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Solar / Wind



Gender/ Energy/ Environment



Natural Resource Management



Enterprise Development



Technological Development

M F C

Annual Report 2002





Mission statement

Mali-Folkecenter's mission is to promote the sustainable management of natural resources and the use of these resources to catalyse local economic growth & sustainable development by working in partnership with rural populations and local entrepreneurs.

Activities include: environmental protection, provision of clean energy services to meet the needs of rural and un-served areas using renewable energy technologies, drinking water supply, technology transfer and the training of local technicians, and delivery of enterprise development services for rural companies in the clean energy sector. MFC also participates in energy & environment policy work with the Malian government.

Due to achievements on the ground working with rural and peri-urban populations for sustainable development, Mali-Folkecenter signed a protocol-agreement with the government of Mali through the Ministry for Mines, Energy and Water in October 2000, with a duration of five years.

Mali-Folkecenter (MFC) is a Malian NGO which represents the Danish Folkecenter for Renewable Energy. Mali-Folkecenter's permanent staff consists of Malians and expatriates including: engineers, socio-economists, socio-environmentalists, a sociologist and technicians. This core team is complemented by contractual staff when additional expertise is necessary.

Approach

The Mali-Folkecenter approach to development activities has always been based on grassroots initiatives from the communities concerned, with direct involvement of local people during execution. The emphasis is on comprehensive training of target groups and, where appropriate, creation of maintenance and management committees, in order to facilitate appropriation of activities and build the capacity needed to assure maximum impact in the long term. Priority is also given to use of income generating mechanisms which can ensure profits for operators, local economic growth and provision of funds for maintenance, repairs and continued operation. MFC works with local populations, municipal authorities, government departments, multi-lateral institutions, local & international NGOs and other development partners.

Following the results obtained in the field, Mali-Folkecenter signed a protocol of cooperation with the government of Mali through the Ministry in charge of Energy in 2000.



Mali-Folkecenter's office (left) and team of specialised staff (right).



2002 - an eventful year for MFC

This year has seen a restructuring of the NGO in line with strategic objectives relating to future development work. Five departments have been created Solar / Wind Division, Gender / Energy / Environment Division, Natural Resource Management Division, Enterprise Development Division, and the Technological Development Division, each with dedicated personnel and projects in the relevant field. MFC has been represented at international conferences and workshops (including the World Council for Renewable Energy in Berlin, a vehicle conversion workshop at Folkecenter Denmark, the Knowledge Networks for Sustainable Energy in Africa workshop in Ghana, and the information for Africa Climate Technology Transfer launch in Senegal), raising the profile of the organisation on the global scene. Significant efforts have been made to improve communications so as to better present results gained in the field in Mali.



Mali-Japan Friendship Association established

MFC's relation with Japanese environmental NGO Eco-Capital Japan (Director Hideki MATSUMOTO) was reinforced when MFC Director Ibrahim Togola made his second trip to Japan from invitation of Mr. MATSUMOTO. Activities in the field were presented at various seminars, conferences and workshops, and the Mali-Japan Friendship Association was established (initiated by a group of Friends in Japan and coordinated by Mr. Takayuki KAWAMURA), with a mandate to

promote relations between Mali & Japan and to support developmental actions in rural Mali. The *'One rural clinic, One solar system'* concept was launched, and Japanese friends presented MFC with a donation for electrification of rural maternity clinics in Mali. These installations will be made at the end of 2003. MFC gratefully acknowledges the support received from his Japanese friends.



Independent MFC web page goes on-line: www.malifolkecenter.org

At the end of December 2002, Mali-Folkecenter's all new web page went on line for the first time. The new site represents the institutional capacity building, which is an ongoing business, and the NGO's structure of 5 departments. The website is constantly being updated, but some sections are incomplete. If you cannot find the information you need, please email mfc@malifolkecenter.org.

MFC takes leading role in creation of AMPERE - the Malian Association of Renewable Energy & Environmental Protection



2002 also saw the creation of the Malian Association of Renewable Energy & Environmental Protection by a group of NGOs, private companies, community based organisations (CBOs) and Malian university. AMPERE was initiated by the Director of Mali-Folkecenter, Ibrahim Togola. It is hoped that this body will be able to promote and lobby for key issues on promotion of environmental protection and Renewable Energy in Mali.

International trainees

MFC hosted trainees from the University of Twente in the Netherlands, from Ecuador, from Finland and from Mali, allowing students to get vital hands-on experience of development work in a developing country context. MFC plans to continue to develop partnerships with leading institutions both in the North and in the South to facilitate knowledge transfer, capacity building and training.



Solar / Wind Division

Mali, like other countries of the Sahel, is landlocked, and faces many challenges in the field of energy supply. The energy sector is characterised by dependence on imported fossil fuels (nearly 10% of energy requirements), with the inevitable associated impact on the national trade balance, and high dependence on wood & charcoal, which together meet 90% of energy needs. This unsustainable use of biomass results in deforestation and desertification. Electricity supply is very limited: around 20% of the urban population and less than 1% of the rural population have access to electricity. This can be contrasted with abundant Renewable Energy resources (2500 hours of sunshine per year, insolation of up to 6kWh/m² per day, wind speeds of 3 – 7 m/s in the north & east of the country). These are decentralised resources which can be exploited by Mali's largely decentralised population. Many areas of Mali will never be on a national electricity grid as population densities are too low to make it profitable, but solar and wind power give the option of generating electricity wherever it is needed.

The Solar/ Wind department works with rural populations to put these natural resources to work. A heavy emphasis is placed on technical training to build local capacity at village level for operation & maintenance of systems installed. Appropriate management structures are identified and developed including income generating mechanisms which fit to the socio-environmental context, as it is essential that systems can generate enough revenue to pay for their maintenance. Only then can the benefits be sustainable. Projects for 2002 were:

- ◀ **Solar electrification to combat rural exodus (Danida)**

This project, active in 23 villages in Koumantou Municipality, seeks to improve living conditions in rural areas through installation of solar energy systems for water pumping, lighting in schools and public squares, and lighting and refrigeration in clinics. Local technicians are trained for operation and maintenance tasks for long term sustainability. Local government is involved in management.



- ◀ **Solar electrification of rural clinics (IsF, Government of Rioja, Spain)**

A first project in cooperation with IsF Rioja (Engineers without Borders, a Spanish NGO), to provide solar lighting in maternity clinics, based on experience gained in the frame of the Danida funded project above. A follow up project is currently under discussion. Local technicians are trained for operation and maintenance tasks.



- ◀ **Rehabilitation of solar water pumping systems (SEAF – Sustainable Energy Advisory Facility, UCCEE – UNEP Collaborating Centre on Energy & Environment)**

This project sought to identify organisational and management problems which act as barriers to sustainability in village solar water pumping systems. In cooperation with DRHE (National Directorate of Hydraulics & Energy) and CNESOLER (National Centre for Renewable Energy).



- ◀ **Solar-wind hybrid water pumping (GEF Small Grants Program)**

The first project of its kind in Mali (solar wind hybrid), pumped water will be sold for watering livestock, to generate funds necessary for operation and maintenance. Local technicians are trained for operation and maintenance tasks. The project is carried out in cooperation with InterCooperation (Swiss Cooperation) and JEKASY. Results gained in this project could provide the basis for a much larger wind project for northern areas of Mali.

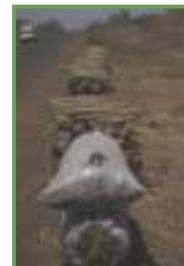




Gender / Energy / Environment Division

In Mali, firewood and charcoal are the most common sources of energy, contributing to about 90 % of all energy use, and over 95% of domestic energy needs. The cities with 25% of the total population are the biggest consumers of firewood and charcoal. This wood is supplied by surrounding countryside.

Firewood and charcoal are also an important source of income for rural women. In Mali, women are traditionally in charge of looking for firewood in the forest to meet the household needs, and when wood and charcoal has become a business, it is still in hands of women. Women are in charge of many household expenses, and wood selling is the most important source of income for a big part of the year. In the areas near to the main roads and in the surroundings of the cities, deforestation has become a big problem due to this wood- business.

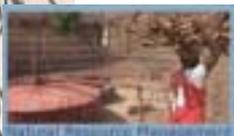


The linkage between reduced forest cover and erosion and desertification is not well understood by the population, and generally planting of new trees is not taking place. And even if the problem is understood, it is difficult to deal with, because people don't have any other source of income to substitute the income gained from wood selling, and they don't have skills or capital for starting something new. The Gender / Energy / Environment Division, with its staff of three women, aims to tackle these issues.

◀ *Sinsibéré Project*

This project, carried out in cooperation with the Finnish NGO Dodo and funded by the Finnish Ministry of Foreign Affairs, seeks to address these problems in three municipalities (60 villages) through environmental education, and development of new, more environmentally sustainable income generating activities for rural women. This is done by supporting women's groups to start microcredit schemes and providing training necessary to manage them. Also emphasizing importance of planting new trees and introduction of energy efficient stoves is part of the activities of the department.





Natural Resource Management Division

This division has a very broad mandate, and past projects in the domain have included such diverse activities as environmental education and planning with local municipality staff (GTZ), domestic biogas for cooking (GEF Small Grants Program), organisational aspects of jatropha fuelled multi-function platforms (UCCEE) and information-education-sensitisation. 2002 saw a project in the field of jatropha, which has continued to stimulate international interest in this highly adaptable and highly useful plant:

◀ *Jatropha as a tool to combat desertification, poverty alleviation & provision of clean energy services to rural women (supported by Siemenpuu Foundation, Finland)*

The aim of this project was to promote the jatropha plant in general, with all its benefits in terms of environmental protection, anti-desertification/ anti-deforestation properties, and of course income generating possibilities, either by the traditional soap making process (although forgotten in some zones) or through use as a fuel in multi-function platforms (MFPs).

A great deal of field research was also necessary, working with villagers from Kayes, Sikasso, Koulikoro and Segou to identify jatropha potential in their area, collect data for eventual creation of a jatropha resource map which can help decision makers take informed decisions on the plant.

The project will later install 2 pilot multi-function platforms for women's groups with delegated private management. Thus the real economics of the platforms can be examined and analysed in great detail, and conditions for profitability and feasibility studied.

There is also growing interest in jatropha internationally about its potential as a plant oil fuel and biofuel. MFC's Toyota pick-up has been converted to run on jatropha oil as fuel by ELSBETT company, Germany, with support from the Danish Folkecenter. In the long term, the Natural Resource Management Division predicts jatropha will be used as a fuel for not only stationary engines like MFPs, but for rural tractors and transportation.

The Natural Resource Management Division has also established cooperation with the Finnish Environmental Institute, on projects to study the presence of water hyacinth in the Senegal River. Technicians from the institute have made field trips to Mali, and continued cooperation is planned for 2003 and beyond.





Enterprise Development Division

The enterprise development department is responsible for supporting small and medium sized enterprises in the renewable energy & energy saving sector. This reflects MFC's conviction that sustainable energy enterprises are a key factor (and often a missing link) in the supply of energy services to rural populations.



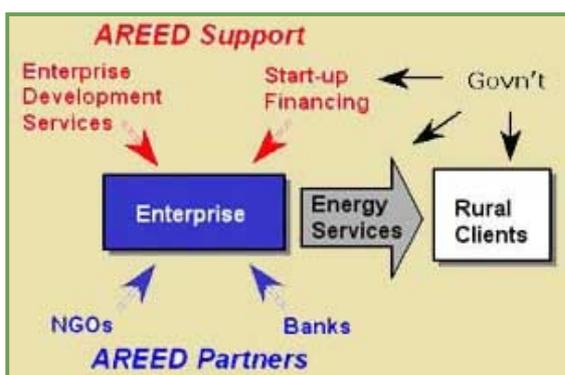
MFC is the focal point for AREED (African Rural Energy Enterprise Development) in Mali, and the enterprise development department is responsible for activities in the frame of this project. Please visit www.areed.org for more information.

UNEP (the United Nations Environment Programme) initiated the AREED initiative in April 2000. AREED seeks to develop new sustainable energy enterprises that use clean, efficient, and renewable energy technologies to meet energy needs of under-served populations, thereby reducing the environmental and health consequences of existing energy use patterns. The project is coordinated in 5 African countries (Mali, Senegal, Ghana, Tanzania and Zambia) by E+Co, the US energy investment non-profit company.

The AREED approach offers rural energy entrepreneurs a combination of enterprise development services and start-up financing. This integrated financial and technical support allows entrepreneurs to plan and structure their companies in a manner that prepares them for growth and makes eventual investments by mainstream financial partners less risky.

The AREED initiative also works to broaden the skills of organizations involved in the energy and investment sectors to nurture energy entrepreneurs. AREED works with financial institutions to assess the rural energy business sector and integrate it into their portfolios. Opportunities for co-financing are also explored.

What AREED has to offer:



- ◀ Training and tools to help entrepreneurs start and develop clean energy businesses
- ◀ Enterprise start-up support in areas such as business planning, structuring and financing
- ◀ Seed capital for early stage enterprise development
- ◀ Partnerships with banks and NGOs involved in rural energy development

To date, Mali-Folkecenter has provided Enterprise Development Support to many entrepreneurs, and two companies have received loans to help them develop their business:



◀ **USISS Unité Semi-Industrielle de Séchage Solaire**

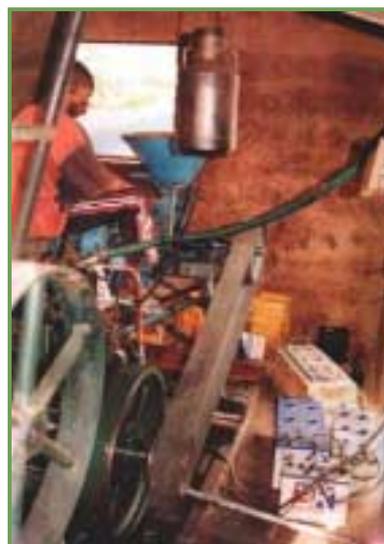


A company producing dried foodstuffs (mangoes, beef, onions etc.) using solar dryers benefited from a loan of approximately 18 000 USD to double capacity, expand and develop markets.

◀ **GIE Bagani**

A groupement d'intérêt économique (small company) which benefited from approximately 15 000 USD to start a small agricultural processing business based on a multifunctional platform using jatropha oil as biofuel. This Renewable Energy fuelled installation provides milling and battery charging services to local people. It is the first privately operated multifunctional platform in Mali.

Mali-Folkecenter will continue to follow these entrepreneurs and to provide support and advice.



Technological Development Division

The technological development department is responsible for all the more technical aspects of MFC's work. Hence other departments can call on its expertise to assist on technical matters, especially technology transfer issues. The technological development department has played an important role in many projects over recent years, but particular achievements include technology transfer North-South & South-South.



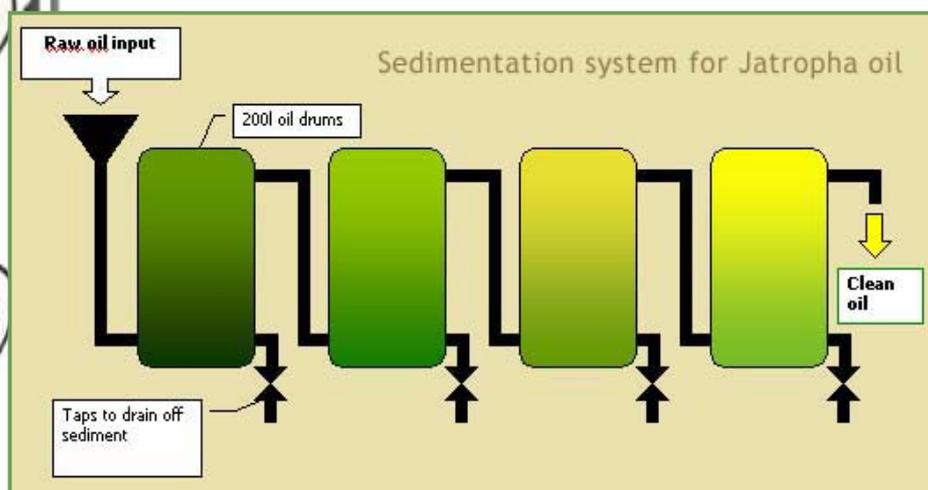
North-South technology transfer was effected in the conversion of MFC's Toyota pick-up (above) to run on jatropha oil instead of diesel, with support from the Danish Folkecenter & Elsbett Technology GMBH.

This Toyota pick-up, work-horse of Mali-Folkecenter, used for implementation of Renewable Energy-fuelled development projects in Malian rural areas, has been converted to run on CO2-neutral plant oil. In a simple procedure taking only 1 day of work, the cars standard 2.8litre diesel engine was converted to run on jatropha oil by an engineer from the German company Elsbett at a workshop in Bamako, Mali. Jatropha is an abundant non-edible plant that flourishes in Mali's dry Sahel conditions.



The construction of a Nepalese jatropha oil press in Mali was South-South transfer, removing a significant barrier to wide scale adoption of jatropha oil technology in Mali. This was implemented in the frame of the Sustainable Energy Advisory Facility (a UCCEE initiative), in cooperation with CNESOLER (the National Centre for Renewable Energies, part of the Ministry of Energy).

Development of sedimentation & filtration system for jatropha oil



The Technological Development Division in 2002 developed a filtration and sedimentation system for jatropha which can produce engine grade fuel from raw pressed jatropha oil. MFC will continue to work with jatropha technology - at village level and for transportation. Promotion of the multi-functional platform and the Malian jatropha press will continue.

Mali-Folkecenter's Partners

- ◀ The Ministry of Mines Energy & Water
- ◀ The Ministry of Rural Development & Ministry of Environment
- ▶ The Danish Folkecenter for Renewable Energy, www.folkecenter.dk/en/
- ◀ Danish International Development Assistance (DANIDA)
- ◀ United Nations Development Program (UNDP)
- ◀ United Nations Environment Program (UNEP), www.uneptie.org/energy
- ◀ UNEP Collaborating Centre on Energy & Environment (UCCEE), Denmark, www.uccee.org
- ◀ Global Environmental Facility (GEF)
- ◀ GTZ
- ◀ Dodo - Living Nature for Future, Finland, www.dodo.org/english/
- ◀ Siemenpuu Foundation, Finland
- ◀ Finnish Environmental Institute
- ◀ ECO- Capital Japan, Miyazaki, Japan
- ◀ Mali-Folkecenter Friendship Association, Japan
- ◀ GVEP Global Village Energy Partnership, www.gvep.org
- ◀ E&CO, New Jersey, USA, www.energyhouse.com
- ◀ University of Twente, the Netherlands
- ◀ French Catholic Committee to Combat Hunger for Development (CCFD)
- ◀ and other Malian & African NGOs

Ibrahim Togola
Regional Director

