Against Fuel Poverty with Biomass Briquettes
Village of Told, Real Pearl Foundation

With the biomass briquette project we introduced an approach to community development and poverty alleviation that is unique in Hungary. That is finding simple, cheap and sustainable technologies to meet the needs of local people. Sustainability does not have to be a topic for the intellectual, better-off segments of society. To the contrary, it can be something that the poor can excel in, and set example to the rest. At the end of the day they are much more aware of problems associated with energy and are experts in efficiency (saving) and recycling.

The project takes place in the village of Told, which has a population of 80% Roma, most of whom live in so-called deep poverty. The main goal of the project was to provide (at least in part) a solution to the difficulties of keeping warm in the winter, to the limited access to firewood. This was done by introducing a simple technology – biomass-briquettes – with which the community can produce clean, good quality heating fuel for themselves from local materials.

This project proved that sustainable technologies can not only provide answers to the physical aspects of poverty, but can be a very powerful tool for community development, and empowerment.

Real Pear Foundation

The Real Pearl Foundation is a non-profit civil organization whose primary focus is art education, talent development, support of socially disadvantaged and Roma children, family care and knowledge sharing through training. We operate in one of the most disadvantaged regions of the country and of our 670 students 250 live in deep poverty, most of whom are of Roma ethnicity. We also engage in community development, and are working on a model for social inclusion; this work is concentrated in one of the small villages of our support network, called Told. (We engage in social work in 13 settlements).

Project Idea and Context

The village of Told is a dead-end-village in one of the most disadvantaged regions of the country; due to restructuring and decrease of activities in industry and agriculture it has undergone drastic impoverishment. In recent decades the better-off families left and poor, mainly Roma, families moved in. There are 360 people living in Told, and only 7 are employed. Most houses are in very bad condition without running water, there is no sanitation system in the village and the gas network only reaches the main street.

Energy poverty is more and more prevalent. Keeping adequately warm requires a lot of fuel wood. This is a huge expense for the families, even when only one room is heated. There is very little forest in the area, all of which is privately owned. To bring wood from there carries the risk of a large fine or prison. It is common that by the end of the month there is no money to buy wood, and often items are burned which have harmful emissions both to human health and the environment.

The idea of producing biomass-briquettes in order to combat this problem came as a result of the research of an Industrial Ecology masters student, Nóra Feldmár in 2011. The underlying principles was to find an appropriate technological solution, which answers the locals' needs and at the same time draws on local resources, knowledge and does not depend much on external factors. It was also an important aspect to develop an activity which can generate employment locally.

Goals and Objectives

Our foundation aims to encourage families to become self-sufficient and to find ways of creating jobs locally. We want to break the stereotype of people living in deep-poverty by proving that they can and want to change their circumstances if the opportunity is given to them.

The goal of the project was to introduce a technology to the community of Told, with which the locals can produce cheap, clean and sustainable heating fuel for themselves made of locally sourced materials. This is to provide an alternative to poorly accessible, expensive wood as well as to reduce the burning of inappropriate materials (plastic, rubber, treated wood, etc.).

The American Legacy foundation developed a technique with which biomass-briquettes can be made with very simple, mainly hand powered machinery. Briquettes can be made of practically any plant-based by-product or waste, such as straw, fallen leaves, grass-clippings, stalks, sawdust and paper waste. This technique has been introduced in over 45 developing countries.

The project aims were to set up a small production facility, to train a group of locals and to distribute the briquettes that were produced. A publication will be made describing the outcomes of the project. Other aspects of heating are researched such as insulation and stove technologies in order to provide a complex solution for the problem of heating. An improved briquette press is designed and prototyped.

Activities and Milestones

The the biomass briquette production facility was set up, with the active involvement of locals and the local municipality (15 July-5 August):

- Experimentation and testing of the process
- Exploring available local raw materials
- Sourcing large amounts of raw materials (agricultural residues for free)
- Designing and building a dryer house

A brigade of local workers was recruited and trained (July-August):

- The local municip. allocated 3 workers to work in the briquette team
- The rest of the workers were volunteers. Most were ones to whom the municip. could not provide a min. of 30 days of employment, which is the condition to receive social benefit for the following year. By working in the briquette team they could secure this.
- The initial training was provided by Nora Feldmar (industrial ecologist). As new people joined the team, the others trained them
- One of the local volunteers was managing the workflow and allocated appropriate tasks.
- Around 5 people, including the manager, stayed even after their 30 days were signed off.
- 2 month of full operation: 24 workers (daily staff 5-13 workers)

We held a celebration at the end of the production season, where some of the local women prepared a meal for all the workers who took part, and to the staff of Real Pearl. This took place at the cultural centre of the village.

The distribution of briquettes took place between November and December.

Research was conducted of suitable clean burning stoves, and we got into contact with specialized masonry stove-builders

An expert, Titusz Igaz, came to hold a presentation on straw-bale building, and on the possible

insulation of the houses. We also did a survey of two house with him. (10 Nov)

We designed and manufactured a new, more efficient hydraulic briquette press.

Results

The biomass-briquette technology was tested and adopted to the local conditions, raw materials were obtained and production was taken to a stage where a large amount of briquettes were produced daily.

More than 20 locals (public workers and volunteers) were trained in briquette-making and a local manager emerged with his exceptional motivation and involvement. All who took part see the potential in the briquettes as a viable heating fuel and an enjoyable workplace. The briquettes are now being used, and locals are satisfied with its heating properties.

Around 30 thousand briquettes (7 tonnes) were made which is being distributed among the families whose members took part in the project. This is only a contribution to their heating fuel need for this winter, but the pilot gave enough proof that next year most of the village's need can be supplied.

Research was made in terms of insulation and improved stoves, and the locals are very keen on learning to build their own stoves from simple, cheap materials. Professionals (such as an architect) have paid a visit to the village to assess the state of the houses.

The locals became more aware of the issue of burning inappropriate materials and its harmful effects.

The project received considerable attention through our blog, website and videos made by other organisations.

17 workers are ensured their social welfare payment for the next year as they have 30 days of volunteer work certified by our foundation.

Funding

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