

Gota Verde Update January 2008

This update gives an overview of the main events during the months of September 2007 until January 11th 2008. The developments will be described per work package. You will notice that the technical work packages have received considerably more attention during this period, of course without neglecting the agricultural component which forms the backbone of the project. 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 Organisation of 2nd Consultative Committee (CoCo).

On October 18 and 19, the second Consultative Committee was organized in which participated more than 20 high-ranking representatives of co-beneficiaries with presence in Central America (HIVOS and STRO) existing subcontractors (FUNDER, FHIA), participating farmers (groups) and possible future collaborating organisations (CEVER, COOPACYL, PBPR). The meeting proved to be a useful opportunity to inform each other of the progress made and discuss the different factors that caused the delay in the establishment of the plantations, and propose measure to improve the functioning of the intervention team. The next CoCo is scheduled for April 2008. The presentations held during the CoCo are available for download from the www.gotaverde.org website (in Spanish).



Participants of the 2nd CoCo, October 18th 2007



Sweating participants during the CoCo field trip hoping for a fast growth of the Jatropha trees so they can enjoy their shade during next year's meeting.

1.2 Signing Letter of Intent with CEVER

In November the Gota Verde Project signed a Letter of Intent with the local Centre for Professional training in Yoro: CEVER. The agreement includes support in the design and construction of an oil press, design and improvement of a dehuller (adapted coffee processing equipment), training of students and personnel of CEVER in biofuel technologies and collaboration in demonstration of these technologies. Already in two occasions the CEVER was host of a biofuel demonstration (field visit of CoCo and meeting on the creation of the enterprise Gota Verde).



Biodiesel demonstration in tractor of CEVER and overview of the part of installations of CEVER.

The spacious installations of the CEVER also offer interesting possibilities to install the processing plant (at least initially) on its premises, making use of existing infrastructure. This would reduce the initial investment costs of the Gota Verde enterprise. Savings can be used to increase the investment fund for farmers which is expected to fall short for the targeted area (700 ha).

Work package 2. Finance and marketing

2.1 Mission to New Economics Foundation (NEF) in Great Britain

In December 2007, STRO's Technical Advisor Cristina Santos participated in a training mission to the NEF in London. Rafael Gonzalez (STRO-Spain) and Jaap Vink (STRO-Netherlands) also participated in the event. The NEF is specialised in participatory techniques to promote local economic development. The training produced many new ideas, insights and practical tools on how to analyse and organise the main in a the local economy in order to take full advantage of its resources and capacities. Some tools will be used, in an adapted form, in the promotion of an enterprise network that will interconnect with the biofuel chain.

Work package 3. Agriculture

3.1 Progress of Jatropha planting

In spite of the interest shown by farmers at the beginning of the season, we have not achieved our target of 200 ha. Due to various factors (that have been described in detail in the Progress Report of October 2007) only 53 ha of Jatropha have been established. During the last months of 2007 a considerable expansion of the area was expected, but due to the heavy rains in October and November it was often impossible for tractors to prepare the land. In December it was considered too late to transplant the Jatropha because the chance that the young plants survive the dry period is very small.

3.2 Planting of soy beans

To compensate for the delay in the establishment of the Jatropha plantations, more efforts will be invested in short cycle crops. This is important in order to produce sufficient oil

for the processing plant during the first years. The only oil crop that has been commercially produced in the region in the past is soy. On December 13th 2007 a Honduran soy bean expert has trained several farmers and technicians of FUNDER in the cultivation of soy and will give follow-up to the farmers during the coming months. Due to the beginning of the dry season in January, only irrigated area will be planted. In total it is expected to establish 3,5 ha of soy bean in January 2008. In the period May (beginning of the rainy season) until July another 21 ha are planned to be sown. Soy has a production cycle of 85-125 days.

In the case of soy, oil is basically a sub-product, the main product being press cake to be used as an input for cattle concentrate (see also 4.2 and 4.5).

3.3 Sowing of castor bean, canola and sunflower

In addition to the soy bean, also certified castor bean seeds (from Colombia) and canola have been planted on a total area of approximately 2 ha. The canola has been planted in the higher areas Yoro of at the site of the experimental station of FHIA in La Esperanza (1600 m). A first shipment of sunflower in November did unfortunately never arrive in Honduras. A second effort in January 2008 was more successful. This brings the total area of oil crops for 2007 tentatively at 76 ha.

3.4 Planning of intercropping Jatropha with short cycle crops

It has been detected that most farmers that have established Jatropha plantations in 2006 and early 2007, show little interest in weeding their plantations. This leads to a delay in the growth of the Jatropha trees due to competition for nutrients. When asked for the reason of not weeding their plantations, farmers mention that there is no immediate benefit (which is true because production starts to take off only after the third year).

The main solution to this problem is thought to be intercropping of short cycle crops in between the Jatropha lines. This gives an immediate incentive to maintain the areas. An additional advantage is that the Jatropha trees may benefit from the fertilizer given to the short cycle crop. The intercrop may benefit from the pest repellent effect of the jatropha, although this still has to be proven in practice. Short cycle crops that have been mentioned are: soy, castor bean, sunflower, vegetables, corn, beans. Preferably the intercrop is an oil yielding specie in order to contribute to the oil targets of the project. However, other crops can be considered, especially if external funding for these crops is available.

Other solutions mentioned to the weeding problem during the first years are: let cattle enter the plantations (preferably sheep in order to reduce damage by clumsy cows rubbing their backs on the young trees), and credit for weeding. The weeding problem is expected to be temporary because once the Jatropha trees cover the entire plantation, little sunlight reaches the soil and therefore weed growth will be considerably less.

For more information on the Agricultural component, please download from the website www.gotaverde.org the presentations of FHIA and FUNDER held during the 2nd CoCo in Yoro.

Work package 4. Oil processing

4.1 Importation of oil press Taby 40A

Thanks to the intervention of Joost Fokkink and the Coordination team, a Taby 40A press was imported from Sweden in October 2007. The press has been tested in the CEVER: the press capacity is about of 20 kg of dry Jatropha seed per hour. The oil yield obtained was relatively low (20%). More investigation is necessary to determine if this is due to the low oil content of the seeds or the efficiency of the press. Moreover, the press head

did not hold the pressure and broke into two parts. The cause of this is still under investigation.

4.2 Pressing of oil from soy

An opportunity arose in Olancho (a neighbouring department of Yoro) to press soy beans that are produced in this region as an ingredient in balanced cattle concentrate. Traditionally, the soy is milled and mixed into concentrate without oil extraction. Gota Verde has negotiated a deal in which a fixed amount per gallon of oil extracted is paid. For this purpose, the Taby 40A press has been installed in Olancho in the second week of December. The press cake is currently under investigation to determine its exact protein content which is important to determine the price of the press cake.



Press extraction soy oil



Soy oil after 3 days



Soy press cake

Unfortunately, due to a broken press-head, only a small amount of oil has been obtained so far. Local welding of the broken piece appeared not to be effective and the piece broke again, in a different place. The damage is covered by the guarantee of Taby Presses, who sends a spare part to Honduras. It is hoped that in the course of the second half of January 2007, press operations can be reinitiated in Olancho.



Images of the broken press head

4.3 Progress feasibility study processing plant

FUNDER is currently carrying out a feasibility study in order to determine the most efficient design of the processing facility. A first draft is expected to be presented by the end of completed soon. During the execution of the feasibility study several of the European partners will be asked to provide information.

4.4 Progress in legal establishment of processing enterprise

Several meetings of the committees have been held and a date has been set for the formal establishment of the enterprise: February 2nd 2008. Name of the enterprise will be "Biocombustibles de Yoro Sociedad Anónima" (BYSA). Farmers show great interest in becoming shareholder in the enterprise. It is expected that 75-100 farmers will become founding members of the enterprise. The minimum requirements to become a founding shareholder are: (a) buy at least 10 shares of 100 Lps¹ each, (b) have planted at least 1 ha

¹ 100 Honduran Lempiras = 5, 27 US\$ = 3,64 Euros.

of oil yielding crops² and (c) be owner of the land that is cultivated. No single shareholder can hold more than 5% of the shares, except for FUNDER who holds 51% of the shares.

4.5 Identification of sites for processing plant

As mentioned before, the installations of CEVER have been identified as a possible site for the installation of the processing unit. Another possibility that is under been studies is the grain drying installations of COOPACYL. The installations have been recuperated by COOPACYL as a guarantee of a loan that was not repaid. Since 2004 COOPACYL operates the installations under its own administration, covering at least current costs. However, COOPACYL wishes to focus on its financial activities. COOPACYL is open to proposals, including sale, leasing, renting or joint venture. The coming months FUNDER will finish its feasibility study and recommend, in consultation with the Coordination Team, a site to the Board of the BYSA.



Images of the grain drying installations of COOPACYL in Yoro.



Images of the diesel-powered heating equipment and the silos of the grain drying installation.

COOPACYL also has in its possession an equipment to produce cattle concentrate that is 10 years old and has never been used. In theory, this equipment could be reactivated by BYSA, using the edible press cake (from soy, sunflower, canola) as an input, thus connecting the biofuel chain with the cattle feed chain. Another possible synergy could be using biogas produced by the jatropa press cake as an input in the grain drying installation, instead of the diesel used at this moment.

4.6 Construction of small-scale biodiesel plant

With technical assistance from the Nicaraguan NGO CDCA (<http://www.jhc-cdca.org/>) and the Whitman Direct Action (<http://www.whitmandirectaction.org/>) and in collaboration with the CEVER, a small-scale (50 gallon batch) biodiesel processor will be build in January in Yoro. The objective is to obtain hands-on experience with the transesterification process, identification of suppliers of inputs (and their quality) and gain

² Those who have not planted yet but want to buy shares are obliged to plant at least 1 ha before August 1, 2008.

experience with the possible uses of glycerine. The input is mainly waste vegetable oil collected from restaurants in Yoro and Tegucigalpa. The biodiesel produced will be used for internal use only (project vehicle).

Work package 5. Engine adaptation

5.1 Planning for intervention in 2008

On the discussion forum (www.gotaverde.org/forum) the technicians involved in this work package have started the discussion on the adaptation options for the different engines available. Also some criteria for selection of engines have been defined. Finally the planning for the visit of experts in 2008 is under discussion.

Work package 6. Dissemination in Central America

6.1 Participation in seminar in Santo Domingo, Dominican Republic

On invitation of the GTZ, Peter Moers participated from 2-4 October 2007 in the “Regional Workshop on the Use of Plant Oil / Biodiesel as a Source of Energy in Latin America and the Caribbean”. The workshop was coorganized by the AEA, EUEI-PDF (which is implemented by GTZ) and the Dominican Ministry of Environment and Natural Resources. The event was an opportunity to present the project to the main actors active in biofuel initiatives in the region. Various interesting contacts have developed from the seminar, both with implementing and support organisations. Various *Jatropha* manuals and other interesting documentation were obtained. The contacts planned interventions in Olancho and Intibucá, funding for the Intibucá intervention and a visit to the largest biodiesel producer of Costa Rica by personnel of the Gota Verde project are direct results from the participation in this event.

More information about the workshop, its participants and a complete collection of the presentations, can be found at the following website:

<http://www.euei-pdf.org/index.php?site=project&project=17>



Participants of the workshop in Santo Domingo



Presentation of Gota Verde

6.2 Participation in the Seminar El Salvador

Various members of the Gota Verde Team in Yoro, both from the Coordination team, FUNDER and FHIA, participated in “II Latin American and the Caribbean Biofuels Seminar”, organized by the CIDECO Foundation and RENOVA in San Salvador, El Salvador 26 to 28 September 2007. The Gota Verde participants presented the project and received many requests for more information. Several attendees of the seminar actually visited the project at later on in the year.

For more information and a complete list of the presentations, please go to:
<http://www.olade.org/biocombustibles/ponenciasEn.html> (in English) or
<http://www.olade.org/biocombustibles/index.html> (in Spanish, more complete).

6.3 Technical advisory to Jatropha project in Intibucá

In August 2007, Gota Verde was approached by the Honduran development NGO ENFORMISA to give technical and financial assistance to a Jatropha project in Intibucá province, one of the poorest regions of the country. The project finds itself in its initial stage with some 5 ha planted in 2007 and seeks support for further expansion. ENFORMISA has signed a contract with 5 municipalities to use the communal land for the establishment of Jatropha plantations on communal lands. This contact embarks potentially more than 10.000 ha. Purpose is on the one hand to recover wasteland and on the other hand income generation for the local population. With support of STRO, a project profile was formulated for the AEA³ for a two-year pilot project in the area. The project was provisionally approved for an amount of 50.000 Euro. Final approval depends on a more elaborate proposal that will be submitted in the coming months.

6.4 Promotion of the project in Honduras

The project continues to receive a large amount of visitors from both Honduras and neighbouring countries. Several organisations have expressed their interest in creating a more permanent exchange platform to share experiences, documentation etc. This exchange may develop into a platform or a knowledge centre in the future.

Work package 7. Dissemination in Europe

7.1 Website www.gotaverde.org

The website has been updated and various articles are available for downloading. Your contributions and suggestions for improvement are always welcome. For further discussion, please use the www.gotaverde.org/forum.

7.2 Publication in ebsite www.gotaverde.org

Niels Ansø is co-author of an article on PPO in *Ecología Política*, a Spanish language magazine published in Latin America. The Gota Verde project is also mentioned in the article, that will be published Mid-January. Part of the content will be available on-line: www.ecologiapolitica.info.

³ <http://www.sica.int/energia/>