EEP
ENERGY AND ENVIRONMENT PARTNERSHIP / SOUTHERN AND EAST AFRICA

INNOVATIVE STOVES AND WASTE BIOMASS

Linked to prisons, tinsmiths, sawmills and town councils in Zambia

PROJECT LOCATIONS AND TASKS

KAMFINSA:

- Pelletize sawdust
- Establish storage of dry sawdust and pellets for transport to markets in Kitwe and Lusaka

KITWE:

- Establish local dry storage of sawdust and pellets
- Distribute sawdust for use in the Saw Duster
- Sell pelletized sawdust for use in the Peko Pe stove
- Train tinsmiths and prison inmates in stove manufacture.
- Promotional stove campaigns

LUSAKA:

- Establish local dry storage of pellets
- Sell pelletized sawdust for use in the Peko Pe stove
- Train tinsmiths and prison inmates in stove manufacture.
- Promotional stove campaigns

OTHER TASKS:

- Preparation for carbon credit financing

PROJECT EEP FUNDING

EURO 200 000

EXPECTED NUMBER OF STOVES

5 000

PROJECT CONTACTS

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Guiding vision for the project

"First a charcoal free Kitwe, and with time, a charcoal free Zambia"
Nick O'Connor, Ensis Development

Project background

- ✓ Deforestation is a priority environmental challenge in Zambia. Wood harvesting for charcoal production seems to be one of the main causes for forest loss.
- ✓ Households accounted in 2007 for about 88% of woodfuel consumption with cooking and heating being the major household use. The household sector is the largest consumer of energy and initiatives are needed to reduce the high consumption of woodfuel. Dependence through sustainable provision of affordable, reliable and innovative energy methods to rural and urban households are needed to raising productivity and standards of living.
- ✓ Existing stoves and production methods for charcoal represent an inefficient use of energy. Associated negative impacts are emissions contributing to climate change (methane, CO2) and substantial releases of toxic emissions (CO, PM) in the kitchen environment.

Peko Pe

Saw Duster

Use of waste biomass

Local stove manufacture

Use of new energy efficient stoves

Ensis Development Ltd

Miombo

NIRAS

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PROJECT PARTICIPANTS

ENSIS DEVELOPMENT ltd; a Zambian development company and the lead project participant. The company specalizes in sustainable development and management. It is part owner in the sawmill Rainlands Timber, a sawmill on the Copperbelt that prides itself in utilising its waste resources. Ensis Development operates a tree plant nursery and trains prisoners of Kamfinsa Prison in agro forestry and permaculture.

MIOMBO AS, a Norwegian company providing technical assistance to rural development based on the principles of economic, ecological and social sustainability. A specific interest is taken in household energy and the use of clean burning gasifier stoves for both cooking and biochar production.

NIRAS AS, a large Danish multidisciplinary international consultancy company with almost 1,300 staff. NIRAS provides technical assistance on carbon trading and carbon credit financing for public and private entities.

RAINLANDS TIMBER LTD, operates a sawmill at Kamfinsa (right photo). The company will supply sawdust to the project as well as manpower and knowledge on pelletizer operation.

HOME ENERGY Ltd will manage and implement the scale-up of the project in Zambia.

Home Energy

Project profile

- ✓ An innovative concept is to combine new stove technology with the flexibility to use any kind of waste biomass, including easily available saw dust and corncobs. Such a concept would cater to simplicity and with its low cost level address poverty alleviation.
- ✓ Easily integrated into such a concept is re-integration of prisoners and the use of prisoners as skilled stove producers.
- ✓ New innovative stoves, which are energy efficient, clean burning and biochar producing, combine effectively energy, health and agriculture. They assist in the mitigation of climate change through reductions in deforestation and through maintaining areas of carbon sink.
- ✓ Inherent to such a new innovative concept is the development of new value chains. Charcoal's dominant use is based on this fuel's attractive price performance characteristic. Replacement of charcoal is a long term effort, but will start with new value chains for waste biomass and for manufacturing and distributing clean burning and fuel efficient stoves.
- ✓ The stoves used in the project are complimentary in the market as the low cost Saw Duster being specified for easy accessible sawdust in the Copperbelt and the Peko Pe stove being flexible to other biomass fuels as well as being particularly clean burning. The Peko Pe stove produces biochar of high quality for use as a carbon sink and as a soil improver.

Project objectives

- ✓ The long term objective is to combat the accelerating depletion of indigenous forests driven by the charcoal industry and to reduce the demand for fuel wood by introducing a new value chain of fuel efficient and clean burning stoves along with suitable fuel. Specific objectives of the current phase of the project are to: pelletize sawdust for sale in Kitwe and Lusaka; transfer knowledge on standardized stove manufacture to tinsmiths and prison inmates in Kamfinsa and Lusaka; engage in promotional campaigns for energy efficient stoves and prepare for carbon credit financing.
- ✓ The specific objectives and the associated activities provide a framework for a later follow-up phase, covering the entire Zambia.

Ensis Development Ltd Miombo NIRAS