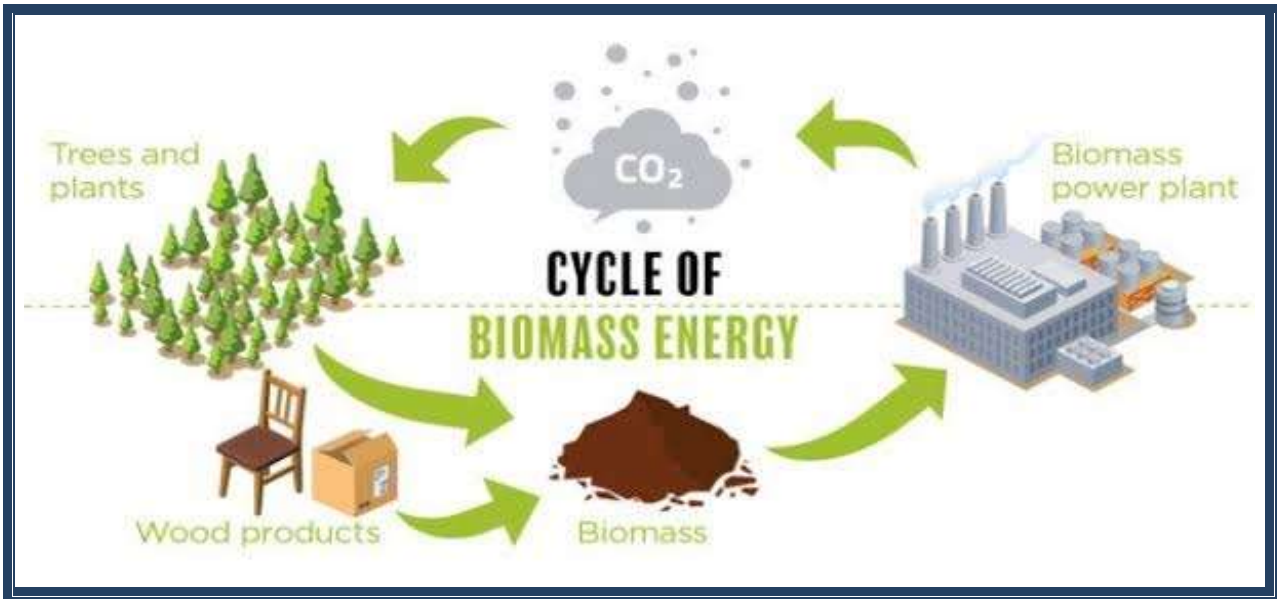
Technical Assistance for a Study on Forest Biomass Energy Conversion

First Progress Report

Contract No. 3000080064



First Progress Report

Presented to: UNIDO

Author: Climate and Energy (C&E) Advisory Limited (formerly Camco Advisory Services (Kenya) Limited) and S2 Services

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1 PROJECT CONTEXT

1.1 BACKGROUND

Climate and Energy Advisory (C&E) Kenya Limited in partnership with S2 Services of Cameroun have been contracted by the Climate Technology Centre and Network (CTCN) to provide Technical Assistance for a Study on Forest Biomass Energy Conversion.

The rationale and context of this study is that demand for energy wood (wood charcoal and firewood) in the countries in the COMIFAC[1], CEDEAO and neighbouring Sahara areas is and has been a direct cause of deforestation and forest degradation in the Congo basin. This growing demand is due to the combined effect of the following three underlying causes: (i) population growth, (ii) the absence of alternative energy sources appropriate for low-income populations, and (iii) inefficient production and use of wood charcoal. To get a clearer idea of which policies and actions shall be promoted in order to mitigate this challenge, and also how these could be structured and access climate finance, the Government of the Republic of the Congo, the Democratic Republic of the Congo, the Central African Republic, the Republic of Cameroon, the Gabonese Republic, the Republic of Equatorial Guinea, the Republic of Chad, the Republic of Burundi, the Republic of Senegal, the Republic of Côte d'Ivoire, the Republic of Mali, Burkina Faso, the Togolese Republic, the Republic of Benin and the Republic of Djibouti approached the CTCN for a technical assistance.

Goal

The overarching goal of the assignment is to identify the options for economical industrial conversion of forest waste through projects with a significant positive climatic and social impact.

Objectives

The objective of this contract is to:

i) assess the status of the 15 participating countries on the bioenergy potential from sustainable biomass sources, such as wood waste from forest harvesting operations and industry.
ii) improve afforestation and forest sector residues energy conversion.
iii) identify market opportunities for the private sector that will bypass the exploitation of traditional biomass sources.

In order to address this challenge, the CTCN developed these Terms of Reference, outlining an intervention with the outputs listed below and that will be implemented within a period of up to 12 months. The overarching goal is to identify the options for economical industrial conversion of forest waste through projects with a significant positive climatic and social impact. The assignment will consist of the following outputs:

1. Identification of the source of forest residues in the forest supply chain. Identification of hot spots of wastes in the supply chain in order to map the sites where the greatest amount of waste is generated.
2. Determine the requirements and availability of technologies for converting the identified biomass resources.
3. Assessment of the sustainability of the suggested bioenergy solutions.
4. Identification of pilot projects.

[1] *https://www.comifac.org/*

1.2 OUTCOME, OUTPUT AND ACTIVITIES OF THE PROPOSED CONTRACTED SERVICES

1.2.1 Outcome:

The outcome of the technical assistance (TA) is to help improve the understanding of bioenergy potential, energy conversion technologies, the forest wastes availability, industrial forest creation in the participatory countries, which will lead to developing new market opportunities for an affordable and sustainable forestry energy source to avoid the use of traditional biomass. In summary, the assistance will identify opportunities to planting new forests as source of raw material, forest residues from the supply chain, wood wastes, energy conversion technologies. It will give indications on how to limit traditional biomass market and uses, while proposing alternative market opportunities for residual forest biomass, and policy recommendations. This analysis will lead to new country policies and marketable energy opportunities for the population, and to an efficient use of forest wastes while laying the basis for the development of a circular forest economy. The project will also focus on enhancing the charcoal value chain.

1.2.2 Output, Activities and Deliverables

The Technical Assistance consists of six main outputs with corresponding activities and sub-activities. These are captured in the detailed work plan which is appended as Annex 1.

1.3 APPROACH AND METHODOLOGY

A detailed approach and methodology were presented in the proposal to CTCN. Here below we outline an abridged version of the approach and methodology. It will involve three main aspects:

1. Literature and document reviews
2. Consultation with main Stakeholders
3. Collection of primary data where applicable and field visits.

1.3.1 Literature and document review

This will mainly involve a review of policies, country development priority reports, past and ongoing project reports in the 15 countries focusing on the following sectors -- Agriculture, Forestry, Energy, Environment, Gender and climate change processes. The aim of this exercise is to ensure that we understand countries priorities and policies regarding use of biomass energy, how the utilization of biomass in these countries affects related sectors such as agriculture, environment and socio-economic implication including gender.

1.3.2 Consultations with main stakeholders

This will involve intense consultations with the countries NDEs, project proponents and other key stakeholders that will be identified. In this regards we have divided

the 15 countries into three main areas and identified coordinators of these regions, for ease of implementation:

i. Central Africa Countries - Government of the Republic of the Congo, the Democratic Republic of the Congo, the Central African Republic, the Republic of Cameroon, the Gabonese Republic, the Republic of Equatorial Guinea and the Republic of Chad
ii. West Africa Countries - the Republic of Senegal, the Republic of Côte d'Ivoire, the Republic of Mali, Burkina Faso, the Togolese Republic, the Republic of Benin and
iii. East and Horn of Africa - the Republic of Burundi and the Republic of Djibouti

Technical experts in charge of the three regions will be introduced to the NDEs and other interested key stakeholders. Working with the countries NDEs, we will map out the key stages where forest residue biomass is generated in each of the countries with special focus to harvesting, transportation and processing stages.

1.3.3 Collection of primary data where applicable and field visits.

We have identified country contacts who will assist in the collection of any required field data. However, due to Covid-19 pandemic very limited visits will be carried out in the initial period as focus will be on available secondary data. In the event that countries open up after managing the situation, field visits will be carried out to organize workshops where necessary. Given the limited budget it is proposed to organize workshops that involve country clusters and two final workshops at the end of the assignment. The aim of the workshops will be to create awareness on the project, to collect available data from on-going projects and identify some of the existing similar projects. This is particularly important in the identification of the source of forest residues in the forest supply chain in order to map sites where the largest amount of waste is generated.

Below is a quick reiteration how the above methodology will be used in the execution of the activities to achieve desired outputs.

Output 1 activities are the main subject of this progress report. They are all desk based and have been achieved and the deliverables annexed in this document.

Output 2 activities are extremely crucial as they involve the identification of the source of forest residues in the forest supply chain and mapping the sites where the largest amount of waste is generated. This will be done through review of literature, interviews with key stakeholders involved in forest supply chain and site visits. The mapping flows of wood and their waste will aim at illustrating the complex linkages that may exist between the value chain processes and actors. This will help us to understand the process by which a wood product goes through and associated waste until it reaches the final customer.

Output 3 will determine the requirements of the available technologies for converting the identified biomass resources. In this activity, using information obtained from output 2, we will identify bioenergy technologies that have the greatest potential for uptake at scale in the selected countries for each sector and options identified. This will be undertaken by Web Based Research, literature review and field mission. Systematic searches will be undertaken via Google, using standardised search strings, to identify the most appropriate technologies. The Google-based searches will be complemented by a parallel investigation via the websites and web-accessible publications of specific organisations known to be working on bioenergy in the target countries and Sub Sahara Africa. Consideration will be given to the most utilised technologies in Africa from anaerobic digestion-to-internal combustion engine, gasification-to-internal-combustion-engine and combustion-to-steam turbine among other technologies. The most promising ones will be prioritised and where applicable replicated in countries with similar conditions.

Output 4 activities under this output are aimed at assessing the environmental and socio-economic implications of the suggested bioenergy solutions in order to determine their sustainability. These activities will be carried out in quarter 4 of this year and will involve field visits to define and analyze the environmental factors (GHG emissions, pressure on natural resources, extraction of forest residues) and socio-economic factors of the suggested bioenergy end solutions. Environmental risks will be assed and risk mitigation measures proposed. A scenario analysis will also be conducted to identify opportunities to enhance environmental and social economic benefits.

Output 5 activities involve analysis of information generated in the outputs 2 and 3 above to prepare a pilot project in each country tailored to the local conditions based on replicability, engagement with local private sector and bankability noting that the possibility of merging projects in some of the countries with similar conditions should be taken in due account. These pilots project will be elaborated based on information gathered and its expected impact evaluated. Countries will receive a project concept note that can be shared with financial entities to seek scale-up funding.

Output 6 activities involve organizing a one-day workshop at the end of the project to present the activities of the technical assistance in each of the regions identified. Each and every country NDE and the implementer along with key stakeholders from relevant sectors will be invited to the workshop. We will check with each country and NDEs to verify the possibility to co-fund the workshop, either in-kind by for instance hosting the workshop, advertisement and dissemination, etc. According to the TORs, the NDEs will help identifying another event in the region to which associate the organization of the final workshop, in order to maximize visibility and increase the potential audience. Private sector representatives will be specifically targeted in order to find opportunities for matchmaking with the pilot projects identified in the TA. The list of all participants will be prepared by the consultants and discussed with NDEs to get a final list of attendees.

2 FIRST PROGRESS REPORT

On 13th March C&E Advisory received an email from CTCN informing us that our proposal was found both technically and commercially acceptable. We signed the UNIDO Contract No. 3000080064 on the 18th March after a short discussion with the CTCN Regional Manager, Mr. Rajiv Garg. In accordance with the terms of reference (TORs), CTCN organized a kick-off call among all relevant parties involved in the request to introduce the Contractor to the NDEs and Proponent on the 3rd April 2020. This kick-off virtual meeting was poorly attended partly because of the Covid-19 lockdown which has affected many countries. Notwithstanding, the meeting was successfully executed, and the project implementers asked to commence the assignment. The meeting notes are appended as annex 3.

As per the TOR, this first progress report presents the deliverables for Output 1, which is the 'Development of implementation planning and communication documents. The main activity for this output (Activity 1) has involved preparing a comprehensive consultancy work plan; a Monitoring and Evaluation Plan (M&EP); and a two-page CTCN Impact Description periodic progress reports. These main deliverables are described below:

Deliverable 1.1: Detailed work plan of all activities, deliverables, outputs, responsible persons and time frame for implementing the response plan.

Deliverable 1.2: A Monitoring and Evaluation Plan (M&EP) with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation, should be put in place. The monitoring and evaluation plan should apply selected indicators from the Closure and Data Collection (CDC) report template and enable the lead implementer to complete the CTCN Closure and Data collection report at the end of the assignment (in English).

Deliverable 1.3 A two-page CTCN Impact Description formulated in the beginning of the technical assistance and update/revised once the technical assistance is fully delivered (a template will be provided) (in English).

Deliverable 1.4 A Closure and Data Collection (CDC) report template and enable the lead implementer to complete. The CDC report will be provided at the end of the assignment and its main aim is two-fold:

1. will be to communicate publicly in one synthesis document a summary of progress made, and lessons learned under the technical assistance (TA) towards the anticipated impact (main template).
2. Compile TA-specific information required for internal use in donor and UN reporting

In addition to the above the project implementation team have also been in touch with all the NDEs . A letter of introduction is annexed in this report.

2.1 Annex 1: Schedule of Implementation Planning and Periodical Reporting Documents as per CTCN Template (Deliverable 1.1)

Annex Schedule of Implementation Planning and Periodical Reporting Documents as per CTCN Template															
Activities		Deliverables		1	2	3	4	5	6	7	8	9	10	11	12
#	Description	Output expected (draft and finals)	Delivery date (DD/MM/YYYY)	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1	All implementers must undertake the following activities at the beginning and at the end of the CTCN technical assistance. Deliverables include:														
1.1	Develop work plan in the form of CTCN response plan template	A detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons and detailed budget to implement the Response Plan (ENG)	**15-Apr-20**	**D1.1**											
1.2	Develop Monitoring and Evaluation Plan	M&E Plan with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation (ENG)	**15-Apr-20**	**D1.2**											
1.3	Develop a two-page CTCN Impact Description to be updated at the end of the project	CTCN Impact Description formulated in the beginning of the technical assistance and update/at the end of the TA (ENG)	**15-Apr-20**	**D1.3**											

1.4	Develop Closure and Data Collection Report completed at the end of the technical assistance (ENG)	Closure and Data Collection Report completed at the end of the technical assistance (ENG)	**30-Mar-21**														D1.4
2	**Mapping the forest supply chain in the selected countries.**																
2.1	i) Mapping actors involved in the supply chain ii) Mapping flows of wood and their wastes iii) Georeferencing of the links where wood waste is generated in the supply chain	D2.1 A report with the collected information that explains how supply chains work and at what points the greatest amount of wood waste is generated (ENG & FR	**30-Jun-20**			**D2.1**											
2.2	Quantification of the waste generated in each site of the supply chain i) Define calculation formulas for the quantification of wood waste in each link of the wood supply chain. ii) Prioritize chain links where there is greater potential to generate bioenergy products by quantity, costs and current uses.	D2.2 A map that presents the geographical location of the hot spots of wood waste generation in the mapped supply chains. (ENG and FR)	**31-Jul-20**				**D2.2**										
2.3	Assess the feasibility of a pilot project: Assessment of wood energy plantations (new forests) to support the sustainability of raw material identified and to increase the conservation potential (show factors such as conditions for access to financing, forest species, land size focus in a medium-size, and others factor related, for a	D2.3 A report about the projects feasibility analysis and the prioritization methodology to select the pilot project. (ENG and FR)	**15-Aug-20**					**D2.3**									

	given country with the best feasibility conditions)														
	Submission of D2.1; D2.2 and 2.3 to CTCN		**31-Aug-20**												
3	**Determine the requirements for and availability of technologies for converting the identified biomass resources**														
3.1	Identify the energy demands by sector for the selected countries and propose in which sectors the forest biomass potential can contribute, considering the current problem of traditional biomass consumption.	A report on the energy demand by sector for the selected countries. (ENG and FR)	31-Aug-20					**D 3.1**							
3.2	For the proposals of point 3.1, determine the most appropriate conversion technologies, including pre-treatments and treatments of biomass to produce the final energy use for each proposed sector.	D3.2 A report on the most appropriate conversion technologies (ENG and FR)	15-Sep-20						**D3.2**						
3.3	In each proposed sector, define the project that best suits the country case study, the budget, the site design, the logistics and biomass suppliers.	D3.3 A report on the identified pilot projects for each sector (ENG and FR)	30-Sep-20						**D3.3**						
	Submission of D3.1; D3.2 and 3.3 to CTCN		**15-Oct-20**												
4	**Sustainability Assessment**														

4.1	Carry out an environmental impact assessment (GHG emissions, consumption of natural resources, extraction forest residues).	Report on the analysis of the environmental factor risks and benefits identified (ENG and FR)	15-Oct-20							D4.1						
4.2	Define the economic (business model, supply chain, funding sources, markets) factors and analyzing them.	Report on the analysis of the economic factor risks and benefits identified (ENG and FR)	30-Oct-20							D4.2						
4.3	Define the social (policies, traditional biomass consumption social drivers, jobs) factors and analyzing them. This activity encloses also a gender mainstreaming analysis by a gender expert.	Report on the analysis of the social factor risks and benefits identified (ENG and FR)	15-Nov-20								D4.3					
	Submission of D4.1; D4.2 and 4.3 to CTCN		**30-Nov-20**													
5	Selection and the implementation of pilot projects (By country or cluster as guided by findings)															
5.1	The information generated in the output 2 will be used to prepare a pilot project in each country tailored to the local conditions based on replicability, engagement with local private sector and bankability noting that the	D5.1 A report with the pilot project selection, including the justification for selection. (ENG and FR)	31-Dec-20									D5.1				

	possibility of merging projects in some of the countries with similar conditions should be taken in due account.													
5.2	The pilot project is elaborated, and its expected impact evaluated . Countries will receive a project concept note that can be shared with financial entities to seek scale-up funding.	D5.2 One concept note for each of the selected countries/cluster, including an evaluation of the expected impacts (ENG)	31-Jan-21										D5.2	
	Submission of D5.1 and 5.2 to CTCN		**15-Feb-21**											
	Workshop to present the result of the technical assistance													
6.1	Organize final workshop with possibility to co-fund this workshop, for example providing in-kind the venue for the project and also some of the services necessary for the meeting advertisement and dissemination. NDEs will help identifying another event in the region to which associate the organization of the final workshop, in order to maximize visibility and increase the potential audience. Private sector representatives should be specifically targeted in order to find opportunities for matchmaking with the pilot projects identified in the TA.	D6.1 A workshop report, it must include material (agenda, concept note, participants list, etc.) and proceedings (final report, presentations delivered, press release, media, etc.). A final report describing the meeting outcomes will be also prepared. (ENG and FR)	28-Feb-21											**D6.1**
	Submission of D6.1 to CTCN		**31-Mar-21**											

2.2 Annex 2: Biomass Energy Conversion Technical Assistance - Monitoring & Evaluation (M&E) Plan and Impact Statement

See attached separately

2.3 Annex 3. Kick-off Meeting Notes

Kick off Meeting Multi-country request # 2019000036 on "technical assistance for a study on forest biomass energy conversion

Meeting/Project Name:	Kick-off meeting : Biomass related TA Multi-country request # 2019000036 on "technical assistance for a study on forest biomass energy conversion"		
Date of Meeting:	Friday, 3rd April 2020	**Time:**	14.00 hrs. NBO time
Meeting Facilitator:	Rajiv Garg Giulia Ferrini	**Location:**	Joint Call Webinar

1. Meeting Objective

To introduce the implementors of the Biomass Technical Assistance to the NDEs and the next steps in the implementation of the TA

2. Attendees

Name	Department/Division	E-mail	Phone
Rajiv Garg	Regional Manager | Climate Technology Centre and Network Economy Division | United Nations Environment Programme (UNEP), Nairobi	gargr@un.org	+254 796182388
Ms. Giulia Ferrini	Associate Programme Officer, Energy and Climate Branch | Economy Division UN Environment, Paris	giulia.ferrini@un.org	+ 33 1 44 37 76 26
Stephen Mutimba	Climate and Energy (C&E) Advisory Limited Nairobi, (Kenya)	stephen.mutimba@eclimateadvisory.com	
Ms. Carole Tankeu	S2 Services, Douala Cameroon	c.tankeu@s2-gmbh.com	+254 717 064 829 +237 670 6138 04
Durando Ndongsok	S2 Services, Douala Cameroon	d.ndongsok@s2-gmbh.com	
Michael Gachanja		gachanja2000@yahoo.com	

Julia Artigas Sancho	Chargée de projets Energie Nitidae, Burkina Faso	j.artigassancho@nitidae.org www.nitidae.org	+226 73 16 83 35 +225 44 50 73 92
Brice BIYO'O BI MBENG	Chef de Bureau Agence Gabonaise de Normalisation B.P: 19 134 Libreville-Gabon	oheme2004@yahoo.fr	
Forghab Patrick Mbomba Ingénieur Général Socioéconomiste (Hors Echelles)	National Observatory on Climate Change (ONACC) Yaoundé, Cameroon	forghabp@yahoo.com	+237 677 615 343 +237 697 117 393
Philippe Kouadio Kumasi	Abidjan (Côte d'Ivoire)	k.kouadio@environnement.gouv.ci	

3. Meeting Agenda		
Topic	**Owner**	**Time**
Introductions and Roll calls	UNIDO-CTCN Team	
CTCN Experience from similar multi country projects – NDE group coordinator.	UNIDO-CTCN Team	
CTCN perspective from the project : Future plan	UNIDO-CTCN Team	
Introduction of the Implementation Organization and its team	C&E and S2	
The Focal points in each country besides the NDEs	NDEs	
The next steps from implementor	C&E and S2	
A WhatsApp Group for NDEs: To be created by CTCN	All	
AOB	All	

2. Attendance			
Present		**Apologies**	
Rajiv Garg	CTCN	Badevokila Joseph	NDE Congo
Ms. Giulia Ferrini	UN Environment	Bernard Ndiaye	NDE Senegal
Stephen Mutimba	C&E		
Ms. Carole Tankeu	S2		
Durando Ndongsok	S2		
Michael Gachanja	C&E		
Julia Artigas Sancho	Nitidae		

Brice BIYO'O BI MBENG	NDE Gabon		
Forghab Patrick Mbomba	NDE Cameroun		
Philippe Kouadio Kumassi	NDE Cote d'Ivoire		
Durando Ndongsok			

Agenda Topics and Discussion	Owner	Time
1-Introductions and Roll calls Inform that for the multi-country request, 2019000036 on "Technical Assistance for a study on forest biomass energy conversion" UNIDO has selected a consortium of Climate and Energy (C&E) Advisory Limited (Kenya) and S2 Services, Cameroon as **project implementers.** Implementation consortium: Mr. **Stephen Mutimba,** all project implementation Director and Mrs. **Carole Tankeu**, project coordinator, will manage the day to day operations of the project. From the CTCN side, Rajiv Garg, Giulia Ferrini and Elizabeth Mwangi should be kept in loop in all important email exchanges. Delay due to COVID-19 and new organization	Rajiv	
CTCN Experience from similar multi country projects : Geothermal project in East Africa. There are several multi-country ongoing projects that the team is learning from. CTCN role: project facilitator Unfortunately, due to COVID crisis, they might be delays, it's important to communicate well with CTCN team. Mails mostly in French but could be in English also if necessary NDEs group coordinator : who could be the NDEs coordinator ?	Giulia	
CTCN perspective from the project : Future plan CTCN want to draw from this study to do a readiness proposal for every country involved. And help them achieve their NDC	Giulia	

Introduction of the Implementation Organization and its team Stephen presented briefly the team Michael will assist Stephen and Carole for East African countries Carole presented the organization (in French) Durando will coordinate Central African region from Douala office Julia will coordinate West African countries from Burkina Faso and will also assist to Spanish translation (for Equatorial Guinea) Consistent approach requested ad quality across regions by Giulia	Stephen Carole	
Introduction of the NDEs NDEs have to be proactive as NDEs are playing a critical role but it's crucial to have also a focal point. It will be important to have a local focal point and NDEs will just coordinate the work. Share the TOR with us, with chronogram, expected results, so that we NDEs know exactly what will be done in the coming months There is already a biomass focal point. (former biomass request) Will you organize meetings (call/workshop) by region ? Do we need Focal Point assistance to ? Each NDE will decide whether it is necessary or not otherwise he could be assisted by a local consultant National and regional workshop were planned. The current global situation due to COVID19 is having some impact on the activities of the CTCN as most of the meetings/workshops/travel are either postponed or cancelled. For now, we will rely on our local contacts and NDEs' contacts to gather data and information.	Rajiv Giulia Patrick (NDE Cameroun) Philip (NDE Cote d'Ivoire) Brice (NDE Gabon) Giulia Carole	
AOB Concerns : only 5 NDEs have responded to email and today only NDEs are on the call, out of 15. What can UNIDO do to make them react ? Good point, but difficult to oblige them to participate. Start to work with those present at the meeting (call)	Carole Rajiv/Giulia	

4. Action Items		
Action	**Owner**	**Due Date**

The Focal points in each country besides the NDEs		
The next steps from implementer : extensive literature review		
A WhatsApp Group for NDEs: To be created by CTCN (in French and has to be to facilitate communication for urgent matter only)		
Documentation : Patrick ask UNIDO team to share chronogram, TOR and all documents available (Implementation plan.)		
Regional Workshop : NDEs are requesting a workshop for each region		
NDEs : to reach other NDEs, maybe we can involve the secretariat of COMIFAC that initiated this TA NDEs have to send name and contact of Focal Point	Rajiv/Giulia	

Date: (MM/DD/YYYY)					
Objective:					

2.4 Annex 4. Letters of Introduction to NDEs

A l'attention de :

1. M. Aminou Raphiou
   Point Focal CTCN
   Direction Nationale des Changements Climatiques
   Ministère de l'Environnement Charge de la Gestion des Changements Climatiques, du Reboisement et de la Protection des Ressources Naturelles et Forestières
   Cotonou (Benin)
   aminou_raphiou@yahoo.fr
   +229 95223 089

2. M. Augustin Ngenzirabona,
   Directeur Général
   Institut Géographique du Burundi
   P.O. Box 34, Gitega 331,
   Bujumbura (Burundi)
   +257 79 43 19 55
   auhungenzi@yahoo.fr

   Focal point
   M. Astere Nindamutsa
   rntiharirizwa@gmail.com
   +257 2240 4810

3. M. Ouedraogo Pamoussa,
   Représentant Directeur Général
   Conservation de la Nature
   3 BP 7044 **Ouagadougou 3, (Burkina Faso)**
   ouedpams@yahoo.fr
   +22 65 03 57 879

4. M. Forghab Patrick Mbomba
   Deputy Managing Director
   National Observatory on Climate Change (ONACC)
   Boulevard du 20 Mai, **Yaoundé (Cameroon)**
   forghabp@yahoo.com;
   +237 677 615 343 / +237 697 117 393/ +237 222 209 504

5. M. Maxime Thierry Dongbada-Tambano,
   Coordonnateur du projet d'Evaluation des Besoins Technologiques - Focal point
   Ministre de l'Environnement, de l'Ecologie et du Développement Durable
   Bangui, République de Centrafrique
   dongbada2001@yahoo.fr
   +236 75 54 56 74, +236 7226 1179
6. M. Mahamat Hassane Idriss
   Point Focal
   Direction des Ressources en Eau et de la Météorologie, Centre et Réseau des Technologies Climatiques pour le compte du Tchad
   Ministère de l'environnement et des ressources halieutiques
   BP 2115, **Ndjaména, (Tchad)**
   mhi1962@yahoo.fr
   +235 66 21 93 40, +235 99 95 11 26

7. M. Joseph Badevokila
   Point Focal
   Ministère du Tourisme et de l'Environnement, Ministère de la Recherche Scientifique et de l'Innovation
   Tour Nabemba, 11e etage, Brazzaville, Congo; BP 2499 **Brazzaville, (Congo)**
   badevokila@gmail.com; endcongo@gmail.com
   +242 06 604 32 37

   Point Focal

   M. Andre Mfoukou Tsakala
   andremfoukou@yahoo.fr
   +242 05 549 07 20

8. M. Philippe Kouadio Kumasi
   Sustainable Environment and Energy Development Consulting Center
   Abidjan (Côte d'Ivoire)

   k.kouadio@environnement.gouv.ci;
   +225 0792 4334, +225 4030 9950

9. M. Idriss Ismael Nour
Directeur Adjoint de l'Environnement – Point Focal
Direction de l'Aménagement du Territoire et de l'Environnement
Djibouti City (Djibouti)
distri_play@yahoo.fr
+253 77 84 95 04

10. M. Santiago Francisco Engonga Osono,
Directeur Général de l'Environnement - Focal point
Direction Générale de l'Environnement, Ministère de la Pêche et de l'Environnement
Malabo II, Malabo, Bioko-Norte, Equatorial Guinea
engongaosono@yahoo.fr
+240 222 273 970, +240 222 221 835

11. M. Bernard Ndaye Nkanka,
Professor and Chief, Section Electricité – Point Focal
Centre d'Études et de Recherches sur les Énergies Renouvelables kitsisa de L'institut Supérieur des Techniques Appliquées-ISTA
Avenue Kabasele Joseph Proche de l'Aéroport National de NDOLO, Barumbu – **Kinshasa (RDC)**
ndaye.nkanka@ista.ac.cd
+243 89891 7700

Point Focal
M. Bienvenu Mupenda Kitenge,
Expert, Direction de Développement Durable
bienvenumupkit@gmail.com
+243 817252180

12. M. Brice BIYO'O BI MBENG
Chef de Bureau Agence Gabonaise de Normalisation
B.P: 19 134 **Libreville (Gabon)**
oheme2004@yahoo.fr;

Point Focal
M. Nestor Mintsa, Director
mintsanestor@yahoo.fr
Mme Ornela Chéryle Mathangoye
ornmath@yahoo.fr

13. M. Birama Diarra,
Directeur des Applications Météorologiques et climatologiques – Point Focal
L'Agence Nationale de la Météorologie
Route Aéroport Bamako Senou, Bp 237, **Bamako, (Mali)**
biramadia@yahoo.fr, biramadia@gmail.com
+22376103428, +22320206204

14. M. Issakha Youm

Centre d'Etudes et de Recherches sur les Energies Renouvelables - Focal point
Route du Service Géographique (HB-87) X Rue HB-478, Hann Bel-Air. B.P. 476,
Dakar, (Sénégal)
iyoum2@yahoo.fr
+221 3 38 25 04 43

15. Mme Mery Yaou
Chef de cellule planification - Focal point
Direction de l'Environnement / Ministère de l'Environnement et des Ressources Forestières
BP 4825, **Lomé, (Togo)**
denv_togo@yahoo.fr, ymery69@yahoo.fr
+228 22 21 33 21, fax: +228 22210333

« Assistance Technique pour une Etude sur la Conversion Energétique de la Biomasse Forestière » - multi-pays #2019000036

Chers ENDs,

J'espère que vous allez bien malgré la crise sanitaire actuelle.

Faisant suite à la réunion de démarrage du 3 Avril 2020 (dont le compte-rendu est ci-joint) relative à l'Assistance Technique- Projet Biomasse Energie, nous vous informons que pour la requête multi-pays #2019000036, l'**ONUDI** a sélectionné le consortium Climate and Energy (C&E) Advisory Limited (Kenya) et S2 Services (Cameroun) comme exécutants du projet.

Du côté du **CTCN**, Rajiv Garg, Giulia Ferrini et Elizabeth Mwangi, en tant que facilitateurs du projet, doivent être tenus informés de tous les échanges de courriels importants.

Aussi, nous avons le plaisir de vous présenter ci-après l'organisation de l'équipe pluridisciplinaire d'experts qui seront dorénavant vos interlocuteurs privilégiés.

Le Consortium d'exécutants est représenté par **M. Stephen Mutimba** (C&E), Directeur du projet et Mme **Carole Tankeu** (S2), Coordinatrice du projet. Elle va gérer les opérations du projet au quotidien.

Le tableau ci-dessous présente un résumé de la gestion de projet ainsi que l'équipe technique :

Nom des experts et spécialisation	Rôle & Responsabilités
1. **Stephen Mutimba** (C&E) est expert en foresterie (Economie & Changement Climatique)	Directeur du projet, Communication et gestion du client ; Supervision globale du projet
2. **Carole Tankeu** (S2) environnementaliste urbain, spécialiste genre et énergie.	Coordinatrice du projet ; Elle va gérer les opérations du projet au quotidien.
3. **Durando Ndongsok** (S2), Ingénieur en Environnement (Gestion des ressources et Environnement),	Il va coordonner les activités de la région Afrique Centrale depuis le bureau de Douala (Cameroun).
4. **Julia Artigas Sancho** (Nitidae), Expert en Bio Energie	Elle va coordonner les activités de la région Afrique de l'Ouest depuis le bureau de Bobo Dioulasso (Burkina Faso) et va aussi contribuer à la traduction en Espagnol (pour la Guinée Equatoriale).
5. Michael **Gachanga** (C&E), spécialiste en écologie des forêts	Il va coordonner les pays de l'Afrique de l'Est (Burundi et Djibouti) depuis le bureau de Nairobi (Kenya)
Par ailleurs, l'équipe d'experts est composée de :	
6. **Dr Dorothe Nje Yong**, experte en Economie de la Foresterie et Bio Energie basée à Ottawa (Canada).	Analyse économique, des risques et avantages des résidus de bois, quantification des déchets des diverses chaînes d'approvisionnement en bois
7. **Nestor Guambe,** Agronome, expert de la chaîne d'approvisionnement de la biomasse agricole basé à Yaoundé (Cameroun)	Collecte et gestion des données et aide à l'évaluation de la faisabilité des projets pilotes
8. **Nguepkap Lemegne Alex,** Géographe (Planification et Environnement), Expert en SIG basé à Douala (Cameroun)	Cartographie la chaîne d'approvisionnement forestière dans les pays sélectionnés d'Afrique centrale, les principaux acteurs impliqués dans la chaîne d'approvisionnement et les flux de bois et leurs déchets

Cette mission prévoit une étroite collaboration avec vous. **A cet effet, nous vous prions de nous communiquer vos contacts téléphoniques ainsi que le contact d'un point focal qui vous assistera dans vos activités.**

La langue de travail sera le français. Par contre, veuillez noter que Stephen et Michael ne sont pas bilingues raison pour laquelle les échanges les concernant seront en anglais.

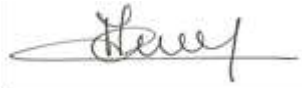
Je reste disponible pour de plus amples informations ou clarifications.

Dans l'attente,

Je vous remercie d’avance pour votre coopération en vous souhaitant bonne réception.

Cordialement,

Signature:



(Authorized Representative)

	Carole Tankeu
Full name:	**Stephen Ndore Mutimba**
Designation:	**Managing Director**
Address:	**Climate and Energy Advisory Ltd**
Contact information (phone and e-mail):	**Tel: +254 20 3882128/29/31 or +254 20 235 6978** **Mobile: +274 722 721 680** stephen.mutimba@eclimateadvisory.com