



DEA Case Study Fact Sheet: Mali

Created: February 2007

Development and Energy in Africa (DEA)

Programme area: COOPENER, Community cooperation with developing countries
Target countries: Botswana, Ghana, Mali, Senegal, Tanzania, Zambia
Status: ongoing

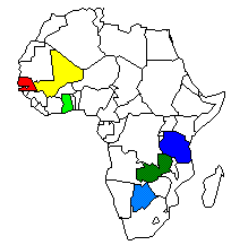
Case Study carried out by: Mali-Folkcenter Nyetta
 Faladie SEMA
 Rue 851, Porte 181
 BP E4211 Bamako
 Mali
 Tel : +223 220 0617
 Fax: +223 220 0618
pierre.dembele@malifolkcenter.org

Other DEA project partners: Risoe National laboratory, Denmark
 ECN, Netherlands
 EECG, Botswana
 KITE, Ghana
 ENDA, Senegal
 TaTEDO, Tanzania
 CEEEZ, Zambia

Case Study: Women Renewable Energies Project

Country: Mali

Keywords: Renewable energy, women, development, impact, assessment



DEA
Development and Energy in Africa

Short description of energy intervention

- The Women Renewable Energies Project (WREP) was an initiative of the Malian Government in response to the International Conference on Renewable Energies, held in Nairobi, in 1981. The Nairobi conference recommended the active involvement of women in the different energy decisions making, because they are the main producers, users, and managers of various energy sources.
- The WREP aims to promote the utilization of renewable energy **to fight desertification and poverty, and to protect the environment**. The project also aimed to encourage the participation of women in development programmes, particularly in the energy sector to improve their conditions.
- The WREP was funded by UNDP and the Governments of the Netherlands and Mali.
- The WREP was implemented in two phases: the pilot phase and the implementation phase. The pilot phase started in 1992, and ended in 1995. This phase covered 41 villages in the region of Koulikoro. The positive outcome of this phase motivated the continuation of the project in a second phase which started in 1996 and ended in 2001. This phase is known as the implementation phase and covered 90 villages in the regions of Sikasso and Segou.
- The WREP installed 113 solar lighting systems for health centres and literacy centres, 74 solar water heaters in health centres, 27 solar driers for the conservation of perishable fruits and vegetables, 2 wind water pumping systems for small-scale irrigation, and 16 multifunctional platforms running on jatropha oil to relieve women of their arduous

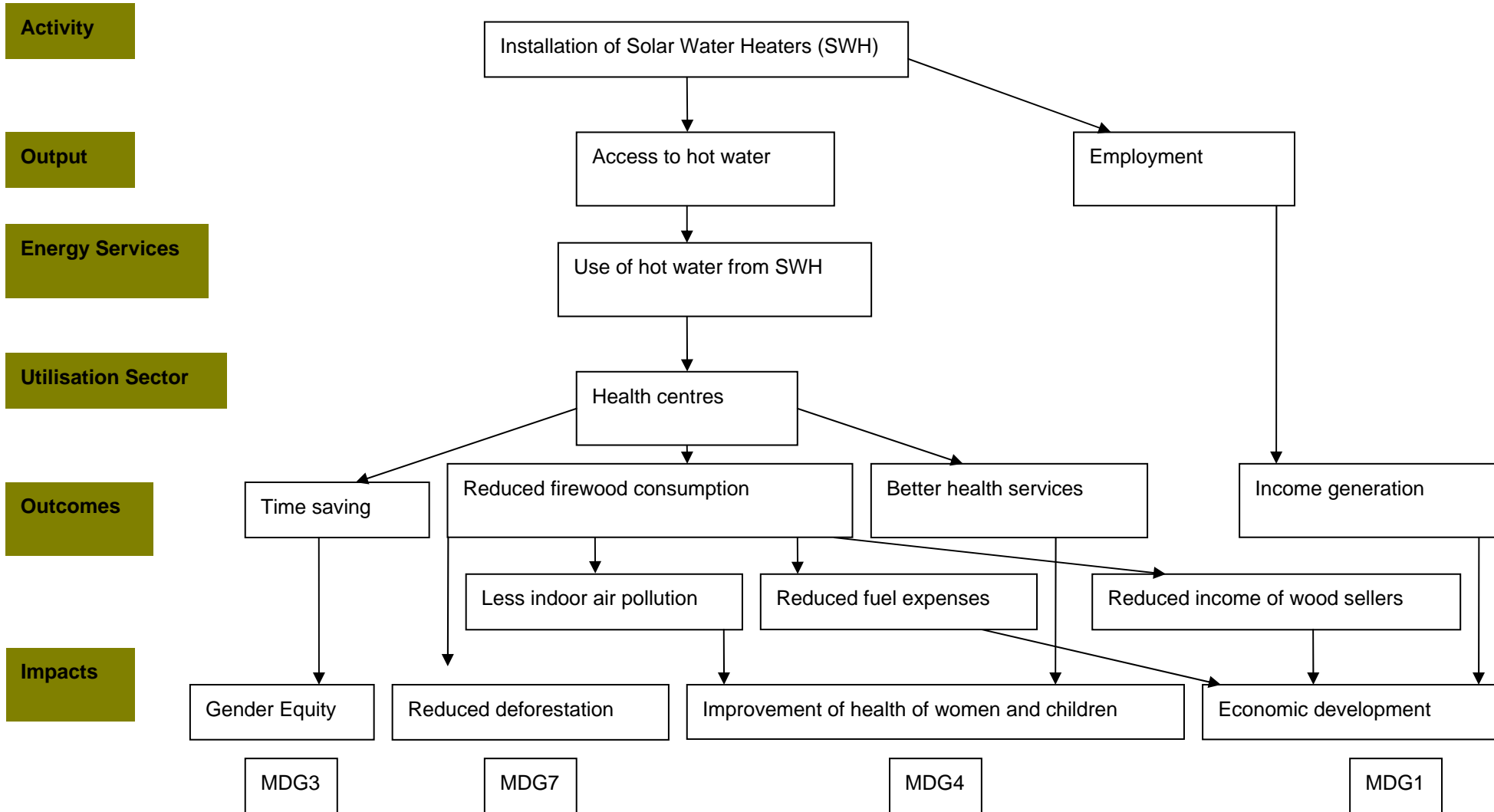
workloads. These technologies were installed in 130 villages of the regions of Koulikoro, Ségou and Sikasso. The WREP also provided various literacy training to more than 3 500 women, and maintenance training to 60 local technicians.

Case study methodology

- Reviewing relevant literature project's reports
- Drawing 4-level causal diagram (inputs, outputs, outcomes, impacts) for each technology
- Designing indicators and data collection procedures
- Conducting field visit in selected villages (Konodimini, Koula, Massala, Somonodougouni, Tombougou, Wolonkotoba, Zambougou) during which focus group meeting are held with the beneficiaries (health, literacy, village association, women and children)
- Analysing data by categorising them into social, economic and environmental benefits resulting from the use of the five technologies installed under the WREP project
 - i. Environmental impacts were measured by indicators like the reduction of wood fuel consumption and the reduction of CO₂ emission
 - ii. Social impacts were measured by indicators like the number of beneficiaries, the improvement of the health centres' services, the improvement of the literacy rate and the alleviation of the women's workload
 - iii. Economic impacts were measured by the savings on the expenses for the purchase of wood fuel and kerosene. Incomes generated by the use of the technologies were also used to measure economic impacts.

Causal link diagram

An example of the causal trees drawn for each of the five technologies installed by the WREP is as follows:



Results

The impacts assessment shows that.

- There are savings on the purchase of fuel wood and kerosene per visit to the health centres through the use of solar water heater and solar lighting system
- There is income generation for the individuals through commercialisation of garden's produces and dried fruits and vegetables
- There is income generation for the community through billing of access to the services provided by the different technology installed by the WREP
- There is reduction of the burden of women through easy access to hot water and modern cereals grinding services
- There is increase in literacy attendance through better learning environment & extended hours in class at literacy centres
- There is a reduction in forest resource depletion
- There is a reduction in carbon dioxide emission
- There is better health care for mother and child through safe baby delivery at night and access to hot water
- There is income loss for wood traders due to reduction in demand caused by access to solar hot water

Lessons learnt

The case study revealed that:

- Energy project alone has little impact on development but associated to other development project, it will have significant impact
- The 4-level diagram proved very useful for understanding the development impact of energy project
- There no universal indicators for impact assessment. The indicators are case specific and therefore the data to be collected
- Baseline issue can be solved using the combination of recall method and past studies
- Stakeholders are enthusiast to use the Assessment Framework and for that they will required training

DEA Project Management:

[Energy for Development](#), Systems Analysis Department, [Risø National Laboratory](#)
Technical University of Denmark, DK 4000 Roskilde, Denmark
Tel: +45 46 77 51 71, Fax: +45 46 32 19 99
gordon.mackenzie@risoe.dk

From 1 January 2007, Risø National Laboratory, the Danish Institute for Food and Veterinary Research, the Danish Institute for Fisheries Research, the Danish National Space Center and the Danish Transport Research Institute have been merged with the Technical University of Denmark (DTU) with DTU as the continuing unit.

Website:

<http://www.deafrica.net>