8th Bioenergy Week and

Study Tour for Capacity Building

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ENERGY

1. Preamble

Energy demand in Africa continues to grow owing to various factors, including population growth, economic development, industrialisation, climate change and trade. However, access to modern energy services is very low in most African least-developed countries, particularly in rural areas. Bioenergy constitutes an essential source of energy for both households and industry. However, its current exploitation is mainly within unsustainable systems with negative impacts on lives and livelihoods, most notably in health, environmental degradation and other social impacts such as gender.

The COVID-19 pandemic has brought more urgency to addressing Africa's energy access deficit. Without secure, reliable and quality access to power, the region's health systems and related infrastructure cannot function, especially during a pandemic situation. African countries can build back better with resilient energy systems that address energy access and climate change, and spur economic growth and employment.[1]

The modern bioenergy industry is massively under-developed in Africa. Some of the limitations could be attributed to:

- lack of bankable bioenergy projects;
- misinformation and lack of information on the impact of bioenergy, particularly biofuels on food security, health and deforestation;
- lack of reliable information packages on the bioenergy industry and its potential contribution to African development;
- weakness or absence of policy and regulatory frameworks that guide bioenergy development; and
- weak capacity for development and implementation of projects.

There is a **commitment** from the African Union Commission and its partners to facilitate Africa's bioenergy development and modernisation. **The commitment is reaffirmed by the 2nd Session of the Specialized Technical Committee on Transport, Transcontinental and Interregional Infrastructure, Energy and Tourism**, organised by the African Union Commission (AUC) in collaboration with the Government of the Arab Republic of Egypt in 2019. AUC, AUDA-NEPAD and UNECA have committed to:

- Review and develop a Regional Bioenergy Policy Framework and Guidelines and Action Plans for the Regional Economic Communities; and
- Create a Finance and Project Preparation Facility to assist private and public sector project developers in bioenergy development.

The 2021 GBEP Bioenergy Week aims to foster discussion and exchange of experiences and skills from all the regions that have been proven to showcase sustainable bioenergy services' practicality and support its accelerated implementation in Africa. It also builds on the ongoing support of regional partners in accelerating bioenergy Africa's energy economy. It will serve as a platform for strengthening cooperation

[1] United Nations 2020. "Accelerating SDG7 achievement in the time of COVID-19" Policy Briefs in support of the High-Level Political Forum 2020.

between African member states and specialised institutions for increasing the provision of sustainable energy services.

2. Regional and national policies

Africa is moving forward with the implementation of its energy expansion programmes. There is a need to review current policies supporting energy access and assessing their robustness in different scenarios. Accelerating policies, actions and measures towards localising energy technologies, paying attention to regional systems for technology innovations, is highly important. Furthermore, it is critical to enhance local capacities so that the continent can possess an adequate supply of qualified labour along the whole value chain for the energy project conception, development and operation.

Implementing bioenergy in the right way is more complex than other renewable energy types because, if not well managed, bioenergy development may negatively impact in land-use change and food security. Reducing the challenges and expanding the opportunities requires policy action to ensure environmental sustainability, invest in agriculture and rural development, protect the poor and food insecure, and promote international policy coordination.

Finally, it is essential to mainstream and integrate bioenergy development in the countries' policy agenda with a view to (a) reduce or eliminate poor/traditional practices in the use of biomass resources; (b) strike a healthy balance between existing bioenergy feedstock and the scale of operations (that is small-scale bioenergy vis-à-vis large scale development); and (c) integrate linked policy process, i.e. energy, agriculture, land, water, environment, etc. into a coherent nexus approach. Over and above, it ensures that sufficient attention is paid to bioenergy as a vital energy sub-sector. It addresses the lack of bioenergy regional markets and trade; increasing R&D, and addressing lack of standards and regulation; and bringing countries up to speed that do not have dedicated modern bioenergy focus as well as investments2. There have been many studies that analyse policy effectiveness and it is important to integrate and harmonize these reviews in order to identify common themes and potential gaps, and move forward on the basis of work already done to further develop successful national and regional policies.

3. Sustainable value chains for food and energy security

A nexus approach can improve cooperation and collaboration among different stakeholders, sectors and actors in food and energy security. Decentralised solutions to energy access increase energy availability and create value across the agriculture-food value chains. Conversely, agricultural value chains can provide residual biomass that can be used for producing energy. When considered together, this can improve climate change mitigation and adaptation, reinforce the agricultural sector, increase access to reliable energy supply in poor and remote areas, create employment opportunities and diversify production.

4. Bioenergy reporting and statistics in Africa

It is vital to improve, finance and enhance the African countries' capacity to measure/collect and analyse bioenergy data and establish a robust system of continuous monitoring. The use of the AFREC Energy

[2] AU, 2018. The African Union Bioenergy Development in Africa Programme.

Information System (AEIS) and GBEP Sustainability Indicators for Bioenergy (GSI) represents an essential tool for decision making.

In order to measure bioenergy impacts and provide sound bioenergy indicators for decision-makers, accurate and reliable data are required across all parts of the value chains. The data needed encompass a wide spectrum of areas including detailed consumption data, availability of biomass resources, as well as many health and socio-economic information. However, in many countries, data collection is connected with several problems, including the weak sectoral establishment and lack of financial, institutional and human capacity. Improving data collection, statistics and analysis is key to monitoring bioenergy sectoral trends over time, evaluating sustainability and developing sound policies.

Only sound planning that reflects the different policy objectives, bioenergy pathways and specific country conditions will effectively enable bioenergy to contribute to low carbon development and build green economies.

5. Sustainable bioenergy as a contribution to land conservation and restoration

Traditional biomass accounts for more than half of all bioenergy used worldwide, and it is the primary source of energy for cooking and heating water for 2.8 billion people (38 per cent of the global population), especially in the African Region, where only 17 per cent have primary reliance on clean fuels. Woodfuel (charcoal and fuelwood) constitutes the primary source of energy for many households across the world and especially in Africa, where more than 80 per cent of urban households rely on charcoal for cooking and heating water and where the wood energy value chain offers employment to millions of people, both in urban and rural areas, thus contributing to alleviate poverty. In Africa, woodfuel demand is likely to increase in the forthcoming decades, driven mainly by both population growth and urbanisation.[3]

Traditional woodfuel use for energy production purposes is not sustainable in the way it is currently implemented in Africa and overharvesting of wood for energy purposes has been recognised as a significant cause of forest degradation.[4] When coupled with forest clearance for agriculture or urbanization, this contributes to the deforestation rate in Africa being five times higher than the world average.

The two communities of experts – bioenergy and forests - share a common interest in ensuring that value chains for wood energy are sustainable, enhance forest stocks and trigger investment to enhance local incomes for improved livelihoods, whilst also ensuring reliable energy access for the whole population. It is critical to strengthen the discussion around the relevance of sustainable wood energy production and use to contribute to forest landscape restoration (FLR), while facilitating stakeholders' productive interactions across the two sectors to improve landscape governance and develop a joint plan.

3 Pirelli, T., Morese, M.M. and Miller, C. 2020. *International dialogues on Forest Landscape Restoration and wood energy – Preliminary outcomes from multi-stakeholders consultations in sub-Saharan Africa*. Rome, FAO. https://doi.org/10.4060/ca9289en

4 IPCC. (2019). Chapter 7: Risk management and Decision Making in Relation to Sustainable Development. In *IPCC- Special Report on Climate Change and land*.

6. Liquid biofuels in urban areas

The use of liquid biofuels, such as ethanol, for household cooking demand in urban areas is an increasingly interesting perspective for Africa's fast-growing cities. Electricity is still unavailable to many urban households, either due to high costs or lack of access. Other fuel options, such as charcoal and kerosene, lead to health issues and pollution. The use of liquid biofuels can reduce urban household air pollution and emissions of GHGs, lower the pressures on local natural resources (such as forest biomass used for charcoal production), whilst also reducing the cooking costs for poor urban households. Although the potential is enormous, there are barriers to be overcome, including the procurement of reliable feedstock, logistics for distribution, and enabling environments to incentivise investment and uptake.

7. Bankability of bioenergy projects - opportunities and challenges

Adequate financing or access to finance constitutes the most significant impediment for the large-scale deployment of bioenergy in Africa. Unlike other renewable energy options, investments in bioenergy (except ethanol production for fuel mixing) is very minimal and local investors are marginally interested. Moreover, this is perceived as an arena for development aid and small-scale rural enterprises. Most bioenergy project plans are not adequately packaged for attracting private sector investment. This growth in demand presents challenges in mobilising the substantive and transformative investments needed. It also offers Africa an opportunity to close its vast energy deficit with transformative business models that make the global energy transformation.

8. Bioeconomy opportunities in Africa

The global demand for agricultural and forestry products is rapidly increasing, due to the growing demand for food, feed, fuel, fibre and biochemicals. The bioeconomy, which describes the production and use of biological resources, relies on natural resources such as land and water, and healthy ecosystems and their associated services. As demand increases, so do the pressures on this natural resource base and ecosystem services due to overexploitation and pollution.

Bioeconomy, in particular in Africa, represents not only a challenge but is an opportunity to tackle many societal issues concurrently. Bioeconomy is especially important also in climate change. The circular bioeconomy is viewed as one solution for low carbon development. Still, climate change is concurrently increasing the pressures on natural resources and ecosystem services, possibly restricting biomass' potential role as a solution. Bioenergy forms part of both the bioeconomy and the global energy system. As with any system with many linkages, there are inevitably synergies and trade-offs between the components, and sustainability of biomass should be cross-sectoral to take into account cumulative impacts of multiple sectors effectively, whilst also taking advantage of potential synergistic biomass uses across sectors.

9. Short-term action plan

While not all African countries may meet all SDG 7 targets by 2030, all efforts must be made in the short term to focus on renewable energy to reduce dependency on fossil fuel supply chains and create sustainable local jobs in Africa.

A short-term action plan could include the following:

a) AUC, ECA, AFREC, regional organisations (e.g. Regional Centres for Renewable Energy and Energy Efficiency – CREEEs) and national associations to **create a favourable environment for bioenergy investment** by accelerating reforms, particularly policy and regulatory measures to attract the private sector into the sustainable bioenergy supply value chain. These actions will support the development of frameworks for national, regional and global investments in the bioenergy sector. This action can build upon the work these organisations are already doing in this area.

b) Promote the **collection of accurate and reliable data** for fully assessing the on-ground situation and then monitoring progress towards targets. As a contribution to these efforts, GBEP, in partnership with the AFREC and UNECA statistic divisions, will advance the implementation of the GBEP Sustainability Indicators for Bioenergy at country level.

c) AFREC and UNECA (IDEP) to design and implement comprehensive **capacity building programmes** that could cover project identification, preparation, and procurement and technical aspects related to integrating bioenergy into renewable energy systems. These capacity-building programmes should involve all relevant stakeholders, including policymakers, to give them a detailed overview of current bioenergy production and its sustainable potential to facilitate informed policy decisions. Education and training to improve knowledge and skills are necessary pre-requisites for any successful action in bioenergy. Any capacity building activity must give serious consideration to gender balance.

d) **Promote local entrepreneurship** in the bioenergy value chain and encourage market development, consumer demand, and investments, respectively through supporting measures, such as capacity development, and innovative business and service models and financing structures. This action can be implemented through the proposed Bioenergy Risk Mitigation Facility by AUC in partnership with UNECA and CREEEs.

e) The regional centres of excellence to **support bioenergy technologies and services through innovative and tailored funding mechanisms and schemes** for applications in all areas – rural, urban and peri-urban. Champions could be promoted in bioenergy development who will help to advocate and localise technical solutions.

f) All partners and stakeholders to **promote collaboration and harmonisation of approaches**. This would establish the facility to support bioenergy development in Africa.