



## Mali-Folkecenter – using Renewable Energy Technologies for the sustainable development of rural West Africa

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Mali-Folkecenter is a small independent NGO working to promote the use of renewable energy technologies in Mali, West Africa. Initiated by a Malian named Ibrahim Togola and supported by the Danish NGO Folkecenter For Renewable Energy, Mali-Folkecenter works using renewable energy for sustainable rural development. Seventy per cent of Mali's population is rural and less than five per cent of the nation's population is served with electricity. Most energy needs for most people are satisfied by the use of wood and charcoal.



**Woman chopping wood for sale in the markets of Bamako**

As a result, trees are being cut faster than ecosystems can regenerate and little is done in the way of forest management. Traditional fuel resources are limited, so in the future priority must be given to sustainable management and efficient use, for the sake of future generations.

### **Renewable energy suits Mali**

Areas surrounding cities are particularly affected, and for Mali, falling in the environmentally fragile Sahel region the consequences of this are serious. Desertification is a daily reality here and people feel the change as soils become

more eroded and women walk further each day to find wood. Mali is too vast and its population too sparse for a national grid to ever make economic sense, even if the Government had the financial resources to provide it, which it does not, being burdened by a foreign debt of 2.8 billion US dollars. Mali has no fossil fuel resources, and all petroleum products are imported. Renewable energy systems create a decentralised energy-producing culture, cutting out the need to transport fuels such as petrol and gas long distances (from the coast to Mali in interior West Africa).

It is for these reasons that renewable energy sources make so much sense here. Mali-Folkecenter is working to provide sustainable alternatives: photovoltaics for lighting, biogas to replace firewood, and plant oil to replace diesel in engines and generators. These energy services can act to combat desertification and the rural exodus which occurs when villages can no longer sustain their increasing populations with available resources. Mali-Folkecenter works with rural people enabling the provision of solar, biogas and plant-oil energy and supports small-scale Malian renewable energy companies. Mali-Folkecenter has also worked with local Government to promote environmental thinking in local planning, so that woodland is managed and species protected.

### **Solar energy provides basic energy services**

The solar energy project involves basic electrification of 23 village schools in the Sikasso region of Southern Mali and the electrification of health centres, maternity clinics, public squares and water pumps in 3 core villages in the area. Mali-Folkecenter's work has involved training villagers to install the systems themselves and to provide their own maintenance, so that the systems are long-lasting.



**The villagers of Tabakoro raising the solar street light which will serve their public square**

### **Biogas succeeds in Mali**

The biogas project involves the installation of 5 domestic biogas plants in the environmentally-pressured region which surrounds Bamako, Mali's capital. Here, animal waste is used to provide large families with fuel for cooking, so that dependence on traditional energy sources is reduced. The biogas digesters also create a useful by-product which is a very rich fertiliser, so reinforcing in daily lives the link between energy consumption and soil preservation. Mali-Folkecenter trained master masons with existing skills to build the domed brick digesters. Families that participated in this project contributed to the construction of the digesters, and will carry out the maintenance of the systems themselves as and when problems occur.

The plant-oil project is based on the use of jatropha, a bush commonly used for hedging in Mali, to provide a diesel substitute, which can then be used to fuel a multi-function platform – a small engine which powers small-scale mills and agricultural processing equipment, including a jatropha oil press.

Not only does this reduce the heavy burden of rural women's physical labour, but it also provides the opportunity for women living in villages to increase their income and so to

better provide for their families nutritional and educational needs.



**Women of N'Tjila sell soap made from the jatropha oil pressed on their press. Mali-Folkecenter has transferred Nepali technology to Mali to allow local press production.**

### **Using indigenous knowledge to map and reverse environmental degradation**

Mali-Folkecenter has also worked with 3 municipalities surrounding Bamako, working with rural people to create environmental action plans for villages, to preserve wood resources and soils, to plant trees and protect species. Here local knowledge was used to assess the changes that had occurred to the environment in the life time of villagers and in the oral tradition that had been passed down through village elders. In this way it was possible to see how the village environment had changed in the span of a few generations and to analyse what could be done by the villagers themselves to reduce pressure on their fragile surroundings. Mali-Folkecenter has also been campaigning on an international level to promote the creation of an international agency within the UN system for the transfer of renewable energy technologies from North to South.