

# Major Findings of the 4<sup>th</sup> Seminar on Jatropha for local development

7-8 November 2008  
Chimoio, Mozambique

## 1. INTRODUCTION

The fourth Seminar on Jatropha for local development in Chimoio, Manica Province, Mozambique, is a follow up of three previous seminars, (Dec 2005, Jan 2006, July 2007) where some 20 people from various organisations in Mozambique, working with Jatropha, met and exchanged experiences. The seminars are all organised by FACT-foundation, a Dutch NGO working in various countries to assist partners in developing countries with capacity building on production, use and commercialisation of bioenergy for local development. (<http://www.fact-fuels.org/>) FACT together with ADPP (Humana – People to people) initiated a Pilot Project on Jatropha oil for community development in Cabo Delgado Province, Mozambique, in November 2006. After 2 years, the project is now halfway and important knowledge and experience can be shared. The seminar series will be continued until 2010 and is establishing a biofuel stakeholder network whilst building capacity through exchanging experience and best practice.



## 2. LESSONS LEARNED

**Selected findings of the Jatropha sector in Mozambique:**  
Few projects in Mozambique are at present working with small farmers as growers of Jatropha. Several small communities have seen their plantations fail due to insufficient training on Jatropha cultivation. Severe pest attacks have taken out a major part of small scale plantations.

The FACT project is one of few projects covering all steps of the value chain on local level. Other examples exist showing that all stages in the value chain can be performed locally in Mozambique, from agricultural production, harvesting, oil extraction from seeds, engine modification, biodiesel processing and marketing. Experts further confirm that socio-economic benefits are maximized when local communities are involved in value added activities. FACT foundation consequently promotes value added processing on local level and is happy to share their experiences.

A number of commercial jatropha plantations are initiated in Mozambique, the majority expecting first harvest early 2009. Selected larger scale jatropha projects are: ESV BioAfrica – Inhambane, Energem – Gaza, Elaion Africa – Sofala. Estimated national plantations of jatropha, Dec 2008: 4000ha.

According to participants, very little Jatropha oil is pressed in Mozambique at present, even though a number of companies have oil presses in place. Several individuals are pressing other types of vegetable oil and, occasionally, modifying it to biodiesel used for self consumption in tractors or generators as a 50/50 blend with normal diesel.

Several participants have further witnessed existing market opportunities, with SVO seemingly being a more lucrative product at present than processed biodiesel.

### FACT-ADPP Pilot project Mozambique:

- Introducing biofuels in a certain region for energy production requires a careful imbedding in the local situation. In the project area in Mozambique, Cabo Delgado, where 'slash and burn' shifting cultivation agriculture is practiced, the Farmers Clubs, with its typical organisation as introduced by the project partner ADPP, proved to be the most important actors in the project; their role is crucial.
- The combination of food crops and *Jatropha* is a "conditio sine qua non" for smallholder farmers. By placing *Jatropha* fences around their fields with vegetables, the fences keep out the animals, while the food crops ensure field maintenance in the first years when *Jatropha* is not yet giving yield
- Project duration of three years is generally too short. To obtain sufficient harvest the project should preferably cover a minimum of three rainy seasons. As a result, the project duration in Mozambique will be adjusted to 4 years.



### Elaion Africa, Dondo-Savane, Sofala Province:

- Higher pH in soil from, for example, charcoal ash gives increased growth of *Jatropha* plants which leads to earlier flowering and production of seeds.
- Seedlings can be kept above ground with bare (but covered) roots for a couple of weeks.
- Cuttings treated with hormones (powder) at foot, for growth increase of roots did not make difference.
- A new way of making low cost polybags of plastic sheets has been developed.

### Research on *Jatropha* production, pests and plagues

As part of the FACT Pilot project, comprehensive collection of pest evidence in *Jatropha curcas* was performed in the project areas in collaboration with Eduardo Mondlane University. The pest survey is currently being extended to cover the whole country with support from other donors. Some projects are performing additional experiments; among them the Elaion Africa in Sofala.



### Interim conclusions:

- Seeds perform best if planted directly without pre-treatment
- Planting period has large effect on pests collected, i.e. planting in February -March gave most pests, direct seeding planting is best done before start of rainy season in November
- *Jatropha curcas* performs almost as well in un-shaded nurseries as in shaded ones provided they are watered sufficiently.
- By two-three times pruning, the number of branches doubles and 87% better yield is obtained.
- Great variety in growth for different areas. Best performing areas are sandy and hot, but with sufficient rain, like Cabo Delgado (ca 1000 mm of rain) also Southern part of Manica and Tete.



- Although cassava and Jatropha are of the same family of euphorbiae, no cases are reported where severe pest like mosaic virus is transferred between them.

### Market analysis:

- There is a demand for seeds and plant oil but market players do not know each other and have problems finding each other.
- Demand for seeds exists, either for plantations or for pressing oil; prices differ in-between regions and this distort the market.



- Supply of seedlings for plantations also exists (ex Elaion Africa Lda).
- Jatropha oil is not yet pressed in significant scale in Mozambique.
- Seed price presently paid to farmers in Quirimbas park is 5 Mtn/kg, a more sustainable price lies around 2.5 to 3 Mtn /kg.
- In villages around Bilibiza (150 km from Pemba) the locally sold diesel is 30% higher (50 Mt) than diesel in Pemba (38.5 Mt), thus giving a concrete economic incentive for producing biodiesel.

### 3.7 Government policies

- The Government of Mozambique has presented a final draft for a proposal of biofuel strategy and is soon expected to legislate on the proposal.
- The Government of Mozambique has shown interest in projects focusing on local energy solutions from biofuels.
- Rough zoning maps (1:1.000.000) exist to analyse the level of available land for agricultural activity. It is noted that more detailed provincial level maps are needed to assess sustainability of increased agricultural investment.

- The Government has within its biofuel task force decided to develop Mozambican biofuel sustainability standards as a response to market requests of biofuel sustainability criteria. This is a process that will be initiated in 2009, coordinated by CONDES and supported by GTZ-ProBEC.



28 participants attended the seminar, representing Mozambique, Malawi, Zimbabwe, Austria, Germany and the Netherlands.

Presentations by H.Maposa, B.Afonso, F.Nielsen and J. de Jongh of FACT pilot project; M Speiser from Elaion Africa Ltd, A.Serra from Projecto Comunitario de Carbono de Nhambita, and C.Zana from GTZ-AMES, can be found on the FACT website: [www.fact-fuels.org](http://www.fact-fuels.org).

A demonstration of the Binga Oil lamp burning on Jatropha oil, pressed by the Namainda project was demonstrated by C.Zana from GTZ-AMES (<http://www.jatropha.de/lamps/binga-lamp.htm>).

More information about the seminar can be obtained from Jan de Jongh, FACT foundation [info@arrakis.nl](mailto:info@arrakis.nl) or Anna Lerner, GTZ-ProBEC, [anna.lerner@gtz.de](mailto:anna.lerner@gtz.de)

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### Annex: List of participants

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