  Government agencies and institutions were not involved in biomass energy production and working mechanism yet to be developed. |
| **Outcome 2:** **Increased number of investments on improved, more efficient charcoal and ICS production in Sierra Leone** | **Indicator 9:** No. of improved cook stoves produced (ICS) by Year 4 | 0 | 100 | 15,000 | 0 | HU | Not initiated yet so difficult to meet target within project life. |
| **Indicator 10:** No. of ICS bought and utilized by consumers annually starting Year 4 | 0 | 100 | 15,000 | 0 |
| **Indicator 11:** No. of installed efficient charcoal kilns that are operational by EOP. | 0 | 3 | 1,000 | 0 | HU | Installation of kiln has not initiated yet. |
| **Indicator 12:** No. of institutional furnaces/stoves installed & being used on a daily basis by households in targeted areas by EOP | 0 | 3 | 700 | 0 | HU | Not initiated yet. Difficult to meet the target in remaining period. |
|  | **Indicator 13:** No. of industrial stoves installed and are operational by EOP. | 0 | 10 | 300 | 0 | HU | Same as above |
|  | **Indicator 14:** Total volume of investments on biomass energy technology applications by EOP, US$ million | 0 | 0 | USD 500,000 | 0 | U | Financing has not initiated yet. |
| **Outcome 3.1:** The production and utilization of certified charcoal and certified improved cook stoves are common practices in Sierra Leone | **Indicator 15:** No. of new proposed and planned project developments that replicates successfully operating stoves and kilns application projects by Year 4 | 0 | **0** | 3 | **0** | U | No initiation taken place yet |
| **Indicator 16:** No. of stoves and kilns replication projects that are approved and for implementation by Year 4 | 0 | **0** | **3** | **0** | HU | Not yet. Difficult to meet this target within project life. |
|  | **Indicator 17:** No. of completed stoves and kilns replication projects by EOP | 0 | **0** | 3 | **0** | HU | Kiln and stove production in target rural areas not initiated yet so difficult to replicate by EoP |
| **Outcome 3.2:** No. of completed stoves and kilns replication projects by EOP | Indicator 18: No. of local manufacturing firms that can fabricate and install equipment/components used in stoves and kilns systems by Year 4 | 0 | **40** | 146 | **0** | HU | At the village level, manufacturing has not initiated yet so by year 4 (remaining one year) difficult to achieve target |
|  | Indicator 19: No. of trained and qualified men and women technicians working on stoves and kilns application projects by EOP | 0 | **400** | 3,000 champions | **5** | U | Only few that are trained in the initial training are working for Westwind Energy. Training in village level has not initiated yet. |
|  | **Indicator 20:** No. of local development plans that integrate biomass energy use, stoves and kiln applications, and biomass industry development prepared by local government men and women planners by EOP  **Indicator 21:** No. of local men and women financial officers that are capable of evaluating biomass energy and other RE project proposals by EOP  **Indicator 22:** No. of local entrepreneurs and SMEs that are gainfully involved in businesses that make up the value chain of the bioenergy application industry by EOP | 0 | **0**  **5**  **5** | 5  **15**  **25** | **0**  **0**  **0** | U  U  U | Not initiated yet so difficult to meet so many activities in remain one year  Local men and women financial officers are not trained yet to evaluate biomass energy and other RE project proposals so completing all target in remaining one year is difficult  Not initiated preparatory training for local entrepreneurs and SME so achieving target is difficult in remaining one year. |

Annex V: Revised Table of Project Indicators

|  |
| --- |
| **This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD:** By 2018, targeted Government institutions, the private sector, and local communities manage natural resources in a more equitable and sustainable way. |
| **Country Programme Outcome Indicators:**  **CP Outcome: 3. Access to sustainable energy and livelihoods for remote Chiefdoms (sub-districts/blocks) improved.**  UNDP Strategic Plan Environment and Sustainable Development Primary Outcome: Expanding access to environmental and energy services for the poor  UNDP Strategic Plan Secondary Outcome: Strengthened national capacities to mainstream environment and energy concerns into national development plans and implementation systems; and Countries develop and use market mechanisms to support environmental management |
| **Expected CPAP Output (s):**  3.1: Adequate policies on renewable energy in place, strong institutional linkages established, and knowledge, awareness and capacities of stakeholders improved (policy makers, financiers, suppliers and end-users);  3.2: Effective and affordable renewable/alternative energy technologies for remote Chiefdoms supported through demonstration projects and private sector participation. |
| **Applicable GEF CC-M Focal Area Objective:** Objective 2: Promote market transformation for energy efficiency in industry and the building sector. |
| **Applicable GEF Expected Outcomes:** Outcome 2.2: Sustainable financing and delivery mechanisms established and operational |
| **Applicable GEF Outcome Indicators:** Tonnes CO2eq avoided |

|  | **Indicator** | **Baseline** | **Targets End of Project** | **Source of verification** | **Risks and Assumptions** |
| --- | --- | --- | --- | --- | --- |
| Project Goal: Reduction of GHG emissions in the rural household and industrial sectors of Sierra Leone through integrated and sustainable biomass resource production and utilization, and promotion of sustainable biomass energy technologies in Sierra Leone using market based approaches. | • Quantity of GHG emissions mitigated annually by End of Project (EOP), tCO2e. | 0 | Up to 159,668 (68,947+90,721) | • GHG emission mitigation calculations; Statistics reports from DoE; EEPUC project activity and M&E reports    • Surveys; Statistics reports from DoE; EEPUC project activity and M&E reports | • Recognition of the government on importance of reducing GHG emissions and continuing commitment towards it. |
| • Total cumulative quantity of GHG emissions mitigated by EOP, tCO2e. | 0 | Up to 433,568  (275,789+157,779) |
|  |  |  |
|  | • Reduction of fuel wood consumption for energy use in households and industries by EOP, tonnes. | 0 | Up to 174,167 | • Household and industry surveys; EEPUC project M&E Reports | • Government continues to have the political will to support policies and actions that would promote clean and efficient stoves and kilns applications |
| • No. of enterprises supplying clean and efficient charcoal by EOP. | 0 | • At least 1,000 efficient kilns | • Industry surveys; EEPUC project activity and M&E Reports |
| • No. of households and industries that adopted, and are benefiting from, the energy-efficient furnaces/stoves by EOP. | 0 | * Up to 15,000 | • Household surveys; EEPUC project activity and M&E Reports |
| Component 1: Policy/regulatory frameworks on the use of more efficiently produced charcoal and improved cook stoves | | | | | |
| Outcome 1: Strengthened institutional capacity on biomass resource utilization at the national, regional and community level. Operational effective policy, legal, and regulatory frameworks and review mechanisms on biomass energy technology applications | • No. of sustainable charcoal and improved cookstoves production businesses that were proposed and developed as influenced by the strengthened policy and institutional frameworks for the deployment of stoves and kilns and biomass energy businesses by Year 2 |  | • 46 improved cookstove and 100 charcoal producers | * Business plans of companies interested in biomass energy production; Industry surveys; EEPUC project activity and M&E reports | Government continues to see biomass as a priority energy resource to support the country’s sustainable economic development |
| • No. of biomass energy utilization projects that are planned and developed for PURE/SURE purposes by EOP |  | • 15,0000 improved cookstoves and 1,000 end users | * Documentation of proposed and planned biomass energy supported PURE/SURE projects by the GOT and private sector |
|  | • No. of policies and legal frameworks that are supportive of BET applications and biomass energy business development approved and enforced by Year 3 | 0 | * 1 | • Documentation of new and approved policies and legislations for supporting bioenergy applications |  |
|  | • Volume of funding made available for BET application projects by EOP, US$  • No. of relevant government agencies and institutions involved in biomass energy production and are linked with each other via a working mechanism for coordination by EOP. | 0  0 | • USD 200,000 (at least)  • 5 | • Documentation of new and approved policies and legislations for supporting bioenergy applications  • Documentation of financial agreements for bionergy projects   * Surveys; EEPUC project activity and M&E Report   • Documentation of Government memos and MOU on the collaborative work on BET promotion activities |  |
| Component 2: Development of public-private initiatives for the improved and more efficient production of charcoal and the scaling up of improved cookstove production | | | | | |
| Outcome 2: Increased number of investments on improved, more efficient charcoal and ICS production in Sierra Leone | • No. of improved cook stoves produced (ICS) by Year 4 | 0 | * 15,000 | • Surveys; EEPUC project activity and M&E reports |  |
| • No. of ICS bought and utilized by consumers annually starting Year 4 | 0 | * 15,000 | * Surveys; EEPUC project activity and M&E reports |
| • No. of installed efficient charcoal kilns that are operational by EOP. | 0 | * 1,000 | * Surveys; EEPUC project activity and M&E reports |
| • No. of institutional furnaces/stoves installed & being used on a daily basis by households in targeted areas by EOP | 0 | * 700 | • Surveys; EEPUC project activity and M&E reports |
| • No. of industrial stoves installed and are operational by EOP.   * Total volume of investments on biomass energy technology applications by EOP, US$ million | 0  0 | * 300 * US$500,000 | • Surveys; EEPUC project activity and M&E reports  • Survey of FIs; EEPUC project activity and M&E reports |
| Component 3: Improved, more efficient production and efficient utilization of certified charcoal and cookstove | | | | | |
| Outcome 3.1:The production and utilization of certified charcoal and certified improved cook stoves are common practices in Sierra Leone | • No. of new proposed and planned project developments that replicates successfully operating stoves and kilns application projects by Year 4  • No. of stoves and kilns replication projects that are approved and for implementation by Year 4  • No. of completed stoves and kilns replication projects by EOP | 0  0  0 | * 3 * 3 * 3 | • Documentation of project plans; EEPUC project activity and M&E reports  • Documentation of approved project plans; EEPUC project activity and M&E reports  • Reports on the performance of replication projects; EEPUC project activity and M&E reports |  |
| Outcome 3.2 Enhanced capacity of stakeholder in the value chain (producers, farmers, villagers, women, consumers, collectors) | • No. of local manufacturing firms that can fabricate and install equipment/components used in stoves and kilns systems by Year 4  • No. of trained and qualified men and women technicians working on stoves and kilns application projects by EOP | 1  0 | * 146   • 3,000 champions | • Company profile of qualified local manufacturing firms fabricating and installing bioenergy system equipment and components  • Company profile of qualified local engineering firms working on bioenergy application projects; job certifications of technical staff  • Company profile of qualified local technical services firms doing R&M work on bioenergy system facilities; job certifications of technical staff |  |
| • No. of local development plans that integrate biomass energy use, stoves and kiln applications, and biomass industry development prepared by local government men and women planners by EOP  • No. of local men and women financial officers that are capable of evaluating biomass energy and other RE project proposals by EOP  • No. of local entrepreneurs and SMEs that are gainfully involved in businesses that make up the value chain of the bioenergy application industry by EOP | 0  0  0 | • 5  • 15  • 25 | • Company profile of local firms working on sustainable forestry projects; job certifications of technical staff  • Documentation on local development plans in selected towns  • Profile of banks/FIs with RE project loan portfolios; job certifications of technical staff  • Survey of companies involved in the upstream and downstream activities in the bioenergy application industry |

Annex VI: Organizational Structure of Project

**Project Organisation Structure**

**Team Leader**

**Component 1 (MoE, FD, MLCPE)**

**Team Leader**

**Component 3 (MoE)**

**Team Leader**

**Component 2 (MoE, FD, MTI)**

**Project Manager**

**(Domiciled at MoE)**

**Short-term External Experts (Hired via TA)**

**Project Assistant**

**(Project-hired)**

**Project Assurance**

**UNDP Task Manager**

Senor Supplier: UNDP CO, Co-financing donors

Executive: Project Director (MoE)

Senior Beneficiary: MLCPE, MFED, MAFFS, Forestry Division

**Project Board (Chair: MoE)**

Annex VII: Field Visit Summary

Field study mission started from 20th of October 2018 after departure from Kathmandu to Sierra Leone. On 21st October International Consultants (IC) had reviewed project documents and also had meeting with International consultant from other project to explore information to analyse if they have any relevant activities to link with this project. On 22 October, had meeting with Project Manager, National Consultant and other UNDP staffs related to this project to discuss the plan of the evaluation mission. On the 23rd October, consultant had meeting with Mr Sahr Kellie, Director of the Agriculture (Forestry sector) and discussed on the activities of the project and constraints they faced during implementation. In the afternoon of the same day team visited Westwind Energy Company had interaction with Ms. Hannah Tapss and also observed cook stove making activities. On the 24, team continued acquiring project related documents and reviewing them as meeting set for that day was cancelled. On 25-26th October, team visited field in Makolerr village and Kasewa village to observe woodlots and interacted with the community groups connected to those woodlots. On the 27th and 28th consultant reviewed data available and also reviewed reports received during that time. On 29th, International Consultant had meeting with the Director of Energy and Chairman of the Project Board Ing. Benjamin Kamara and discussed on activities, constraints and future strategy. Same afternoon International Consultant had meeting with Ms. Tanzila Watta Sankoh, Programme Specialist-Environment Cluster and also with Mr. Dr. M. Gpondah of CORD-SL and discussed various aspects of the project activities.

On the 30th October, International consultant shared initial findings with the stakeholders in UNDP seminal hall and in the evening left for Lungi area where he had meeting with some International consultants working in Sierra Leone.

International Consultant return on 31st October 2018 from Sierra Leone.

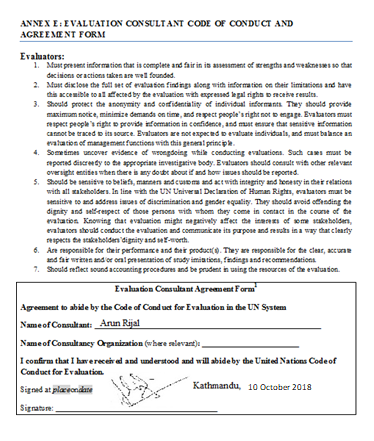
**Annex VIII: List of References**

* Project Document
* Project Inception workshop report
* PIF
* UNDP Project Document
* UNDP Initiation Plan
* All Project Implementation Report (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 mid-term
* Oversight mission reports
* All monitoring reports prepared by the project
* Financial and Administration guidelines used by Project Team
* Project operational guidelines, manuals and systems
* UNDP country/countries programme documents
* Minutes of the Project Board meetings and other meetings
* Project site location maps.
* Inception Report of the Financial Support Scheme development consultancy
* GEF Tracking tool

**Annex IX: Evaluation Questions**

|  |  |  |  |
| --- | --- | --- | --- |
| **Evaluation Criteria/Questions** | **Indicators** | **Sources** | **Methodology** |
| **Relevance:** How does the project related to the main objective of the GEF focal area, and to the environment and development priorities at the local, regional and national level? | * Project objectives and activities related to objective of GEF focal area and priorities at national, local and regional level * Consistency and contribution to GEF focal area objectives and to national development strategies * Stakeholder views of project significance and potential impact related to the project objective | * Project documents, report vs GEF document * Interview with authorities at different level | * Project report review in the light of GEF document * Interviews with relevant personnel |
|  |  |  |  |
| **Effectiveness:** To what extent have the expected outcomes and objectives of the project been achieved? | * Level of achievement of expected outcomes or objectives to date * Long term changes in environment management processes, practices and awareness that can be attributable to the project * Enhanced capacity of relevant institutions * Favourable policies and effective implementation of efficient and sustainable charcoal production and utilisation * Participation of women in policy and program formulation | * Change in the ground situation observed. * Policy/strategy or program formulation activities included women and their issues incorporated. * Policies/strategies/ programs effectively implemented * Institutions strengthened | * Report with information on effective implementation of activities and strategies * Report on intuition setup * Interaction with the policy level people to ground level communities and field staffs. * Polity document review report. * Field verification of activities |
|  |  |  |  |
| **Efficiency:** Was the project implemented efficiently in-line with international and national norms and standards? | * Reasonableness of the costs relative to scale of outputs generated * Efficiencies in project delivery modalities Consistency and contribution to GEF focal area objectives and to national development strategies * Changes in project circumstances that may have affected the project relevance and effectiveness | * Financial statements * Project structure and function * Project document and annual reports * Experience of project staffs and other relevant stakeholders | * Analysis of financial statements. * Analysis of project structure and functionalities * Analysis of project circumstances in project document (past and present) * Interaction with relevant stakeholders |
|  |  |  |  |
| **Sustainability:** To what extent are there financial, institutional, socio-economic, and/or environmental risks to sustaining long-term project results? | * Degree to which outputs and outcomes are embedded within the institutional framework (policy, laws, organizations, procedures) * Implementation of measures to assist financial sustainability of project results * Observable changes in attitudes, beliefs and behaviours as a result of the project * Measurable improvements from baseline levels in knowledge and skills of targeted staffs. | * Project report * Observation in the field * Interview with stakeholders | * Review of project reports. * Observation in the field to see impact on the ground * Interaction with stakeholders |
|  |  |  |  |
| **Impacts:** Are there indications that the project has contributed to, or enabled progress towards reduced emission of greenhouse gases and stress on the natural resources and/or improved environment status? | * Favourable policies/strategies formulated/amended * Improved monitoring mechanism * Technically capacity of relevant institution strengthened. * Regular monitoring helped to generate updated information which helped National Communication and also evidence based planning exercise. * Improved level of awareness made activities sustainable. * Measurable improvements from baseline levels in technical knowledge and skills of targeted staff/other stakeholders. * Measurable improvements from baseline levels in the emission and improvement in environment. | * Project Reports * Interview with stakeholders. * Observation in the field. | * Review of project reports/documents. * Interaction with local to national level stakeholders. * Field observation. |

**Annex X: Evaluation Consultant Agreement Document**



Annex XI: Evaluation Criteria

**i)Criteria used to evaluate the Project by the MTR Team**

|  |  |
| --- | --- |
| **Highly Satisfactory (HS)** | Project is expected to achieve or exceed **all** its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as “good practice”. |
| **Satisfactory (S)** | Project is expected to achieve **most** of its major global environmental objectives, and yield satisfactory global environmental benefits, with only minor shortcomings. |
| **Marginally Satisfactory (MS)** | Project is expected to achieve **most** of its major relevant objectives but with either significant shortcomings or modest overall relevance. Project is expected not to achieve **some** of its major global environmental objectives or yield some of the expected global environment benefits. |
| **Marginally Unsatisfactory (MU)** | Project is expected to achieve **some** of its major global environmental objectives with major shortcomings or is expected to achieve only **some** of its major global environmental objectives. |
| **Unsatisfactory (U)** | Project is expected **not** to achieve **most** of its major global environment objectives or to yield any satisfactory global environmental benefits. |
| **Highly Unsatisfactory (U)** | The project has failed to achieve, and is **not** expected to achieve, **any** of its major global environment objectives with no worthwhile benefits. |

**ii) Scale used to evaluate the sustainability of the Project**

|  |  |
| --- | --- |
| Likely (L) | There are no risks affecting this dimension of sustainability. |
| Moderately Likely (ML) | There are moderate risks that affect this dimension of sustainability. |
| Moderately Unlikely (MU) | There are significant risks that affect this dimension of sustainability. |
| Unlikely (U) | There are severe risks that affect this dimension of sustainability. |

**iii) Rating scale for outcomes and progress towards “intermediate states”**

Indicator Assessment Key: Green= Achieved Yellow= On target to be achieved Red= Not on target to be achieved

**Annex XII: MTR Report Clearance Form**

**Midterm Review Report Reviewed and Cleared By:**

**Commissioning Unit**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**UNDP –GEF Regional Technical Advisor**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Annex XIII: UNDP-GEF MTR Report Audit Trail

**To the comments received on 14 Jan and again on 28th Feb 2019 from the Mid-Term Review of the project titled, “Energy Efficient Production and Utilization of Charcoal through Innovative Technologies and Private Sector Involvement in Sierra Leone” (UNDP-GEF Project ID-*PIMS #4904)***

*The following comments were provided in track changes to the draft Mid-term Review report; they are referenced by institution (“Author” column) and track change comment number (“#” column):*

**Audit Trail separated from this report in final submission and submitted as separate file.**

1. For ideas on innovative and participatory Monitoring and Evaluation strategies and techniques, see [UNDP Discussion Paper: Innovations in Monitoring & Evaluating Results](http://www.undp.org/content/undp/en/home/librarypage/capacity-building/discussion-paper--innovations-in-monitoring---evaluating-results/), 05 Nov 2013. [↑](#footnote-ref-1)
2. For more stakeholder engagement in the M&E process, see the [UNDP Handbook on Planning, Monitoring and Evaluating for Development Results](http://www.undg.org/docs/11653/UNDP-PME-Handbook-(2009).pdf), Chapter 3, pg. 93. [↑](#footnote-ref-2)
3. Populate with data from the Logframe and scorecards [↑](#footnote-ref-3)
4. Populate with data from the Project Document [↑](#footnote-ref-4)
5. If available [↑](#footnote-ref-5)
6. Colour code this column only [↑](#footnote-ref-6)
7. Use the 6-point Progress Towards Results Rating Scale: HS, S, MS, MU, U, HU [↑](#footnote-ref-7)
8. Alternatively, MTR conclusions may be integrated into the body of the report. [↑](#footnote-ref-8)
9. Engagement of the consultants should be done in line with guidelines for hiring consultants in the POPP: <https://info.undp.org/global/popp/Pages/default.aspx> [↑](#footnote-ref-9)
10. <https://intranet.undp.org/unit/bom/pso/Support%20documents%20on%20IC%20Guidelines/Template%20for%20Confirmation%20of%20Interest%20and%20Submission%20of%20Financial%20Proposal.docx> [↑](#footnote-ref-10)
11. <http://www.undp.org/content/dam/undp/library/corporate/Careers/P11_Personal_history_form.doc> [↑](#footnote-ref-11)
12. United Nations Development Program Sierra Leone: 55 Wilkinson Road, Freetown, Sierra Leone. [↑](#footnote-ref-12)
13. The Report length should not exceed *40* pages in total (not including annexes). [↑](#footnote-ref-13)
14. <http://www.unevaluation.org/document/detail/100> [↑](#footnote-ref-14)