

Working Group on Capacity Building for Sustainable Development
Project Proposal for consideration during the November 2011 Tokyo meetings

Activity: West African Regional Forum on Sustainable Modern Bioenergy

Current Members of the Activity Group: Brazil, ECOWAS, FAO, Ghana, Sweden, UNEP, UN Foundation, and the United States

Problem and Need Addressed:

The energy system of many developing countries faces interrelated challenges of energy access, energy security, and climate change mitigation and adaptation. Principal among the challenges of energy access is the widespread unsustainable utilization of diminishing wood resources for fuel and charcoal. Usually, wood resources are harvested from natural forests because they are considered "free" for all to use. This over-dependence of the populations on natural forests has contributed to deforestation and desertification. In West Africa, almost 80% of the total energy consumption of the region comes from the traditional use of biomass. In addition, over 90% of the population use wood and charcoal for domestic cooking. The consequence of the unsustainable and inefficient utilization of wood resources is contributing to the destruction of the natural forest, smoke-related health problems, and overall environmental challenges within the West African region.

In order to meet the challenges of providing renewable energy and energy efficient services, including modern bioenergy, in a sustainable and efficient manner, countries and communities should seek to develop and promote clean energy supply options and increased demand and supply side efficiencies. As biomass energy resources in the form of fuel-wood and charcoal constitute the highest energy demand, the efficient production and utilization of these resources, coupled with providing information on efficient alternative fuels and cookstoves, among other intervention strategies, is one of the priority areas of the work program for this activity.

West African Regional Forum on Sustainable Modern Bioenergy:

In order to develop a framework conducive to broaden and accelerate the development of deployment of sustainable modern bioenergy, it is important to build consensus among the various segments of society within the countries in the ECOWAS region, namely policy makers, officials, private sector individuals, civil society representatives, and the general public. Since bioenergy is a multi-sectoral issue, it requires the involvement and cooperation of officials from the Ministries of Energy, Agriculture, Forestry, and Environment. The officials from these institutions participating in the forum will improve their capacity to address the production and use of sustainable modern bioenergy.

Around 60-70 officials from ECOWAS member states and personnel from ECREEE will participate in the regional forum. GBEP and ECREEE will encourage a gender balance in the representation. The forum will present the opportunities and challenges of developing sustainable modern bioenergy, with a particularly focus on transitioning away from the traditional, unsustainable use of biomass to modern biomass through sustainable forest management practices, improving agricultural productivity through infrastructure investments, and enhancing food and energy security and access through

developing a sustainable modern bioenergy sector. Participants will also learn about the indicators developed by GBEP to measure the effect of modern bioenergy in meeting nationally-determined goals of sustainable development.

The Capacity Building Activity Group seeks to plan and implement a regional forum in West Africa during the first quarter of 2012, tentatively in Bamako, Mali, to engage and educate policy makers and stakeholders from the 15 Member States of ECOWAS about the benefits and challenges of modern bioenergy. The regional forum will be co-organized by ECOWAS/ECREEE¹, with participation by U.S. officials and experts and potential participation by FAO, the UN Foundation, UNEP, Brazil, and Sweden.

Goals and Outcomes:

1. Promote the view that bioenergy is neither inherently bad nor automatically good, but the rational and well-thought-out implementation of sustainable modern bioenergy can promote food and energy security and enhance rural development to alleviate poverty.
2. Educate policy makers and stakeholders as to the purpose and utility of the indicators of sustainable bioenergy production and use, particularly with the view towards implementing sustainable forest management practices, improving agricultural productivity and feedstock conversion, and enhancing food and energy security.

¹ The ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) was established by the ECOWAS Commission in Praia, Cape Verde in November 2009. The Vision of ECREEE is to improve energy security, increase access to modern energy services and support the region's economic and social development in an environmentally sustainable manner through the promotion and use of renewable energy and energy efficient technologies in ECOWAS member states.

***Second activity in fall 2012:
ECOWAS-GBEP workshop on Bioenergy Resource Assessment***

Purpose

The ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) and the Global Bioenergy Partnership (GBEP) co-organized the ECOWAS Regional Bioenergy Forum held in Bamako, Mali from March 19 - 21, 2012 in order to catalyze the development of a Regional Bioenergy Strategy. The ECOWAS country delegates identified Biomass Resource Assessment as an essential first step to developing a Regional Strategy and national strategies. The proposed follow-up ECOWAS-GBEP workshop will bring together regional and international experts on Biomass Resource Assessment with two ECOWAS representatives from each country's relevant ministries for the purpose of reviewing what is known about West African biomass resources and establishing clear paths forward for the creation of a detailed ECOWAS Biomass Resource Assessment.

In many developing countries biomass resource assessments and land use mapping have not yet been carried out. These assessments are necessary to enable a science-based understanding of a given country's bioenergy potential. Data gaps and institutional capacity are among the key barriers to conducting these assessments. Country-level assessments of bioenergy production capacity begin with an assessment of suitable and available land. Assessing land suitability allows matching potential bioenergy crops with agro-climatic conditions. Assessing available land takes into consideration land use requirements for other purposes, including food production, cultural use, biodiversity sustaining related ecosystem services and carbon storage, as well as infrastructure, land tenure and other issues reflected in the GBEP indicators. Country-level assessments also consider agricultural waste and residue availability and their suitability for bioenergy production.

An important tool in these assessments is Geospatial Information Systems (GIS) mapping of resources. This top-down assessment would eventually have to be complemented by ground measurements through field assessments of identified sites involving the relevant stakeholders. Key factors in a resource assessment are the sustainability of management practices and agricultural productivity. Resource assessments are also opportunities to gauge the availability of biomass for home cooking and heating and to identify priority areas for implementing improved cookstoves programs and modern bioenergy services. FAO and UNEP have highlighted key elements of such resource assessment in the Bioenergy Decision Support Tool, prepared under the framework of UN Energy. In several countries mapping has been carried out, and lessons learned from these experiences will be extracted and shared, with the aim of deriving a common methodological framework.

GBEP will work with U.S., Brazilian and other experts who have conducted assessments of biomass potential under a range of economic and sustainability scenarios, and these methodologies and tools will be shared with developing country scientists and policymakers on the working level to identify opportunities and avoid risks around bioenergy production.

Workshop overview

In order to promote the effective and efficient planning of bioenergy production and use in the West Africa, biomass resource assessments are critical. The resource assessments should be broad in their approach and cover natural resources such as land use, soil and

water, environment and ecological systems, climate and weather characteristics. The potential for waste and residue streams to be sources of biomass should be assessed. In addition, these biophysical characteristics should be considered with socio-economic information such as population demographics and infrastructure. The assessment results should translate into agro-ecological, socio-economic zoning maps that indicate areas suitable and available for bioenergy development and specify the relevant feedstock options. The mapping should also indicate the areas currently used for different types of agricultural production.

In order to promote biomass resource mapping in West Africa this workshop will include discussions of the following technical topics:

1. Methodological framework for resources assessment and mapping for the following:
 - Environmental resources including land, water, soil quality and biodiversity and existing land use;
 - Social resources such as human capital including training in agriculture and current feedstock production levels;
 - Economic resources such as transportation infrastructure;
 - Calculations of total available biomass including biomass streams from plantation agriculture, animal wastes and municipal solid wastes; and
 - Potential impacts of climate change and predicted weather scenarios
2. Cataloguing experiences relating to:
 - Biomass and natural resource potential uses and threats;
 - Socio-economic context evaluation;
 - Existing resource maps; and
 - Methods for the allocation and tenure of land.

Background materials available comprise:

- UN Energy Bioenergy Decision Support Tool, prepared by FAO and UNEP, particularly

Module 5: Land Resources

- Results of a Mapping Workshop held at UNEP HQ, Nairobi/Kenya in 2010