

## 11. Where Do We Go From Here? Making the Transition to Greater Prosperity Through Bioenergy

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Over the last eight years, the UEMOA member states have started to chart a course to change their future. In this endeavor, they face a number of obstacles: endemic poverty, rapid population growth, low agricultural productivity, limited natural resources, and little capital. Reversing these conditions will require an integrated strategy that involves economic, social, and environmental policy choices.

The agricultural sector provides the largest share of employment and output for most UEMOA member countries, yet it is critically dependent on imported inputs, including energy and fertilizer, for its productivity. The energy sector is characterized by power-generating stations that serve modern centers in urban areas; yet, there is significant dependence on traditional biomass by the rural and urban poor. For more than 70% of the population this means no access to electricity and limited modern energy services. In light of these circumstances, policymakers are asking what role modern bioenergy can play in transforming this situation, and what steps must be taken to change the current paradigm that compromises sustainable economic progress.

Knowledge is central to addressing these questions, and this report has served to highlight both what we know and do not know about the situation. The Blueprint highlights where data collection and information sharing are needed. It is imperative to also highlight the opportunities and issues that need to be addressed as the UEMOA adopts regional policies to expand the use of modern bioenergy.

- Traditional biomass use is accelerating deforestation and compromising the health of women and children. Phasing out the use of traditional charcoal through new systems that provide alternative fuels which rely on a combination of feedstocks, including agricultural and forest residues, should be a high priority.
- Redressing deforestation is central to any bioenergy strategy in the UEMOA region. Reforestation strategies need to incorporate protection and conservation, with the production of fast-growing species that can be harvested sustainably and processed into cleaner cooking fuels and/or biochar for soil conditioning. Improved production of these crops can position the UEMOA region to take early advantage of new, cellulosic conversion technologies which promise much higher energy returns when they come on stream.
- Where large-scale reforestation is not possible, incentives that encourage multi-cropping of fast-growing trees (such as in Niger) are another possible option.

- Water scarcity and adequate rainfall are likely to become increasing constraints on agricultural productivity. Strategic conservation, community engagement, and reforestation can help offset this problem and protect watersheds. Given the vulnerability of any agricultural production to water availability, investments in watershed restoration and sustainable community forestry are important both now and in the future.

The region produces some first-generation crops and is experimenting with other crops that show potential in rural areas. This production and experimentation offer a platform for expanding the use of sustainable bioenergy with policies that encourage good practices.

- Bioenergy development depends on fully integrated policies in agriculture, energy and rural development programs. The organization of the UEMOA Commission reflects this need which must be reinforced within national and local policies.
- The UEMOA needs to assess whether some of its current production of first-generation fuels—palm oil or sugarcane ethanol—can be more economically utilized by blending them into petroleum-based transport fuels and/or cleaner cooking fuels.
- A positive assessment would likely encourage the adoption of new, regional transport fuel standards that incorporate more locally produced bioenergy into products, reducing import demand and adding local value to the energy sector.
- This analysis would further examine whether expansion of either palm oil or sugarcane production is warranted, given land and water availability in suitable areas.
- Sweet sorghum should be assessed as a possible additional feedstock for ethanol production.
- Both sugarcane and sorghum production systems should take steps to incorporate bioenergy into their processing systems and cogeneration of electricity for nearby communities.
- Pilot investments in jatropha are increasing, given the high quality of the oil produced. The UEMOA should establish systems for monitoring and reporting the results of these schemes as soon as feasible. Local research and plant breeding will be needed for this and other crops (including tree crops).
- Jatropha yields to date limit its contribution to the larger energy sector, but policies should provide incentives for its use at the village level to reduce dependence on imported oil and to expand rural employment and incomes.
- Regional collaboration on plant breeding is particularly important in the case of jatropha—given public investments in its production and use.

- Perennial crops—like sugarcane, trees and shrubs that can be pruned for wood-based feedstocks, and ultimately some grasses—offer major advantages in this region. The UEMOA Commission should explore with FAO, the Consultative Group on International Agriculture Research, and possibly the Global Crop Diversity Trust on how best to identify crops that can contribute to a renewable energy base.

The UEMOA Commission and its member states are actively engaged in determining their next steps. Early actions should include:

- An inventory of bioenergy projects in the region and a common methodology for evaluation.
- Consultations with producer organizations and farmers are needed to assess what policies will best support their efforts to produce food, fuel, and fiber. Each country will have specific opportunities to pursue; but the goal is to undertake complementary actions that will produce local, renewable energy and expand energy access.
- Early investment in pilot programs to reduce use of traditional charcoal and develop production systems that support local processing of cleaner fuels from agriculture and forest residues.
- A priority reforestation plan.
- Exploration with the World Bank, the GEF, and other donors on how a regional sustainable forestry and watershed plan can be financed.
- These consultations will help identify how to prioritize the introduction of new crops—and help determine when marginal and degraded land offers important opportunities for bioenergy investments.
- Throughout the above activities, it will be critical for UEMOA governments to work in close partnership with the private sector (e.g., Public–Private Partnerships, PPP).

*Bioenergy has the potential to contribute to economic growth in UEMOA member countries through reducing oil imports, driving rural development, creating jobs, expanding food production, and reducing poverty. Locally produced bioenergy can increase access to affordable, renewable, modern energy services in West Africa while broadening the base for socio-economic development. Realizing this vision demands careful attention to several social factors and trends.*

- **Land tenure.** Current policies put small land holders at a disadvantage, by not ensuring their access to defined perimeters and supporting their investments. Early bioenergy investments have focused on “plantation” operations that further limit the holders’ chances of producing a new, higher value crop and getting predictable support for their efforts. For social benefits to be achieved, policies will have to focus on creating opportunities for smallholders—and supplies of seeds,

plant materials, fertilizer, and water access will have to be consistent. Micro-credit institutions in rural areas are likely to be essential in supporting small land holders.

- **The gender gap.** Women play vital roles in agriculture and need support. It is vital that new agriculture policies recognize this and that extension and micro-credit programs incorporate women into their efforts and advance their empowerment.
- **Rapid population growth.** This trend holds the most potential for undermining the UEMOA efforts to increase agriculture productivity and chart a course for sustainable development. Recent social surveys in some UEMOA countries have underscored women's interest and need for access to health services, including family planning and their desire to space births. As more and more agricultural labor is provided by women—as men migrate to urban areas and abroad—keeping women healthy and productive is an essential strategy for improving productivity. Family planning programs were an essential component of East Asia's development strategy and will be needed here.
- **Climate change.** Maintaining the health of soils, watersheds, biodiversity, and the human population in an ecosystem is a strategy for both mitigating the effects of and adapting to climate change. The UEMOA region is uniquely vulnerable to this phenomenon. It is clear, however, that the political leadership is committed to pursuing more sustainable strategies and improving the resilience of the ecosystems and the communities that depend on them. Bioenergy can be a component and an entry point for a broader sustainable development plan that offers a better future.