



Leguruki Village: energy use profile

Prepared for visitors to Leguruki Energy Projects.

Introduction: Leguruki Village is located on the slopes of Mt. Meru in Leguruki Ward, King'ori Division of the Meru District in Arusha Region. Village population is estimated to be 4000 inhabitants in 2007. Total village area is 2185 hectares of which 1740 hectares are suitable for agricultural activities. More than 90% of the villagers are subsistence farmers. Other sources of income include livestock keeping, trading and employment in schools, churches and businesses.



Figure: Energy team for Leguruki Village

Energy profile: Leguruki village is not connected to the national grid electricity. The closest village where there is electricity is King'ori Madukani which is located 6 km south. Majority of the villagers use kerosene for lighting and an average household spends approximately Tsh 9,000 per month on kerosene. Other means of lighting include dry cell batteries, car batteries and generators. A

household uses four dry cell batteries per month for torches and radio. Each battery is sold at Tsh 600, making a total expenditure of Tsh 2400 per month.



MFP plant installed at Leguruki

Battery charging services is provided by one of villagers who own diesel generators in the village. One full charging of a 70Ah battery is Tsh 1000. On average a fully charged car battery can be used for 10 days.

There are about 10 villagers owning generators and majority are located at the center of the village. Generators owners don't sell electricity to neighbors. Jatropha grows well in Leguruki and surrounding villages and is used for fencing and demarcation of farms and household land. Leguruki also grows sunflower whose oil could as well be used as a fuel.

The major challenges faced by villagers with regard to energy includes lack of cheaper options to generate electricity, lack of skilled technicians for installation, repair



Improved cookstove installed at Noseiya Primary School in

and maintenance of solar PV systems, high consumption of firewood and charcoal, unavailability and lack of knowledge on efficient/improved cook stoves. These issues were identified during a participatory energy planning meeting at the village in May 2007.

TaTEDO's Interventions: In August 2007, TaTEDO initiated energy project activities in Leguruki village. One energy service platform, also known as *multifunctional platform*, was installed and started providing milling and dehusking services. During evenings the plant generates electricity to power 60 houses and businesses which are connected to a small minigrid. TaTEDO is working with villagers and Meru District Cooperative Officer to develop management and operation structure. In February 2008, it was decided that the platform businesses will be managed and run by electricity consumers cooperative..

In October 2007, TaTEDO introduced improved cookstoves in Leguruki. One improved institutional cookstove was built at Noshaiya Primary School located in the north of the village. During the same period, improved charcoal baking technology was introduced through two local entrepreneurs, one being the owner of a popular restaurant in the village. Introduction of these technologies has raised significant awareness and interest of people from the village and outside.

Impact: Presence of electricity has benefited at least 40 households and 20 businesses where they can operate for longer hours after dark and have been able to initiate new businesses such as barber shops and video shows. Street lighting has improved security during evenings while children are able to study longer and under better lighting. Firewood consumption at the school has decreased dramatically to almost half from use of 8 m3 of wood per week.



Figure: Mr. Luka Mbise's family in Leguruki is happy with the good lighting at their home. The family can now have the bible reading sessions



Good Practice Assessment for Bioenergy Projects

General data

1. Name of Assessor Rainer Janssen
2. Institution WIP Renewable Energies
3. Date of Assessment December 4, 2009
4. Name of Project Leguruki Village Multifunctional Platform
5. Contact name at project Estomih Sawe
6. Place of Project Leguruki Ward, King'ori Division of the Meru District in Arusha Region, Tanzania

7. Characteristics of Project

Tick if project is a initiative from :

private community government NGO other

8. State how do you know the project

a) information in annex b) field trip a) and b) other
specify other

9. After reading the characteristics of the project (in Annex) please assess the following principles according to the scale:

- 1 The project does not consider this principle (0%)
- 2 The project covers this principle partially <30%
- 3 The project covers partially this principle in 30-70%
- 4 The project covers partially this principle in <70%
- 5 The project fully covers the principle (100%)

Principle	Name	Score
1 Comments	Good agro-ecological and forestry practices (biodiversity, soil) Jatropha as fencing and demarkation of farms and household land. No specific measures are undertaken to improve agro-ecological practices. Press cake may be used for manure in the near future and thus completes the nutrient cycle- this is still under scientific study as toxicity needs to be ruled out.	3
2 Comments	Not affecting water supply and quality The Arusha region in Tanzania is well supplied with water of sufficient quantity and quality. No specific measures are undertaken to improve water supply and quality.	4
3 Comments	No land use change that detrimentally affects food security The village has used land which is not used for growing crops, i.e. fences and demarkation of farms, in addition to their normal crops. This activity was undertaken to ensure no conflict between food and fuel.	5



- 4** **Community participation (from planning)** 5
Comments Community mobilization is a very crucial aspect using a bottom up participatory approach, for management of facilities, including the tariff setting, bill collection. The initiative has resulted in improved awareness for the processes undertaken.
A preparatory planning meeting with the village population took place in May 2007 to ensure the ownership of the project of the rural population. Regular meetings take place involving the villagers.
In February 2008 it was decided that the platform businesses will be managed and run by electricity consumers cooperative.
- 5** **Women's participation (from planning)** 4
Comments With domestic electricity in place, women can complete their household chores more easily after sunset. The project has installed improved cooking stoves. This initiative will reduced the duration for cooking and has also improved the indoor air quality within the households
Street lighting has improved security during evenings.

Women are actively involved in the Energy Team of Leguruiki village.
- 6** **Skills transfer (management, business, agriculture)** 4
Comments The presence of electricity has benefited at least 20 businesses which can now operate for longer hours. New businesses (barber shop, video shows) have been initiated. Support for business creation is provided by the project implementing organisation.
After the commissioning of the power plant, people from the village itself were trained to operate and maintain the equipment. They are also capable of maintaining the distribution network, the oil expeller and the filter press. An Energy Team was established to oversee the whole electrification project.
The villagers will also have the skills to manage the supply of Jatropha seeds and ensure that they are available in adequate quantities to keep the system running
- 7** **Community inclusion in business or economic model (Contract with investor or NGO)** 4
Comments An Energy Team has been set up, which oversees the operation and management of the power plant (including collection of fees).
- 8** **Added value in the community (individual, money, assets, land, co-products)** 4
Comments The energy service platform (multifunctional platform), was installed and started providing milling and dehusking services. During evenings the plant generates electricity to power 60 houses and businesses which are connected to a small minigrid.

In addition, TaTEDO introduced improved cookstoves in Leguruiki. One improved institutional cookstove was built at Nosheiya Primary School located in the north of the village.
Improved charcoal baking technology was introduced through two local entrepreneurs.

Reduction of expenditures for lighting (prior source: Kerosene).
- 9** **Improvement in services and infrastructure (energy supply,** 4



Comments	health) reinvestment of revenue within the community Improved stoves reduce IAP. Firewood consumption at the school has decreased dramatically. New services include lighting in the evenings for housework and chirdre studies, streetlights for improved security, a barber shop, video shows, milling and de-husking services.	
10	Compliance with National policies and/or guidelines for bioenergy projects in place	<input type="text" value="4"/>
Comments	The project is fully in line with Tanzanian national policies on increasing access to energy of the under-served rural population. The village of Leguruki is 6 km away from the grid. The project is also in line with the National Poverty Reduction Strategy Paper (PRSP).	
11	Compliance with Local programmes, regulations and/or plans in place	<input type="text" value="3"/> (default)
Comments	No information available.	
12	Respect Land rights and avoid displacement	<input type="text" value="5"/>
Comments	This project does respect existing land tenure systems and land rights. The project will not lead to any displacement of rural population.	
Overall assessment		<input type="text" value="49"/> Out of 60

Additional comments on the project

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