

Farmers' Club Report

Renewable Energy for Rural Development- Oio

ADPP GUINÉ- BISSAU

To The GAIA-Movement, Period between September 2013 and August 2014

Project Name: Farmers' Club / Renewable Energy, Oio

Purpose: Production and use of *Jatropha* as fuel

Organisation: ADPP Guiné-Bissau

Period Covered: September 2013 to August 2014

Introduction

The Farmers' Club is a project operating in three ADPP Guine-Bissau departments, such as: the Department of Commerce, Community Projects, Farmers' Club. The objective of the Department of Commerce is to process, improve and sell agricultural products, and any other possible products, using 7 centres built and furnished with processing machinery and 8 generators that will be converted to work with *Jatropha* oil. The *Jatropha* plant, traditionally used to create a protective boundary for villages and crops, can be used at low cost in the production of biofuel obtained from its processed seeds. Based on this idea, ADPP Farmers' Energy Club has set itself the target of increasing quantities of the plant, in order to have enough oil for the functioning of the 7 processing centres.

Here are the planned activities for this time period:

Project Activities:

1. Training community leaders on conservation of the environment. Community leaders were trained on how to conserve the environment, they showed interest in planting and mobilising their communities to plant *Jatropha*. During the partner's meeting, the importance of *Jatropha* and its *Jatropha* seeds was explained.
2. Setting up *Jatropha* nurseries in clubs.

Nurseries were set up in the 45 clubs where farmers wanted to take part in the planting of *Jatropha*. Due to a lack of water, the majority of clubs that are deepening wells to obtain a

sufficient water supply were unable to set up a nursery. As such, we were only able to set up 15 nurseries with 51.2 kg of seed. Also, after the rain we used the direct planting system with 41.5 kg of the seed, from direct planting and the nurseries we have a total of 97,522 surviving plants, which means we lost 30% of plants due to low rainfall and other factors, such as a lack of weeding and regular plant irrigation.

3. Crop Maintenance

Regarding crop maintenance, pruning systems were implemented to reinforce plant branching and reduce the length of the plant to make harvesting easier. This was carried out in all 52 clubs and in the farmers' fields. Pest control was also carried out, as well as a weeding and a harvesting system that, in every club, set the standard for all farmers.

4. Training farmers on harvesting and *Jatropha* toxicity. Project leaders from the farmers' club were trained in *Jatropha* related techniques such as how the harvest should be done. 23 project leaders participated. During training project leaders were shown how to harvest and plan how this should be done within the community, there was also an explanation of the maintenance required for *Jatropha* seeds. It was also explained to the community that the seed is not edible.

After the training, demonstration campaigns showing the techniques acquired during the training by project leaders.

5. Project leader training on *Jatropha* parameters and oil acidity tests.

Regarding the ability of project leaders and farmers: training on *Jatropha* oil quality analysis was carried out on February 28 to March 8 2014 using a technique from Denmark. 22 people participated in the training, 8 of which were project leaders, 1 *Jatropha* technician, 2 sellers, 1 machine operator, 1 director and ECOMAR engineer who provided the *Jatropha* machine. The themes covered during training such as how to care for *Jatropha* seeds, seed quality for good oil, quantity and oil content percentage, how to operate the oil press, pressing and filtering *Jatropha* oil, and acidity test of the oil.

A great amount was learned and there was a generally high level of participation from the Bissora Agricultural Club technicians.

6. Extraction and filtration processes of *Jatropha* oil. Following extraction, *Jatropha* oil must be filtered before use.

During the training filtration systems were created using a four-phase sedimentation tank. After the four phases the oil is ready for engine use. The first bottle is less well refined than the last

bottle. The oil is then ready to be stored in a barrel, soon to be used. Currently we have 300 filtered litres that will be used in the production of Jatropha soap.

7. The involvement of students from the vocational school in Jatropha related activities. In August, students from the Bissora vocational school on the Agricultural course were involved in mobilising the community on transplanting and collecting Jatropha as part of the courses' internship period.
8. Jatropha transplanting campaigns.

After training the project leaders and communities on setting up nurseries, a campaign on planting Jatropha in 45 communities that showed interest in planting Jatropha and other communities that are outside the area covered by the project, who also showed their interest in planting Jatropha.

Project leaders and the community were able to engage and mobilise farmers regarding the importance of the Jatropha plant. Farmer's visits to fields were successfully carried out. By August, 73,456 plants were transplanted.

Monitoring and Assessment of Activities

Activities carried out in the Jatropha Planting Project are continually monitored and discussed in weekly micro-group meetings.

Meetings with farmers interested in seed collection are also being organised in order to speed-up collection.

Effects of Project Activities

Throughout the activities carried out, the following effects were observed:

1. Project leaders were trained and learned about care of the Jatropha seed.
2. 15 nurseries were set up with 97,522 plants.
3. In order to raise more awareness, before going out to communities students from the vocational school learned about Jatropha and how to look after it
4. The Jatropha oil extraction machine was set up and tested.
5. 22 project members were trained in how to set up a sedimentation and filtration system for Jatropha oil
6. 300 litres of well filtered Jatropha oil was pressed.
7. The Jatropha oil sample was taken to Germany to be analysed in a lab specialised in the analysis of Jatropha oil.
8. Communities have learned how to make Jatropha soap.

Plan for the next 12 months

Purchasing approximately 30 tonnes of Jatropha seed

Extraction of 6000 litres of Jatropha oil

Production of Jatropha soap

Training project leaders on Jatropha morphology

Setting up nurseries to increase the number of Jatropha

Transplanting of Jatropha

Crop maintenance: Pruning, weeding, collection and disease.

Training on Jatropha seed care

Campaign demonstrating the production of Jatropha soap in communities

Campaign on the importance of Jatropha in climate change and global warming.

Attachment 1: The Project in Numbers

Comments: The plan was for 52 clubs, Jatropha was planted but due to a lack of water in certain clubs we had to carry out activities described above in 45 clubs. Despite not reaching the number of planned clubs, there was a considerable increase in the amount of Jatropha that was planted. The number of people interested in planting Jatropha fell because out of 364 who showed interest, only 328 managed to plant, and the number nurseries planned for the clubs was also reduced due to the work involved with mounting solar panels. There was no water for irrigating the nurseries. Training was successfully carried out due to the project leaders' ability to engage, such that there was more than one session.

Attachment 2:

Production of Jatropha soap for domestic use

Weeding of Jatropha in the nursery before transplanting

Transportation of Jatropha seed to the processing centre

Training in the use of the Jatropha oil extraction machine

Jatropha oil filtration device

Jatropha oil, acidity soon to be analysed

Acidity analysis

Filtering the oil using the filtration device

Awareness campaign on Jatropha planting

Transplanting Jatropha