

VYAHUMU TRUST:

STRENGTHENING RURAL OIL SEED PROCESSING IN TANZANIA

Back in December 1996 the ELCT launched an Oilseed Processing Project with the objective of improving the economic returns of small oilseed farmers by supporting individuals and groups to establish and operate oil mills and provide oil-expelling services to farmers. Earlier studies had shown that the value addition that can be created through the extraction of edible oils from oilseeds is very significant, ranging between 150% to 300%.

The Oilseed Project has now developed into a trust, the VYAHUMU trust.

The main goal of the current programme is to increase the level of income of small sunflower farmers in selected rural areas of Tanzania through increased returns from their oilseed production.

The area covered in the first phase included Iringa, Dodoma and Singida. The area has now been widened to include five administrative regions: Iringa, Morogoro, Dodoma, Singida and Arusha.

Main Achievements so far

The transfer and availability of improved technology has unlocked new economic and income earning potentials for rural peasants and entrepreneurs (sellers of oil, mill owners and fabricators). It has also served as a springboard for small-scale industrial development.

The income level of small farmers in selected areas has risen through increased returns from their oilseed production. On top of this the project has contributed to modernising agricultural processing methods and to the establishment of small rural industrie.

Farmers have expanded their production of oilseeds and the consumption of oil has increased. Farmers make better use of formerly uncultivated land. Part of the extracted oil is used for home consumption, which is an important health and dietary benefit.

YAHUMU has facilitated the technology transfer and developed the capability for manufacturing the expeller in three workshops in Tanzania.

A quality assurance system in expeller manufacturing is in place.

In many of the areas, where mills are installed, small repair and maintenance workshops provide support services to mill owners.

Sunflower growers could increase their income from oilseed cultivation by a net margin of about 75%. From each mill the community of users (probably around 100 farmers) have earned an additional income of 10,000 to 15,000 USD per season.

Farmers who do not use the milling services benefit indirectly through higher prices for their sunflower seed in their areas and lower prices for cooking oil in village shops.

Employment and income generation has been initiated through the presence of mills: tea shops and restaurants next to mills, mechanical workshops that provide repair and maintenance services and the demand for transport services (ox charts) for carrying sunflower to the mill.

Beneficiaries

The primary beneficiaries of the project are and will remain small oilseed farmers and their

The primary beneficiaries of the project are and will remain small-holder farmers and their communities in selected rural areas in Tanzania.

For more & detailed information please contact:

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last modification 27.07.04 by

bagani GbR

Production of the Sayari Oil Expeller by the VYAHUMU TRUST in Tanzania



Short description of the project of the VYAHUMU TRUST



the cage made of steel bars



the worm srew

some technical data:

capacity	70 bis 100 kg seed / hour
required power	3.5 KW

engine / motor	8 hp
type of seed	any hard seed with more than 25 % oil content
residual oil content	10 to 12 % in the press cake
price	3.200.000 TSh, appr. 2.000.- USD

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Introduction of Jatropha as an Income Generating and Energy Source Project to household farm holds of Ngara District, TANZANIA

Ngara District – Rulenge Ward is part of the vast Rulenge Diocese that spans 3 administrative districts (Biharamulo, Karagwe and Ngara) in the very west of mainland Tanzania. The majority of the households are small scale subsistence farmers. The average income of rural households is below 1\$ per day. Many constraints contribute to the adverse household economy, the main being: (a) the negative influence of a refugee influx presence in the area (from Burundi and Rwanda), (b) the remoteness of the area in the context of Tanzania and (c) the absence / little export of agriculture produce to other districts. Sustainable agriculture development interventions (such as the Jatropha project) are welcomed to alleviate the people from abject poverty. The *Jatropha curcas* L plant grows naturally here, though people are ignorant of the social and economical potential existing in exploiting the use of this crop although the benefit of the crop could be substantial. Several Local Development NGOs have deep rooted existence in the area. Their agriculture extension infrastructures are available to willingly take aboard the extension effort required to make farmers adapt production of this energy source crop.

The objectives of our efforts are:

1. Promotion (agric extension) of the *Jatropha curcas* L crop to farmers in Rulenge ward, as an income generating and rural energy source.
2. 2. Training of the community in the extraction of oil from *Jatropha* seeds as a rural energy source, especially for the use of local oil lamps.
3. Training of the community in the processing of soap from *Jatropha* oil.

Item 1 is part of the agricultural programme of Rulenge Diocese's (ADIP) activities in promoting sustainable agriculture.

Item 2 and 3 are part of Rulenge Vocational Training Centre's (RVTC's) activities in promoting appropriate technologies for sustainable rural development.

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Jatropha in Rulenge



Planting of Jatropha at the beginning of the rainy season. Right picture 4 weeks after planting. In the district, Jatropha is usually used as a support for vanilla. Other uses are unnown.

Jatropha development in Rulenge



existing Jatropha trees



3-months old Jatropha cuttings



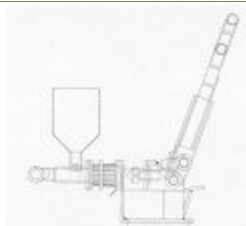
information campaign on Jatropha



extracting oil in Rulenge

[To read a short article about the project, click here!](#)

The Bielenberg Ram Press



Drawing of the Ram Press



The piston



The hopper



The cage



**The outlet of
the presscake**



Demonstration of the bielenberg ram press in a village



**Women working with the ram
press**

[Economic Analysis of Soap Production with the Ram Press](#)

Economic Analysis of Soap Production

Oil Extraction with the Bielenberg Ram Press

The basis of this calculation is the exemple of a village worker in Mali, who bought seeds from the village women and sold the soap on the local Market.

Description	Quantity	Unity	Price per unity US\$	Amount in US\$
Inputs				
Seeds (give 3 liters of oil)	12	kg	0,1	1,20
Caustic soda	0,5	kg	1,2	0,60
Labour (4 h for pressing, 1 h soap production)	5	h	0,2	1,00
Depreciation/maintenance (5 years, 10 t/a, 240,-)		US\$/kg	0,02	0,24
Total expenses				3,04
Revenues				
Presscake	9	kg	0,03	0,27
White soap	28	pieces (170 g)	0,15	4,20
Total revenues				4,47
Net Profit				US\$ 1,43
Profit per liter of oil				US\$ 0,48
Profit per kg of soap				US\$ 0,31
Price per kg of soap				US\$ 0,89

If the results of this calculation are extrapolated to the situation of an average village in the Jatropha area, which has about 15 km of Jatropha hedges with a possible harvest of 12.000 kg of seeds (0.8 kg of seeds per m of Jatropha hedge), the monetary cash which is earned by the village people, is more than 3.000 US\$ per year (1.000 times the result of the above mentioned production with 12 kg of seeds):

Sale of seeds	12.000 * 0,1	US\$ 1.200,-
Labour for oil extraction	5.000 * 0,2	US\$ 1.000,-
Net profit of the production unit	1.000 * 1,43	US\$ 1.430,-
Total village income per year		US\$ 3.630,-

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[Bielenberg Ram Press](#)

**DIRECTOR GENERAL DEPARTMENT OF ALTERNATIVE ENERGY AND
EFFICIENCY
ROYAL GOVERNMENT OF THAILAND**

Jatropha Curcas L



This workshop was organised within the frame of a feasibility study:
Exploitation of the potential of *Jatropha curcas*
and the possibilities of the integration of this plant
into the fight against erosion (LAE)



The national coordinator of the PLAE testing the ram press to extract Jatropha oil



The hand (ram) press attracts the interest of the participants



Exit of oil



Demonstration of the production and use of the Jatropha lamps



A Jatropha oil coker



Production of soap (oil, water, caustic soda)



Cutting the produced soap into pieces



Participants wait for continuation



Participants watch the demonstrations