



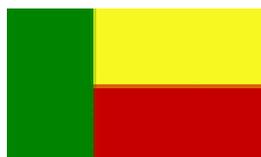
Capacity Building Workshop on Bioenergy Service Delivery: Training on the ECOWAS Integrated Biogas System

Centre Songhai, Porto Novo, Benin

17 – 28 June 2019

Concept note and Agenda

Supported by:



**The Capacity Building Activity will enhance the implementation of ECOWAS
Bioenergy Policy & and the West Africa Clean Cooking Alliance (WACCA)
Regional Action Plan**

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**2012 INTERNATIONAL YEAR OF
SUSTAINABLE ENERGY
FOR ALL**

1. Background

The majority of the people in the ECOWAS region still rely on solid biomass as their primary cooking fuel, often used in a traditional and unsustainable manner. In several countries in the region, biomass based fuels (wood fuel and charcoal) represent more than 90% of the household energy needs especially in rural and peri-urban areas. Due to inefficient utilization in cooking devices, it poses a serious threat to health of people especially women and children and contributes to depletion of forests.

There is ample evidence pointing to high emission of greenhouse gases (GHGs) by direct combustion of the solid wood, the demand of which is increasingly growing as a result of rapid urbanization (especially in the sub-Saharan Africa) and increase costs of LPG and other fossil fuel alternatives. The consequences are the rapid deforestation, leading to desertification and other adverse effects on both local and global environments. In the ECOWAS region, the rate of deforestation and forest degradation has assumed an alarming proportion and many reasons have been assigned to this trend of practice:

1. Lack of adequate policy frameworks to manage the forests and wood industry sector;
2. Lack of information and knowledge on efficient and sustainable Biomass management and utilization particularly in:
 - a. sustainable management and production of biomass resources in the ECOWAS region;
 - b. efficient utilization of biomass for energy generation (cooking, heating and power generation)
 - c. The food-energy-water nexus in sustainable production and utilization of biomass resources while enhancing agricultural productivity;
3. Rapid urbanization that has characterized many sub-Saharan African countries as a result of rural-urban migration;
4. Rapid population growth and the quest to meet domestic energy needs (e.g. Over 80% of the people in the region rely on solid biomass for heating and cooking)

To address the sustainable management and utilization of Biomass resources, including bio-waste such as animal and abattoir waste, this training activity has been designed for stakeholders in the ECOWAS region. This activity is in-line with the ECOWAS Bioenergy Policy and Implementation Plan approved by the ECOWAS Heads of State and Government in June 2017. The activity will support sustainable biomass management (REDD+) and the WACCA program. It will enable the proper management of waste for the environment, produce gas that is clean and efficient for energy purposes that would be emitted into the atmosphere with the greatest global warming potential. As a clean burning fuel that is healthier, the residue can be used in the agricultural fields to enhance productivity.

The activity will be conducted in a form of training at the Centre Songhai in Porto Novo, Benin from the 17 – 28 June 2019.

2. Rationale for the activity

The ECOWAS region is characterized by low access to skills and technical capacity for many of its stakeholders in the Bioenergy sector. If the ECOWAS Bioenergy Policy is to be implemented successfully to achieve the targets set in the policy document, stakeholders across the entire value chain would have to be adequately trained to take the challenges of providing sustainable Bioenergy Services to the Populations.

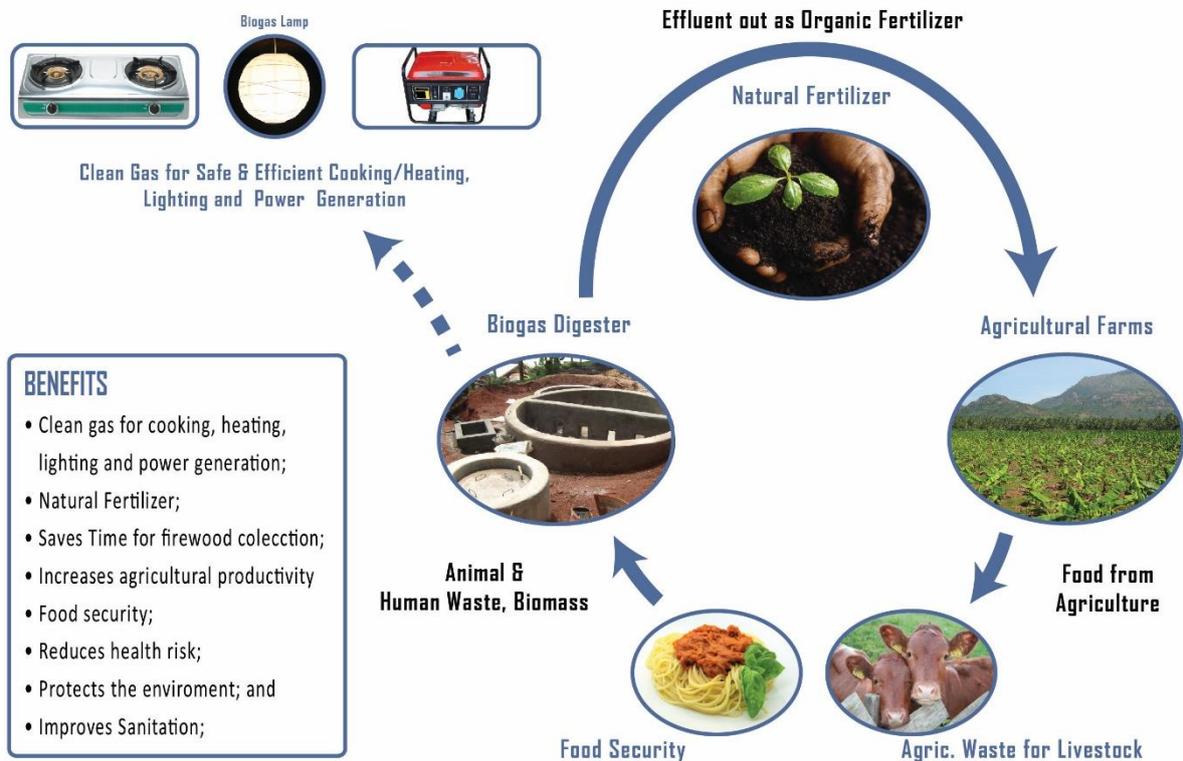
The Region has appreciable amount of Biomass resources, including bio-waste. This notwithstanding, people continue to depend on the forests for their livelihoods and in most of the time, without consideration of the adverse long term consequences on the environment. In most instances, the rest of the biomass resources in the form of waste or residue are never used or considered due to lack of knowledge and information. Yet the bio-waste could contribute to providing bioenergy for cooking, heating and power generation and thereby lead to the utilization of more biomass resources that can significantly contribute to stem deforestation and natural resources and environmental degradation. The bio-waste resources in the ECOWAS Region include agricultural and industrial waste, municipal liquid and solid waste, animal and abattoir waste.

This year's training will focus on the ECOWAS Integrated Biogas Program, which is a 'system' or circular economy, where the bio-waste from animal and abattoir is used for energy generation for a cleaner and healthier environment and energy. It helps improve the environment and the agricultural sector with the residue that is natural manure to increase productivity.

The ECOWAS Bioenergy Program has among the activities, capacity building with the aim to:

- Increasing awareness among high-level actors in agriculture and energy;
- Reinforcing existing institutional and human structures;
- Providing professional and on the job training;
- Transferring knowledge and promoting innovation and technology across all levels of production; and
- development of job training and professional profiles , including on existing sustainable bioenergy tools.

ECOWAS INTEGRATED BIOGAS PROGRAMME



ECOWAS Integrated Biogas Program (System)

3. Objectives

The overall objective of these activities is to undertake training activities on various topics on the ECOWAS Integrated Biogas System for the private sector actors/NGOs in the field of biogas promotion and development.

The specific objective of this activity is to build peoples capacities:

- On better information on sustainable management and utilization of biomass resources by providing them with specific guides and practical examples.
- Sensitize and create aware on the menace of the current unsustainable and tradition use of biomass resources, typically wood energy and charcoal and its negative consequences on health, deforestation and ecological degradation particularly for the stakeholders from the local communities where charcoal production and firewood cutting are seen as economic livelihood;
- Train participants on the ECOWAS Integrated Biogas System, that is a circular economy principle for enhancing the environment, energy access, health and agricultural productivity.
- Train participants on the setting up of bankable integrated biogas system projects and their business models;
- Building a biogas digester in the field to master the art;

- Discuss planning tools for sustainable Biogas projects.

4. Expected outcome/deliverables

- Participants are sensitized, and capacities enhanced on the modern and appropriate sustainable Biomass management and utilization;
- Information on the ECOWAS Integrated Biogas System are disseminated.
- Practical training on activities for the biogas technology from bio-waste resources for energy management and sustainable biomass energy production and utilization and related benefits are enhanced.
- Planning tools on sustainable planning for biogas projects are shared with participants.

5. Participants/Target group

The target group for the training activity (and sensitization) is private sector/NGOs and Civil Society from the ECOWAS member states.

Agenda

TIME	ACTIVITIES
DAY 1 (MONDAY)	
08:30 – 09:00	Introduction of participants
09:00 – 09:30	Opening Session <ul style="list-style-type: none"> - Welcome Remarks by Centre Songhai - Keynote Speech by Mr. Mahama Kappiah - Opening Remarks by Ministry of Energy Benin
09:30 – 10:00	Introduction to the Workshop – Mr. Bah F. M. Saho, ECREEE
10:30 – 11:00	Tea break and Photograph
11:00 - 11:30	ECOWAS Bioenergy Policy and how it can accelerate access to sustainable energy through the ECOWAS Integrated Biogas System
11:30 – 12:30	Introduction to Biomass Resources and its utilization. Introduction to sustainable utilization of biomass, including bio-waste
12:30 - 13:30	Lunch break
13:30 - 16:00	Understanding the sustainable Bioenergy pathways <ul style="list-style-type: none"> - Gasification (Biogas, pyrolytic process) - Densification: Briquettes/pellets - Biochar systems - Biofuels (Bioethanol and biodiesel)
16:00 – 16:30	Refreshment Break
17:00 – 18:00	Understanding the sustainable Biogas pathways: (Contd) <ul style="list-style-type: none"> - Efficient cooking - Power generation - heating
DAY 2 (TUESDAY)	
09:00 - 10:30	ECOWAS Integrated Biogas System (EIBS): <ul style="list-style-type: none"> - Biogas production and the processes for sustainable production mechanisms - Different types of digesters
10.30 - 11.00	Refreshment break
11:00 - 12:30	

	The bio-waste resource as the feedstock: Sizing the system
12:30 - 13:30	Lunch break
13:30 - 16:00	Elements of the digester and construction
16:00 - 16:30	Refreshment Break
17:00 - 18:00	Elements of a feedstock
DAY 3 (WEDNESDAY)	
09:00 - 10:30	Construction tools and materials/demonstration work
10.30 - 11.00	Tea break
11:00 - 12:30	Demonstration in the field (feedstock review)
12:30 - 13:30	Lunch break
13:30 - 16:00	Construction in the field at Songhai
16:00 - 16:30	Refreshment Break
17:00 - 18:00	Field work (connections and accessories)
DAY 4 (THURSDAY)	
09:00 - 10:30	Field work (connection to services: cooking/heating)
10.30 - 11.00	Tea break
11:00 - 12:30	Field work (connection to services: power generation)
12:30 - 13:30	Lunch break
13:30 - 16:00	Field work (connection to services: Contd)
16:00 - 16:30	Refreshment Break
17:00 - 17:30	Field work (connection to services: contd)
DAY 5 (FRIDAY) 09:00 - 17:00	Individual/group construction in the field
DAY 6	Individual/group construction in the field at Savalou

(SATURDAY)	
Sunday Break for church services and other personal requirements	
Week 2 DAY 7 (MONDAY)	Individual/group construction in the field at Savalou
DAY 8 (TUESDAY)	Individual/group construction in the field at Savalou
DAY 9 (WEDNESDAY)	Individual/group construction in the field at Savalou
DAY 10 (THURSDAY)	Individual/group construction in the field at Savalou
DAY 11 (FRIDAY) (0900 - 1230)	Operation on the digester
DAY 11 (FRIDAY) 1430 - 1630	Wrap up and closing