

Gota Verde Update July 2007

This update gives description of the main events during the months of April until July and a short preview towards the next quarter. As you can read, the focus has been mainly on organizing the operational structure in Honduras (WP 1) and on achieving the planting of 200 ha of jatropha in 2007 (WP 3). Once the operational structure is complete and plants are on the field, the other WPs will gradually receive more attention.

As in the last newsletter, the developments will be described per work package. Any comments to this report are welcome. In order to keep track of our contributions, I suggest to use the forum (<http://www.gotaverde.org/forum/>) to continue the discussion.

Work package 1. Coordination

1.1 Contracting coordinator.

The process of contracting a project coordinator took longer than expected. After 3 selection rounds and two withdrawals of selected candidates, the new coordinator was contracted as of May 1st 2007. HIVOS and its representative in Honduras (Marisa Ayasta) played an important role in the selection process, together with the Honduras based STRO staff.

The coordinator, Juan Manuel Valladares, is an 47 year young Honduran Agricultural Economist, with extensive experience in the administration of rural development projects, of which more than 10 years in the region of Yoro. Apart from his knowledge of the target group in the Yoro region and his contacts with local organizations, Mr. Valladares also has experience with palm oil production.

1.2 Opening project office in Yoro

In second week of July, the Gota Verde project office has been opened in Yoro, the capital of the department (province) with the same name. The office will be the base for both the Coordination team and staff of FHIA and FUNDER. The following persons have been designated to the project, some of them part-time. Most of the staff has started their work for the project in May or June.

FHIA:

- | | |
|-------------------------|-----------------------------------|
| 1. José Alfonso Bartola | Coordinator FHIA team. |
| 2. Pedro Paulo Díaz | Técnico investigador de cultivos. |

FUNDER:

- | | |
|--------------------------|------------------------------------------------------------------------|
| 1. Ing. Ángel Meza | General Coordinator FUNDER team |
| 2. Ing. Miguel Rodríguez | Coordinator enterprise development and agricultural technical transfer |
| 3. Carlos Rodríguez | Manager processing plant. |
| 4. Adalid Archaga | Agricultural technician. |
| 5. Nahum Oseguera | Social promotor (as of July 2007) |

COORDINACION TEAM STRO/HIVOS:

- | | |
|---------------------------|--------------------------------------------------------------------------------|
| 1. Juan Manuel Valladares | General Coordinador Gota Verde project. |
| 2. Miguel Ángel Flores | Technical Advisor Agricultural component. |
| 3. Titus Galema | Junior expert agriculture and engine adaptation (as of July 18 th) |
| 4. Cristina Santos | Regional Advisor Complementary Currency System |

The Coordination Team will have access to one (second hand) diesel vehicle and one motorcycle, which still have to be bought. The purchase of the diesel vehicle will happen in close coordination with Niels Anso of Dajolka, in order to make sure that the vehicle can be adapted.

1.3 Signing contracts FUNDER and FHIA

As mentioned in the previous newsletter, a negotiation mission was carried out in March by Winfried Rijssenbeek, an experienced consultant with ample experience in the field of renewable energy in general and biofuel projects involving Jatropha in particular. Mr. Rijssenbeek is also an associate of FACT. The mission resulted in budgets agreed upon by both FUNDER and FHIA. Contracts have been signed with both organisations for the 8 months (until December 2007) with FUNDER and 12 months (until March 2008) with FHIA. After a budget and activity revision, the intention is to continue the contracts with yearly extensions.

FHIA will be responsible for the agricultural investigation of Jatropha, sunflower, castor oil and a fourth crop, still to be defined. The investigation takes place both on experimental plots and on existing plots of participating farmers. FHIA documents all proven knowledge and transfers it to the agronomists of FUNDER.

FUNDER is responsible for the organisational, administrative and operational establishment of the processing plant. Moreover, FUNDER takes care of the establishment of Jatropha nurseries and gives technical assistance to the participating farmers.

1.4 Relocation of Peter Moers to Honduras

As a result of the increased project activity in Central America, STRO has decided to strengthen its operational structure in the region. As a result of this decision Peter Moers has been relocated from July 1 onwards to Honduras, covering as a Regional Coordinator STRO's activities in Honduras, El Salvador and Costa Rica. The relocation has no consequences for his functioning as a coordinator of the Gota Verde project, except that he will be 8 hours behind European time and will be able to give more direct follow-up to your requests for information from the field.

Work package 2. Finance and marketing

2.1 Explorative contacts with COOPACYL Credit Union

One of the expected results of the project is a local network of enterprises that accept a voucher that is backed by biofuel. One way to achieve a broad-based acceptance of this voucher is when the local Credit Union accepts the vouchers as a form of payment. The circulation can further be increased if the Credit Union emits (cheap) loans in the form of these vouchers.

Explorative talks have taken place with COOPACYL, one of the leading financial institutions in the Yoro area. Both the manager and the Board have shown interest in this innovative method to expand the credit portfolio without the need to attract (expensive) savings.

2.2 Selection of technical advisor on complementary currency systems

During the past months STRO has held interviews with candidates for the position of Regional Advisor in Complementary Currency Systems for the Central American region. By the end of June STRO contracted Cristina Santos, a Portuguese economist with extensive knowledge of and experience in administrative issues, which is one of the main areas of attention when introducing a complementary currency in an organisation. Gota Verde will be one of the main projects to be covered by Cristina.

2.3 Investment proposal to the farmers

Given the fact that Jatropha is a new cash crop and farmers are generally risk averse, an attractive financial proposal is necessary in order to find sufficient farmers willing to join the project. Farmers have been offered a loan in kind in the form of jatropha plants: 1600 plants per ha x 3.00 Lps/Planta = 4.800 Lps (€200). This loan will probably be complemented by a loan for agricultural inputs and land preparation which are necessary especially during the first year of the project. Technical assistance is provided at no cost during the term of the project. Farmers are expected to contribute their land and labour.

The loan for the plants will be issued at 0% interest and with an indefinite term. The additional loan for inputs and land preparation will be accessible at below market interest rates. All loans will be issued in kind. Of the value of the seeds sold to the processing enterprise, it is proposed to withhold 30% in order to repay the loan. The remaining 70% will be paid in cash or (later on in the project) biofuel backed vouchers. The plan still is a proposal and can be adjusted according to the observations of partners and farmers.

Work package 3. Agriculture

3.1 Progress of Jatropha planting

By the second week of July a total demand from farmers for Jatropha plantations of 140 ha had been registered, distributed over some 70 farmers. The large majority of the farmers are located in the area around the city of Yoro, where also the processing plant will be established. This will reduce transport costs and facilitate the return of press cake (manure) to the fields. It is expected that with the

establishment of the office in July, the completion of the FUNDER team in July 2007 and the availability of a car and motorcycle, the 200 ha (target for 2007) will be achieved.

Jatropha plantations will be established with a density of 1600 per ha (2 x 3 m). Small farmers will plant no more than 1 ha each, although many have manifested to be willing to plant more. The reason for this is that small farmers need more loan capital which is scarce. Larger farmers generally contribute a larger part of the investment costs themselves, thus reducing pressure on the Investment Fund. The extra area has been placed on a waiting list. In case insufficient farmers can be found during the promotion campaign in July and August to complete the 200 ha, the waiting list will be activated.

3.2 Participation of small farmers

Contrary to the assumption made in the Project Document, small farmers DO show interest in participating in the project, even though results are unsure and the crop is new. Therefore, following the social objective of the project, more opportunity for participation is given to small farmers. Once the farmers have established as an enterprise (see 4.1), the Project (i.c. FUNDER and FHIA) give technical guidance to the enterprise to negotiate access to rural finance with the Ministry of Agriculture and other institutions.

3.3 Discussion food versus non-food

Competition between food and non-food (e.g. biofuel) crops appears not to be an issue in the Yoro region. Investment capital rather than land is the limiting factor for more food production. Large areas of agricultural land are left idle because farmers lack access to investment funds. The innovative finance construction of Gota Verde (issuing biofuel backed vouchers, thus increasing loan capital and reducing its cost) may help to activate larger parts of the agricultural potential of the region the coming years.

3.4 Progress Jatropha nurseries

During the quarter April-June 2007, no jatropha nursery has been sown yet. During the last week of June, sites for the nurseries were selected according to the concentration of the applying farmers. In the first weeks of July the nurseries will start sowing the Jatropha plants, with weekly intervals. After 6 weeks the plants will be transplanted to the fields.

Factors that have delayed the establishment of the jatropha nurseries are:

- ✘ the sowing of corn (main grain for human consumption in Honduras), which is traditionally the main activity during the months of May-June-July. The rise in corn prices (caused by the large quantity of USA corn that is converted into ethanol in stead of being exported cheap to Central America) has increased the interest of farmers to sow corn. Government has made available extra loan funds to stimulate corn production.
- ✘ Delay in the contracting of personal by FHIA and FUNDER, which can be partially explained by the longer than expected process of formalization of their contracts.

According to the investment plan of the nurseries, total investment in 2007 for the 200 ha will be 320.000 Honduran Lempiras (€ 13.500) for a total of 352.000 plants. This is equivalent to a cost of 0.91 Lps. per plant (nearly € 0.04). The investment plan has been elaborated with field data from the farmers and the experience of FHIA.

Each nursery will consist of 25 beds of 0.6 m x 20 m. Each bed contains 1.200 plants. In total 12 nurseries will be established in different communities, each consisting of some 30.000 plants. Plants will be in the nursery for 6 weeks. An estimated 80% is expected to germinate. Plants will be sown with weekly intervals in order to make sure that sufficient

Nursery farmers will be selected according to their interest, access to water, altitude of the site, quality of the soil and availability of labour. As part of the methodology, all members of one family will be involved in this activity.

A possible bottleneck is the difficulty to find good quality *Jatropha* seeds in the Central American region. It appears that the attention that *Jatropha* has drawn during the past year has now translated into a large demand for seeds in the region. There is a clear preference for the so-called “Cabo Verde” variety which performs significantly better than the other varieties that have been planted in 2006 by the FHIA. In Sulaco some 12 kg of seed is available, in FHIA 5 kg more. The 10 month old plantations of FHIA produce some 7 kg per week. An additional 150 kg is expected to be needed to comply with the demand for 200 ha.



1 ha, 10 month old jatropha plantation (Cabo Verde variety) of FHIA in La Lima. The plants are pruned as fruit trees in order to facilitate fruit collection in the future

3.5 International *Jatropha* seminar Wageningen

From March 26 to 28, 2007, FACT organised a high level expert seminar in the Netherlands. Key experts with long term academic and/or practical experience in growing *Jatropha* presented their most recent findings. All geographic regions will be represented, Central America, South America, Africa, Asia and Europe. Several members of the Gota Verde project consortium also participated in the seminar. The presentations and literature made available during the event can be obtained on request (450 MB) from Ywe Franken of FACT.

3.6 Field visit in Sulaco for Yoro farmers

As part of the promotion and training efforts of the project, a field visit was organised on July 19th to the plantations that were established in 2006 in the Sulaco area (about 40 km from Yoro-city). Participants consisted of farmers who planted jatropha last year and leaders of farmers associations that have shown serious interest in planting this year.

The following shows some images of this field visit.



Jatropha plantation in Sulaco of the same age as the one in La Lima (10 months) but with remarkably less plant growth due to lack of soil preparation before transplanting. The field has previously been used by cattle resulting in a compact soil which slows down the penetration of roots.

Difference in seed sizes between the two main varieties used in the project: Cabo Verde variety (obtained from Guatemala) an Indian variety (obtained from El Salvador). The Cabo Verde is slightly larger. However, it is too early to draw conclusions on oil productivity per plant at this stage.

Germination experiments with jatropha seeds harvested from fruits of different colours



Woody remains of a castor oil plantation (harvested after 3 months). Good potential for extra income through firewood sales.



Brazilian variety castor oil produced a harvest of about 1400 kg of dry seed per ha in three months (550 lbs / 0.25 mz). Remains of the harvested plantation produce spontaneously new sprouts.

Work package 4. Oil processing

4.1 Definition of organizational structure processing plant

During the promotional event of June 22nd (see WP6), FUNDER presented a plan for the creation of an enterprise (*Sociedad Anónima*). In this enterprise FUNDER would initially own 51% of the shares, while local producers (farmers) would possess the remaining 49%. Once the enterprise has consolidated its functioning, FUNDER will make its shares available to the participating farmers.

4.2 Experiments Jatropha oil pressing

In Europe extensive experience and knowledge exists in the pressing of rape seed oil. However, conventional oil presses need to be adapted in order to be suitable for jatropha. FACT (Peter Berends) and Joost Fokkink have conducted experiments to determine the best techniques. Please consult the Gota Verde Forum (www.gotaverde.org/forum) for more information on this issue.

4.3 Feasibility study processing plant

FUNDER is responsible for the carrying out of a feasibility study in order to determine the most efficient design of the processing facility. A Terms of Reference for the study is expected to be completed soon. During the execution of the feasibility study several of the European partners will be asked to provide information.

4.4 Identification of sites for processing plant

The local partners have agreed that it is necessary to purchase a site of approximately 0.35 ha, located in a strategic point and with possibility to expand if necessary. The physical installation is expected to cover some 200 to 300 m².

Work package 5. Engine adaptation

5.1 Participation in workshop in Denmark

On April 21-22 a workshop was organized on the island of Ærø in the south of Denmark. On behalf of the project, the following persons participated in the workshop: Ger Groeneveld, Niels Anso (instructor), Titus Galema and Joost Fokkink. The workshop proved to be a good opportunity to gain hand-on experience in the engine adaptation process.

5.2 Gathering of information on available engines

The gathering of information on available diesel engines for conversion is behind schedule. Reason is the focus of the Coordination team on the agricultural component, which has the absolute priority at this stage. It is expected that with the arrival of Titus Galema, who has received a thorough introduction on the issue in The Netherlands (Groeneveld) and Denmark (Dajolka), this task will be receive more attention.

Work package 6. Dissemination in Central America

6.1 Promotional meeting for all actors in Yoro

On June 22nd the Coordination Team has organised, with cooperation of FHIA and FUNDER, a promotional meeting with participation of all (potential) actors: independent farmers, (first and second level) agricultural cooperatives and

associations, municipal governments, organisation of collaboration municipalities, an ethnic organisation, financial sector (COOPACYL, APAY, BANADESA), local businesses (among which gasoline stations in Yoro and transport enterprises).

In preparation of this meeting, many field visits were undertaken to identify leaders, explain the objectives of the project and determine the agro-ecological potential of the land of several interested farmers.

6.2 Logo Gota Verde

FUNDER has designed a logo for the biofuel enterprise. The logo will be used in all public documents and events.



6.3 Promotion of the project in Honduras

Contacts are being made with the press (radio, newspapers, TV stations) with the purpose to achieve more institutional image at the departemental (Yoro province) and national level. An increased institucional profile of the Gota Verde Project is helpful in the promotion of the project among farmers, potential donors, local and national authorities, local NGOs, etc. It is also helpful as a preparation for the local exchange network that is expected to start its promotion in the course of next year.

Work package 7. Dissemination in Europe

7.1 IEE¹ Fact sheet

A short overview of the projects design and objectives was elaborated for the IEE website. See:

http://ec.europa.eu/energy/intelligent/projects/doc/factsheets/gota_verde.pdf

7.2 IEE News Letter

A contribution has been prepared for the IE news letter which will be published at the beginning of August 2007 on the IEE website.

7.3 Website www.gotaverde.org

A first version of the Gota Verde website has been designed. See:

<http://www.gota-verde.org/>. A more comprehensive website is under preparation.

Your contributions and suggestions for improvement of the website are always welcome. For further discussion I propose to use the www.gotaverde.org/forum.

7.4 Article in Danish newspaper

Niels Ansø of Dajolka was interviewed for the Sunday issue of "Nordjyske", a news paper that covers the northern part of Denmark. The outcome was a nearly full front page article of the business section. Please see attachment.

See also:

<http://www.aalborg.dk/Dansk/Business/rundtiaalborg.aspx?ctrl=424&data=4%2C2280846%2C531%2C4>

¹ Intelligent Energy Europe