



Biomass Energy Strategy (BEST) Mozambique

Background

Mozambique holds extensive biomass resources, with 50% of the country under forest cover. 80% of the energy used in the country is in the form of traditional biomass and the value of the charcoal market alone is an estimated 250 million USD. Population growth, urbanisation and agricultural expansion all lead to further pressure on the remaining biomass resource base, the situation in some regions is critical and irreversible damages are being caused. By losing its forest cover, Mozambique risks losing a major domestic resource and a steady supply of low-cost, renewable energy. As the development of alternative energy sources for cooking and heating (electricity and LPG) requires large investments and takes time, the dependency on wood fuels is not expected to decrease in the near future. The development of a sustainable wood fuel supply chain is the most promising option for Mozambique to ensure the availability of sustainable and affordable energy.

A lack of commercial interest in improving local energy supply chains due to low prices and a lack of information and regulation at all levels hampers the development of a sustainable supply chain. The Biomass Energy Strategy is designed to reverse this process by developing multiple and complementary solutions to support the development of a sustainable biomass supply in the near future.

Strategic Targets

The Biomass Energy Strategy consists of mutually reinforcing interventions to be implemented simultaneously; implemented in a holistic approach they will result in a greening and modernisation of the biomass energy sector. The modernisation process has four objectives:

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| Country | Mozambique |
| Project Partner | Ministry of Energy Mozambique |
| Project Manager | Ina de Visser |
| Term | January 2011 – December 2012 |

- ▶ positive environmental and climate impact;
- ▶ guaranteed security of energy supply;
- ▶ economic efficiency; and
- ▶ compliance with health and safety standards.

In general, three biomass energy supply scenarios may occur in a region: (i) surplus, which is the current case in Cabo Delgado, Manica, Niassa, and Zambezia; (ii) approximate balance between supply and demand, as in the case of Gaza, Inhambane, Sofala and Tete; and (iii) shortage, as in the case in Maputo and Nampula. The proposed solutions for each region will depend on the supply balance.

Strategy Actions

The Biomass Energy Strategy recommends some strategic actions to bring about fundamental changes in the biomass sector:

1. **Upfront regulatory changes** entailing (i) the application of the decentralization principle for wood resources; and (ii) implementation of fiscal measures to facilitate this. To maximise incentives for the various stakeholders, three different fiscal rates should be applied: (i) a low rate in communities with managed forestry resources and private plantations; (ii) an intermediate rate elsewhere in non-protected, non-conservation areas; and (iii) a high rate in protected areas and conservation areas. The fiscal measures have a threefold impact; firstly, increased income from wood resources will stimulate companies, villages and individuals to use their forest resources sustainably; secondly, increasing efficiency of use will be more attractive and, thirdly, the government has more funds available to enforce regulation and improve supply chain sustainability.





2. **Institutional organisation:** Creation of a dedicated organisation addressing biomass energy issues – an independent and inter-ministerial Biomass Energy Agency (BEA). The main task being to ensure that the aforementioned regulatory improvements are made, the taxation and verification mechanisms are operational, and all capacity building activities are realised.
3. **Community-based capacity building to enable sustainable wood resource management:** Capacities to enable sustainable management of wood resources can be created with systematic and substantial capacity building within communities; encouraging them to develop natural resource management plans and establishing village wood management committees to administer the revenues on behalf of the community. Annual independent audits of village accounts and use of the revenues should be included.
4. **Formalizing and professionalizing the charcoal value chain** to provide economic opportunities to rural households and to create professional charcoaling entities in the form of associations, cooperatives or private firms. A more formal and commercially-oriented operation will contribute to a fairer distribution of benefits among all stakeholders involved in charcoal production, trade, and marketing. Furthermore, modern and efficient conversion techniques can be disseminated more effectively. The creation of a network of rural and urban charcoal markets offers opportunities for improving the organisation of the charcoal sector and assists charcoal burners in obtaining better prices.
5. **Monitor charcoal flows and verify compliance of tax payments.** The proposed taxation mechanism is a tool for facilitating sustainable management practices at the community level and to avoid corruption by providing transparency to the woodfuel supply chain. An independent control and monitoring system is required to verify the management of natural resources and tax payments.
6. **Promote improved cookstoves.** A supply chain of more efficient and cleaner stoves should be established in combination with awareness-raising activities. In addition to stoves for households, larger efficient stoves for public institutions (schools, hospitals, army, and prisons), small-scale enterprises and restaurants should also be promoted, incl. biogas.
7. **Promote modern biomass-based cooking fuels alongside modern fuels.** This includes a shift from traditional, non-standardized and non-sustainable biomass to modern standardized biomass fuels based on residues and standardized products such as briquettes and pellets to increase both the sustainability of production and the efficiency of use. Some of the most promising solutions are: (i) selective promotion of LPG in suitable environments; (ii) production of charcoal briquettes from charcoal waste; (iii) production of wood pellets and briquettes from sawdust and potentially fuelwood plantations, and (iv) production of bioethanol from energy crops or residues rich in sugar or starch.

The Way Forward

Immediate action from the government is needed to improve sustainability of the biomass supply chain in Mozambique. Comprehensive policy and regulatory changes are required, followed by specific investments to modernise the biomass energy sector. This would result in a sustainable biomass energy supply at relatively low costs. Modern biomass will be available for as long as the population prefers to use biomass as its primary and low-cost energy source.

The Biomass Energy Strategy has been accepted during the validation workshop and will now be used by the Ministry of Energy to produce a concise policy document to be taken to Parliament for approval and ratification later in 2013.

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