

NOVIS¹

Region: Africa

Country: Senegal

Crop/Feedstock: Oil palm

Practices: Provision of improved agricultural inputs and/or equipment; Inclusion of smallholders in bioenergy supply chain; Contracts with local goods and service providers; Development or improvement of local infrastructure; Training and education programmes; Development or improvement of energy infrastructure; Provision of energy for local and/or domestic use; Gender-sensitive corporate conduct;

Issues: Access to Land; Local Food Security; Inclusion of Smallholders and Income Generation; Community Development; Energy Security and Local Access to Energy; Gender Equity

NOVIS is a private company that carries out projects in developing countries. The results of the projects are plants for the production of power, heat and cooling from renewable sources. NOVIS delivers innovative, reliable and economical solutions. NOVIS currently has two projects in Senegal to increase energy access. The first is a biogas project in the Casamence region and the second is a rural electrification pilot project in the Fatick region.

Biogas project in Casamence region:

Issue: Local Food Security

Practice: Provision of improved agricultural inputs and/or equipment (PR)

Thanks to the high potential of the region in terms of agricultural (fruit, vegetables) farming, access to electricity will improve the irrigation of the fields (irrigation pumps need adequate energy supply) and create the possibility to set up small agricultural processing and trading businesses.

The introduction of biowaste digestion creates the opportunity for replacing the wood cookers with gas cookers based on renewable gas from digestion. Although this will not be achieved during the project duration, Novis has seen in various other countries that this improvement can be made relatively easily, thereby reaching a large group of consumers. According to the preliminary calculations already

made by Novis, the establishment of a second digester for the generation of cooking gas could be a feasible option for the region.

The village currently has a system in place for joint production of compost using organic waste. The project will make use of this existing system, feeding the same organic waste into the digester and providing high-quality organic fertilizer for the farmers as a by-product of power generation.

Issue: Income Generation and Inclusion of Smallholders

Practice: Contracts with local goods and service providers (CN)

The farmers of the villages will themselves set up a logistical system for collection of the biomass for the biogas plant. In addition, the farmers (i.e. most of the households) will be users of electricity themselves and thus have an interest in maintaining the proper operation of the plant. Farmers supplying biomass will receive a fee per tonne of biomass delivered to the plant. As with the collection of biomass, the collection of the electricity user fees will be organized by the community under final responsibility of the Municipality. In addition, the farmers will receive the waste product of the biomass they deliver to the biogas plant for use as organic fertilizer.

¹ The information included in this document is based on information provided directly by the producer, which was not verified by the Food and Agriculture Organization of the United Nations (FAO)



Biomass: peanut shells

Issue: Energy Security and Local Access to Energy

Practices: Development or improvement of energy infrastructure (DE); Provision of energy for local and/or domestic use (PE)

In addition to providing access to energy to the village households, the project will provide, 24 hours per day, access to energy to primary schools, small clinics, a radio station, a drinking water supply system, street lights and a range of agricultural processing businesses, shops and other small enterprises. This project will contribute to achieving the objectives set by the Senegalese Government in terms of providing access to renewable energy to rural communities. Energy alone is not sufficient for creating the conditions for economic growth, but it is certainly necessary. The project will also provide much needed electricity to foster community development. The availability of electricity is expected to attract new businesses and create new employment, thereby reducing the migration of young people.

Issue: Gender Equity

Practice: Gender-sensitive corporate conduct (GC)

Women are actively contributing to the project as representatives of the community. These women are either taking part in the existing advisory board to the Municipality, or as delegates representing the village members. As such, women will be influential in terms of the organization and management of the project. Novis intends to offer to the community, as a spin-

off to this project, a Small and Medium Enterprise (SME) development support service, giving advice and training to the inhabitants who are interested in starting a business.

Challenges

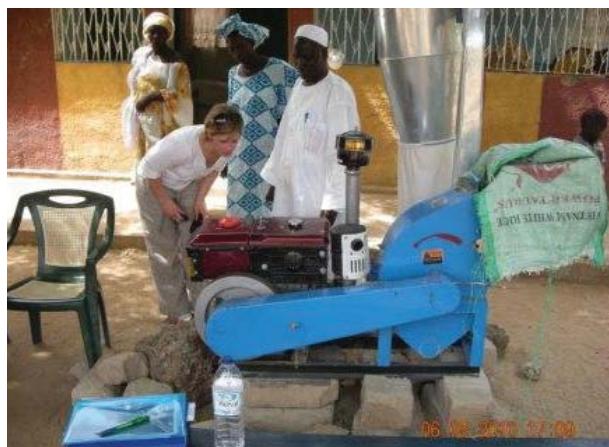
- Safety standards - Houses belonging to low-income households, particularly in rural areas, often fail to meet the minimum construction standards required. For each of the newly connected households, an inspection will have to be done in order to identify the major risks.
- Location - Although Casamance is considered a relatively unsafe area to travel, the actual situation is such that large parts of the province experience no violence or disturbances whatsoever. It is beneficial for the project that the local manager of Novis Senegal comes from Casamance and knows the region very well, but there are still challenges with local security.

Rural electrification project in Fatick region

Issue: Community Development

Practices: Development or improvement of local infrastructure (DI); Training and education programmes (TE)

In structuring the project, it has been important to develop the business model and the electricity supply in a way that is self-sustaining in the long



Gasoline-driven millet mill, to be replaced by electric mill



Biomass: sawdust

term, without additional means of the project owner or the involvement of third parties. Since project implementation there has been a substantial improvement of living conditions: security, health, income, etc. The project has also provided a way to promote and raise awareness about renewable energies, especially biomass, in Senegal.

The electricity prices have to be socially acceptable and financially sustainable for the inhabitants. Since August 2009, the project has not been subsidized by the Senegalese Government and has not resulted in price increases for the consumers.

To date the project has resulted in the following benefits for the community:

- Sale of biomass to the village utilities brings additional income for the families, estimated at EUR 12-15 per year per household;
- Operation of small commercial machines enables additional value added on site and higher income;

- Electricity facilitates and improves living conditions;
- The electrically-powered sorghum mill facilitates the work and significantly reduces the amount of work required, with women having more time for other activities;
- Influence and reputation of women as co-owners of the millet mill rise in the village and in the surrounding area; and
- For each 5 kw of energy production capacity, one additional business is established, e.g. sales of compressed biomass as a wood replacement, sale of cold water, welding, battery charging, water purification, cold storage rental, tools services and other businesses.

Issue: Energy Security

Practices: Development or improvement of energy infrastructure (DE); Provision of energy for local and/or domestic use (PE)

Currently, the only way to obtain electricity in the Fatick region is to charge batteries with "hawkers" who drive through the country with car batteries. As there is no possibility of connection to the national grid for the foreseeable future, the independent power production and installation of an island network are the only appropriate way to provide power supply in this area.