



## **ECOWAS REGIONAL BIOENERGY FORUM**

### **Forum Report**

In an effort to develop a Regional Bioenergy Strategy, 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 to 21, 2012. This event was supported by the Governments of Brazil, Canada, Mali and the United States of America, as well as the United Nations Development Programme Regional Energy Programme for Poverty Reduction (UNDP/PREP), the United Nations Environment Programme (UNEP), the Global Alliance of Clean Cookstoves, and the UN Foundation.

The primary objectives of the Forum were to:

1. promote the transition from the traditional use of biomass towards a modern, efficient production and use of modern bioenergy;
2. initiate the dialogue and exchange of experience to support the development of bioenergy strategies in the Member States of ECOWAS and,
3. promote regional policy planning for bioenergy.

The forum was used as a discussion platform to:

1. sensitize and share experience with participants on modern sustainable bioenergy production that also promotes food security;
2. present the GBEP Sustainability Indicators for Bioenergy, as well as the Decision Support Tool (DST) for Sustainable Bioenergy jointly developed by UNEP and FAO, and the; and
3. discuss and adopt a Regional Strategy Framework for bioenergy development in the ECOWAS region.

The Forum brought together representatives of the Ministries of Energy, Agriculture, and Environment of the ECOWAS Member States, Government agencies, Partners and Observers from the Global Bioenergy Partnership, regional and international organisations, academia, business and industry, civil society and financial institutions active in the field of Bioenergy. The delegates and partners discussed and adopted a Regional Bioenergy Strategy Framework at the end of the Forum.

The Forum initiated a regional dialogue and peer-to-peer learning to support ECOWAS Member States in developing regional and national bioenergy strategies, which will help meet energy needs and create a vibrant and sustainable modern bioenergy sector that promotes economic growth, rural development, and poverty alleviation.



It presented new methods and information developed by GBEP Partners and Observers on assessing the economic, environmental and social benefits and challenges of modern bioenergy. The Forum placed a particular emphasis on the means to promote simultaneously food and energy security and on the possibility of alleviating the negative health and environmental effects that derive from the use of traditional biomass fuelwood for cooking. To this end, it provided concrete examples of success stories from Africa and presented policy tools from UNEP, FAO and the Global Bioenergy Partnership that can be used to promote the creation of a sustainable bioenergy sector to drive economic growth without harming, and possibly improving, environmental and social conditions.

Opening the forum on Monday 19th March 2012, the Honourable Habib Ouane, Minister of Mines, Energy and Water Resources of Mali, remarked that the high population growth rate of Member States is among the challenges to meeting the region's energy demand with serious health consequences and therefore stressed the need to change the energy approach and initiate immediately an energy transition to more sustainable and environmentally benign approaches. He therefore urged Member States to take adequate steps to address the challenges through appropriate policies within the framework of the ECOWAS White Paper to promote the region's economic development.

Earlier, Mr. Ebrima Njie, the Commissioner for Infrastructure at the ECOWAS Commission addressed the Forum during the Opening Session and noted that the region continues to face major challenges in the sustainable supply of energy services despite its significant bioenergy resources. He pointed out how the region has one of the lowest access rates to modern energy services, and how this inhibits the prospects for developing economic activities, enhancing food security and reducing poverty. According to official statistics, 70 per cent of the region's overall energy demand comes from traditional biomass of wood and inefficiently produced charcoal, posing negatives effects on the environment, ecosystems and health of women and children, he added.

Mr. Emerson Kloss, Division Head of the Brazilian Ministry of External Relations, commented: "Brazil, as GBEP Co-Chair, is very pleased with the vivid exchange of experiences among ECOWAS countries in the implementation of bioenergy programmes and with the potential of the region to use bioenergy as a tool for sustainable development." He also pointed out that Brazil will continue to support GBEP and in particular the current capacity-building activities within the partnership.

Mr. Raffi Balian, Senior Advisor for Bioenergy and Renewable Energy at the United States Department of State, stated, "I am extremely pleased by the enthusiastic participation and engagement of all fifteen ECOWAS countries, regional stakeholders, GBEP Partners and Observers, and the international community." He stressed, "We had positive discussions on a number of important issues, including the need for clean cooking fuel and the importance of energy access for economic development, poverty alleviation, and food security."

Deliberations at the Forum are summarized in the following salient observations:



The Forum initiated the discussions focusing on some critical issues in the current use of traditional biomass with severe consequences on health and environment, conditions and prospects for development toward the market-based bioenergy transformation involving the private sector, and potentials pathways to development of modern Bioenergy were especially highlighted within the region. Despite experiences gained relating to liquid (biofuels), solid (wood and charcoal, biochar) and gaseous bioenergy (biogas), constraints remain in technological knowledge, low investments and financing, competition in land use, lack of appropriate policies and lack of knowledge in sharing sustainable management tools that could lead the region to adopting market-based approaches. These issues were highlighted by the contributions of the representatives of ECREEE, ENDA-TM, UNDP and of delegates from Togo and Guinea, who provided presentations on these topics.

Experiences in developing a policy framework drawn from national policy and strategy documents for biofuel within the region were presented by delegates of Mali, Sierra Leone and Ghana, in addition to those presented by UEMOA and Brazil.

A session was devoted to the relationship between the production of bioenergy and food security and provided presentations on the FAO approach to sustainable bioenergy, the Nigerian experience on the Sweet Sorghum-to-Ethanol Initiative, the ROPPA report on a fact-finding mission based on Brazilian experience in the field of biofuels with regard to the family farm and food security, the Makeni Ethanol and Power project and the Mali Biocarburant's experience in biofuel production and food security in Mali. This session reviewed the methodologies based on the compilation of good practices and proposed measures to promote business plans taking into account the economic, social and environmental aspects. Analysis of the impacts to policy response (BEFSCI) through the identification of sustainability indicators (GBEP) and all the tools are presented on the basis of risk analysis associated with the three pillars: economic, environmental and social. The session was concluded with a message: **"There is no good quality or bad quality of bioenergy, it all depends on the production conditions"** and made the following recommendations:

- increase awareness of the advantages of the Brazilian policy foundations at regional level;
- promote a value chain approach in the bioenergy sectors;
- adopt a clear regional vision in articulating an ECOWAS Bioenergy strategy on the issues of agriculture and food security;
- encourage the promotion of bioenergy in a way that promotes sustainable development; and
- integrate small-scale farmers into the policies of bioenergy development.

On meeting the demand on bioenergy with the use of effective and sustainable fuels, a following session focused on the Global Alliance for Clean Cookstoves programme, on the studies carried on by KNUST on soil enrichment derived from pyrolysis and biochar and on the ProCEAO clean cooking stove project. The discussion focused on how to intensify the dissemination of improved stoves and fuels, what lessons have been learned from the multitude of projects for dissemination of these stoves for more than 40 years and if it is necessary to continue with the dissemination of these stoves or should the focus be on alternative fuels to wood.



A session on bioenergy supply options focused on efficient management and production systems by providing experiences in the sustainable and participatory forest management, discussing the issue of production standards to ensure the sustainability, the taxation of forest products and the transfer of appropriate technology. The presentations included: GIZ and EUEI PDF initiative on Biomass Energy Strategy (BEST); biogas as an all-purpose, scale-to-fit bioenergy source by USDA (the US Department of Agriculture); sustainable supply of wood in rural areas and techniques for efficient production of bio-charcoal in the Sahel region by PREDAS; and making charcoal production in Sub-Sahara Africa sustainable by the Netherlands Sustainable Biomass Programmes. The session highlighted how to make sustainable charcoal production with the possibility to:

- review the basic steps in order to have a successful project with stakeholder involvement and team formations;
- develop baseline sector analysis and scenarios; BEST strategies, action planning; adoption and implementation;
- urgently work on the extension of biogas programs to meet the cooking energy needs and contribute to food security through the use of bio-fertilizer to improve crop yields; and
- enhance the production of bio-charcoal by the valuation of agricultural by-products.

Three sessions of the Forum were devoted to policy tools for Bioenergy. The first two focused on the Decision Support Tool (DST) of UN-Energy/UNEP/FAO focusing mainly on the mapping of potentials for biofuels production, taking into account the criteria on agro-climatic and socio-economic situations. The tool is utilized through the application of overlaying maps in order to be able to quantify the areas used for production of specific biofuels. The decision-making tool considers the utilization of land and other resources taking into consideration the use of water, biodiversity/eco-sensitive sites already identified or classified.

The third session on bioenergy policy tools presented the GBEP Sustainability Indicators for bioenergy production and use and focused on the relevance of sustainability taking into account environment, economic and social considerations to guide the planning and evaluation of bioenergy projects. Key challenges identified during the Forum on the implementation of these indicators include availability of data, quantification of certain criteria and knowledge/understanding of the indicators. For enhancing implementation of the indicators it was recommended, that countries should take ownership and implement them through their centres of excellence on bioenergy.

The creation of a sustainable, dynamic bioenergy sector in the region was the main theme of a successive session where interventions focused on sharing experiences on (i) Regional Potential Assessment of Novel Bio-energy Crops in the ECOWAS countries by QUINVITA co-funded by ECREEE/UNIDO and IIBN; (ii) drivers for Bioenergy market development by African Centre for Technology Studies; (iii) the Importance of a Bioenergy Policy Framework by GBEP; (iv) expansion of Clean-Star cooking solution to other cities in Sub-Saharan Africa by CLEAN STAR; and successful financing for rural smallholders by BIOVIVO Sarl.



The Forum contributed to building consensus among the various segments of society in ECOWAS member states, namely policy makers and officials from the Ministries of Energy, Agriculture and Environment, private sector individuals, civil society representatives, and the general public, and led to the development of a Regional Bioenergy Strategy framework to broaden and accelerate the development and deployment of sustainable modern Bioenergy.

The Regional Bioenergy Strategy Framework seeks to enable and promote domestic and foreign investments that help address energy poverty prevailing in the region both in rural and peri-urban populations, without compromising food security and environment. In the implementation of this Strategy Framework, consideration should be given to local production of components/devices and fuels to spur local socio-economic development through creation of added value, employment, alongside food and energy security.

The development of a Regional Strategy for the ECOWAS Region therefore would be based on the following key components:

1. Resource Assessment and Planning
2. Policies and Strategies
3. Knowledge sharing
4. Capacity building
5. Financing mechanisms and resource mobilization

## **1. Resource Assessment and Planning**

For an effective and efficient planning of bioenergy production and use in the region, resource assessments are critical. The resource assessments should cover natural resources such as land use, soil and water, environment and ecological systems, climate and weather characteristics. Also waste and residue streams should be assessed. In addition, this should be considered with other relevant information such as demographic distribution and infrastructure. The result should translate into agro-ecological zoning indicating areas suitable and available for bioenergy development, indicating feedstock options. Components should include:

- a. Resources assessment and mapping, based on a methodological framework that covers:
  - resource inventory;
  - climatic and weather scenarios; and
  - resource availability and utilization such as land, water and other environment considerations;
- b. Catalogue experiences relating to:
  - resource potential uses and threats, e.g. Climate Change Adaptation needs;
  - socio-economic context evaluation; and
  - rapid assessment methodologies; and



- c. complemented by assessment and sharing of experiences, and an inventory of existing maps.

## 2. Policies and Strategies

Policy and regulatory frameworks on Bioenergy have to be developed and adopted by the member states (including targets, regulations, codes and quality standards). This should include regional and national policies and legislations and national/regional targets for Bioenergy services penetration, incentives for their widespread adoption and implementation. In the development of this activity, the following key activities are important for consideration:

- establish a vision (political will- created from the bottom up is critical to sustain a long term vision) on bioenergy as part of a sustainable development strategy;
- ensure policy coherence with other sectorial policies (consultation through inter-ministerial task teams and regulatory processes);
- capitalize on experiences in region and rest of the world;
- define political principles, based on subsidiarity between countries in the region; and
- coordination of implementation strategy and strengthening of related institutions.

## 3. Knowledge sharing

Information, education and communication are vital to the process of rolling out modern bioenergy products and services to a different audience ranging from farmers, policy makers to bankers. All methods and means of communication should be embraced to get the message and ideas across. In the process of implementing this activity, the following salient points are worthy of note:

- identify knowledge holders;
- knowledge management, sharing and transferring (communication tools), creation of an ECREE database and an observatory;
- knowledge monitoring; and
- put in place knowledge management system.

## 4. Capacity building

Education and training to improve knowledge and skills is a necessary pre-requisite for any successful programme in bioenergy. This cuts across the entire industry for both institutional and human resources and across the different levels of society, including literate and illiterate individuals and farmers. It is essential that any capacity building activity gives serious



consideration to gender balance. Capacity building activities should include but are not limited 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.

## **5. Financing mechanisms and resource mobilization**

Rolling out bioenergy technologies and services requires innovative and tailored funding mechanisms and schemes, especially for rural and peri-urban applications. These include subsidies and subventions, financial guarantee funds, and participation of international and local financial institutions. Therefore, in the exploration of financing mechanisms and resource mobilization, due consideration should be given to:

- mapping of financing schemes for every step of the bioenergy value chain;
- identifying barriers to accessing financing schemes;
- capitalizing on innovative financing mechanisms and experiences such as climate related financing mechanisms (incl. use of NAMAs to access Green Fund), ranging from enterprise support to end user finance;
- mobilizing local finance institutions, particularly private sources of capital; and
- coordination of donor.