Haiti Jatropha Stakeholders' Conference

Hotel Le Plaza
Port-au-Prince

June 23-24, 2009
8h am – 5h pm

Organized by:

CHIBAS

Jatropha Foundation
Improving sustainable energy with Jatropha bio-fuels

JP JATROPHA PEPINYÈ

With contributions from:

MARNDR

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Projet de Développement Economique pour un Environnement Durable - DEED

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Projet Renforcement des Capacités pour la Gestion Durable des Terres en Haïti

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Introduction

CHIBAS, in conjunction with Jatropha Pepinyè and the Jatropha Foundation, are organizing the Haiti Jatropha Stakeholders Conference. The conference will begin the process of bringing together key stakeholders in order to unlock the potential of Jatropha, an indigenous seed-oil crop that can be used to produce sustainable bio-energy for local energy generation and transport. This will begin the process of coordinating an efficient and socially responsible bio-energy sector throughout Haiti. This document outlines an overview of the conference, describes Jatropha curcas and its products in detail, explains the objectives of the proposed conference, and identifies the topics of discussion. This initiative, if successful, could also serve as a model for creating sustainable renewable energy projects throughout Haiti and the Caribbean.

Conference Overview

The current situation in Haiti is ideal to begin developing an inclusive and socially responsible Jatropha bio-energy sector focused on sustainable rural economic development. Approximately two-thirds of Haiti's population is unemployed with 66% of Haiti's labor force working as rural, small scale, subsistence farmers. The poorest country in the Western Hemisphere, Haiti suffers from economic underdevelopment, environmental devastation, and energy poverty. The possibility of using a native oil-seed crop to create the basis of a sustainable energy industry opens a wide range of opportunities to support the development of Haiti's rural areas. In the last few years with the growing interest in alternative fuels, Jatropha has captured the attention of many development experts as a crop that could be used to help alleviate dependency on fossil fuels, while also providing livelihood creation in some of the most impoverished countries of the world. Jatropha curcas is an ideal agricultural crop for both, sustainable production by small-scale farmers and a creating a local supply chain creating added value in rural Haiti. Consequently, Jatropha is well suited to Haiti's economy and has strong potential to sustainably increase rural income through small-scale agricultural job creation resulting in increased energy security and an improved national economy.

Haiti is a mountainous country with extreme topography that when coupled with near complete deforestation (98 percent of the country is deforested) equates to immense soil erosion from wind and rain. Jatropha curcas offers an economically viable solution to restoring eroded top soil while increasing income to small-scale farmers. Recent flooding in Haiti, as a result of the 2008 hurricane season, illustrates the need for technical solutions promoting durable reforestation of Haiti's hillsides while simultaneously increasing farmers' income security. Jatropha offers strong potential for economically viable reforestation of Haiti as a perennial and sustainable crop system.

The Haiti Jatropha Stakeholders Conference will begin the process of connecting Haitian Jatropha bio-energy stakeholders in order to initiate coordination of a sustainable and socially responsible Jatropha agriculture sector throughout Haiti. The conference will enable networking between a wide range of stakeholders that include small growers (growers organizations), producer groups, Haitian NGO's, relevant agencies in the Government of Haiti and both the, the private sector, bilateral and multilateral, international donor communities. Bringing all of these groups together in a coalition would provide a mechanism to share information, and lessons learned. The conference will also start addressing concerns linked to insuring Haiti's food security and discuss land use strategy for Jatropha cultivation (not competing for space with traditional food crops) and the use of multipurpose Jatropha varieties (high protein animal feed and biofuels). Finally, the private sector has a central role in sustaining any type of socially responsible Jatropha agriculture sector in Haiti and we will have presentations and posters from the groups involved in biodiesel related activities.

- **Economic and environmental benefits** that Jatropha offers Haiti are a strategy to profitably restore environmentally degraded lands. Growing Jatropha will become a part of a strategy for income producing reforestation projects (Jatropha should not be grown on prime agricultural land).
- **Jatropha products and by-product** will be discussed in great detail beyond bio-fuel, such as high-protein animal feed and honey.
- **Relevant technologies** needed for sustainable and socially responsible production of Jatropha agro-products will be pivotal in developing a locally and regionally based Jatropha production and consumption economic sector.
- **Government Policies** needed to promote a Jatropha industry that pro-actively benefits the resource poor, promotes economic growth in Haiti and improves national food and energy security.

Expected Conference participants:

- Growers and producers
- Downstream processors
- Logistics coordinators
- Project developers
- Potential consumers
- Donor community
- Investment community
- Government of Haiti and policy makers

Jatropha Overview

Jatropha curcas is a drought tolerant perennial crop plant that can grow in marginal lands unsuitable for the traditional annual food crops; it that is ideal for the sustainable and socially responsible production of bio-energy in developing economies throughout the tropics. Jatropha also has high-quality straight vegetable oil (SVO). Jatropha is a perennial crop, shedding its leaves during the dry season, improving soil fertility over the long-term further decreasing input requirements and costs for sustainable Jatropha production systems.

Jatropha has few requirements with respect to its environment allowing it to grow in areas that are too dry or too arid for other plants, or lands that have been abandoned by humans because of soil depletion. It effectively has the potential to convert marginal wasteland into a national income generating asset. Jatropha oil could bring significant wealth to Haiti's poorest farmers in Haiti's most marginalized areas and at the same time reduce Haiti's dependence on foreign fuel imports. By improving Haiti's energy independence, Jatropha will positively impact Haiti's economy and improve Haiti's balance of payments.

Rural job creation is the primary social benefit attributed to Jatropha production with sustainable and socially responsible production systems, while reforestation of marginal land and bio-energy production are the primary environmental benefits. Jatropha bio-energy is an income generator also promoting affordable energy independence in disenfranchised rural economies. Examples from countries in Africa provide examples of how Jatropha cultivation can engage isolated areas in energy production and income generation.

Jatropha Products

Straight vegetable oil (SVO) is an indirect substitute for bio-diesel, petro-diesel and a direct substitute for fuel oil. Jatropha SVO is the least capital intensive Jatropha fuel supply chain that enables small-scale farmers and producer cooperatives to maximize value added to the end product in the local economy. Jatropha SVO can be consumed in diesel engines that have been converted to run on SVO fuel. Examples of Jatropha SVO ready engines are most fuel oil engines and low-speed, gravity fed Lister type engines running under 1200 RPM. These types of engines have strong competitive advantages in the production of local electricity, grinding mills, seed crushing operations, water pumps, irrigation, and small industry due to lower fuel costs associated with SVO fuel relative to bio-diesel, petro-diesel and fuel oil. Approximately 75% of Haiti's electricity is produced in large, fixed-speed diesel engines creating a large potential demand for Jatropha SVO fuel. SVO engine and conversion system technologies have been around for nearly a century and have been proven with Jatropha SVO in Africa and Asia.

Bio-diesel is a direct substitute for petro-diesel fuel that is equally efficient and has the potential to burn cleaner than petro-diesel if quality standards are met. Bio-diesel can be used purely in diesel engines as B100 or blended with diesel (at any percentage) creating flexible and low-switching cost consumption. The majority of Haitian liquid fuel consumption is in the form of petro-diesel and fuel oil, both of which use compression ignition engines and are ideal for use of Jatropha bio-diesel. In addition to substituting petro-diesel, Jatropha bio-diesel is a less-toxic substitute for kerosene fuel used in Lamps and stoves. Biodiesel applications in lamps and stoves will have the largest impact on rural villages for light and cooking.

High-protein animal feed is a potentially high-value product derived from non-toxic Jatropha varieties. Jatropha seeds maintain high-levels of protein similar to the nutritional content of soy beans creating an opportunity for Jatropha to produce energy, food and animal feed in larger quantities than soy beans. Haiti currently imports animal feed that is too expensive for small-scale rural farmers, effectively creating a large barrier of entry for animal husbandry, such as chicken, tilapia, and dairy farming. Unlike soybean, Jatropha can be grown on land that is not currently utilized for traditional food crops making Jatropha a lucrative and equally multi-faced crop.

Charcoal briquettes are an ideal by-product from Jatropha fruit shells and hulls. Charcoal is the primary fuel used for cooking in Haiti and is largely responsible for the rapid rates of deforestation in recent decades as a result of hardwood being the primary input for charcoal production.

Honey, produced from Jatropha flowers is a high-value Jatropha product that adds value at the local village level. Jatropha is pollinated by insects, primarily honey bees, creating ideal conditions for honey bee propagation in conjunction with Jatropha farming. By producing honey with Jatropha pollen, bees enhance Jatropha fruit production which equates into higher oil yields per tree and hectare.

Conference Objectives

Strategy development is the primary goal for the Haiti Jatropha Stakeholders Meeting to cultivate an inclusive business environment for sustainable and socially responsible production of Jatropha throughout Haiti. Jatropha production in a locally oriented value chain will maximize the sustainable development of local and rural economies throughout Haiti. The economic multiplier effect will be

maximized in a sustainable and profitable value market chain maximizing incomes for the farmers and the local community.

Define specific products and markets derived from Jatropha agriculture for consumption at the business, urban and village levels. Examples of product and markets are as follows:

- Transportation fuel
- Stoves and lamp fuel
- Electricity generation for home and business
- Charcoal briquettes
- Animal feed
- Organic fertilizers

Networking will be facilitated through flexible break-out-sessions designed to effectively connect complimentary industry participants. Break-out/poster sessions will focus on current projects directly and indirectly related to Jatropha bio-energy production; giving all stakeholders the ability to effectively network. Development of a coordinated and efficient production sector is strongly correlated to the ability of stakeholders to network and communicate with each other in an open and sector-focused environment.

Knowledge Dissemination will be facilitated by a panel of speakers with first hand experience working with Jatropha both internationally and in Haiti. Simultaneous translation will be provided in French, Creole, and English.

- **Day 1** will focus on the economic, environmental and social opportunities and risks associated with the adoption of Jatropha cultivation throughout Haiti in a sustainable and socially responsible industry structure.

- ***Day 2*** will focus on presenting relevant technologies for the development of a successful Jatropha curcas bio-energy industry in Haiti. Speakers will cover best practices throughout all aspects of the Jatropha market value chain.

Conference Outputs

- **Begin** the process of creating a growers network with technical expertise on both Jatropha cultivation and marketing strategies
- **Facilitate** greater international exchanges that support improved agricultural and environmental goals through Jatropha cultivation.
- **Connect** the investment community with local NGO's working with Jatropha and small scale farmers, private Jatropha projects, and grower groups.
- **Educate** local stakeholders of best practices of Jatropha cultivation, processing, and logistics.
- **Plan** to reconvene and create a virtual group of experts, growers, NGOs, and private sector leaders.

Proposed Conference Agenda

Day 1: Economic, environmental and social opportunities and risks from Jatropha production

- **Introduction**: Presentation of 1st day speakers and a short introduction to Jatropha for sustainable rural economic development in poor and disenfranchised economies with an overview of the current status of Jatropha cultivation in Haiti.

- **Joanas Gué, Minister of Agriculture, Natural Resources and Rural Development**.

- **Overview of Jatropha as more than an energy crop:** An overview of products and byproducts of Jatropha cultivation while explaining how relevant technologies are mature and easily implementable in rural Haiti**; Non-toxic Jatropha** from Mexico illustrates that there are edible sources of Jatropha in the world. Edible Jatropha meal has strong potential as a high protein animal feed. Gael Pressoir, CHIBAS.

Coffee/poster break

- **Market Chain development as a requirement for sustainable land use.** Jean Charriot Michel, UNDP/MDE

- **Land use**: More than 60% of land in Haiti is underutilized or not used at all due to deforestation and subsequent soil degradation. GIS aerial & satellite imagery, analysis, and statistics will identify land suitable for Jatropha cultivation without affecting the food chain and areas to be preserved for ecological reasons. Gael Pressoir, CHIBAS.

- **Biodiesel market and economic feasibility study.** Eduardo Almeida, IADB.

Lunch break

- **Sustainable and socially responsible supply chain** development is critical to the successful implementation and long-term integrity of Jatropha cultivation in Haiti. Jatropha has many characteristics that benefit the resource poor in rural developing economies.

- **Domestic markets for Jatropha products and by-products** will be explained in reference to specific opportunities in Haiti such as SVO and diesel fuels, charcoal (TBA, BME?), and animal feed (TBA, Veterimed?).

- **Presentation of the draft for the national strategy for biofuel development in Haiti.** Arlan Lecorps, spokesperson of the inter-ministerial commission on biofuels

Coffee/poster break

- **Jatropha and food security,** introduction, challenges, risks and opportunities (TBA).

- **Insuring food security in Haiti**. Gary Mathieu, CNSA

- **Panel Discussion** focused on the opportunities & risks involved with defining a way forward for Haiti. Panel participants will include community/farmer's organization leaders, NGO's, the private sector, scientists, and Government of Haiti policy makers.

Day 2: **Relevant Technologies and Implementation Strategies:**

- **Research & development** needed to maximize Jatropha curcas agricultural production as a sustainable bio-energy crop for rural developing economies. Gael Pressoir, CHIBAS

- **Fruit processing**; harvesting, shelling, hulling, roasting, cooking, pressing, and storage. Reginald Noel, Biocarburants d'Haiti SA.

- **Geographic Information Systems (GIS)** and relevant applications for Jatropha production. Gael Pressoir, CHIBAS.

Coffee/poster break

- **Oil Processing** strategies ideal for both small-scale and large-scale projects producing both, bio-diesel and SVO fuels. Discussion will cover specific cost-benefit analysis. Reginald Noel, Biocarburants d'Haiti SA

- **PINHAB: Partners for an Haitian Biodiesel Industry.** Short presentation - Elisabeth Cooke.

- **Saint Louis du Sud Jatropha feasibility study.** Short presentation – Yvon E Elie.

- **Jatropha production in an extremely isolated area (Belle Fontaine) for local consumption** Short presentation – Alexi, Gafe

- **Jatropha project in the North East**. Short presentation – Agr. George, Jatropha Pepinyè.

Lunch break

- **Binational Jatropha project on the Haitian Dominican border.** Short presentation – Chery jean Osmy, IRC/Sup-Agro/IDDI.

- **Presentation of Biocarburants d'Haiti SA**. Short presentation – Rachel Noel, Biocarburants d'Haiti SA

- **Learning from the West African experience.** Short presentation – David Tilus, GAFE.

- **Where to plant and not plant Jatropha; case study. Short presentation** – Gael Pressoir, CHIBAS

- **Defining government policies**, (including land use), standards, and regulations that will be needed for the newly emerging Jatropha agro-industry. Reginald Noel, Biocarburants d'Haiti SA

Coffee/poster break

- **Role of the private sector** as stewards of socially sustainable production practices and business models that profitably maximize benefits to growers and the economy in rural Haiti (TBA).

- **Concluding Remarks** focused on specific action steps going forward to develop a sustainable and socially responsible Jatropha bio-energy sector in Haiti.

Appendix A: Organizers

Fondation CHIBAS-Haiti (research center on bio-energy and sustainable agriculture, www.chibas-bioenergy.org) is a not-for-profit organization based in Haiti. It is an institute founded with the goal of establishing a Regional Bio-fuels Technical & Knowledge Center (CHIBAS) that will contribute to developing and acquiring the technologies needed for the development of the bio-fuel sector in Haiti. (1) CHIBAS will be improving, releasing and promoting the use of improved sweet sorghum and Jatropha varieties as multipurpose crops (food/feed and energy) for the sub-humid and drought prone regions of Haiti; (2) CHIBAS is to be a technical center to serve the farmers and the agribusiness sector in getting access to the best and most adequate technology and the best agricultural practices; (3) CHIBAS realizes feasibility studies to establish plans for the formulation of project designs (or projects) and investment strategies (including a complete sustainable and profitable value market chain assessment) maximizing incomes for the farmers and the local communities.

Jatropha Foundation, launched in 2007, is a US-based not-for-profit dedicated to development of a sustainable global Jatropha bio-energy sector. Specifically, Jatropha Foundation conducts research & development, Jatropha-based rural development projects, and spearheads sustainability initiatives for large-scale commercial Jatropha production systems. Organizational philosophies pertain to sustainable business, social entrepreneurship, and working with the poorest of the poor in order to truly begin to alleviate systemic poverty via Jatropha energy independence.

The Jatropha Pepinye (JP) is a nonprofit Haitian business that grows and sells transplant seedlings of Jatropha curcas for renewable energy, rural economic development, and the re-vegetation of devastated landscapes. The nursery is located in Terrier Rouge in northeastern Haiti on the newly improved Route Nationale.

Appendix B: Sponsors

The Inter-American Foundation (IAF)
IAF is an independent agency of the United States government that provides grants to nongovernmental and community-based organizations in Latin America and the Caribbean for innovative, sustainable and participatory self-help programs. The IAF primarily funds partnerships among grassroots and nonprofit organizations, businesses and local governments, directed at improving the quality of life of poor people and strengthening participation, accountability and democratic practices. To contribute to a better understanding of the development process, the IAF also shares its experiences and the lessons it has learned.

Haiti - Economic Development for a Sustainable Environment (DEED)/DAI/USAID
Providing rural communities with the economic incentives and knowledge to improve the management of critical watersheds and natural resources

The Economic Development for a Sustainable Environment (Développement Economique pour un Environnement Durable, DEED) project uses a market-based approach to integrate improved management of lands and other natural resource assets with expanded enterprise and job opportunities in the production of suitable high-value crops, creating livelihood options for hillside farmers currently trapped in poverty. Linking the management of natural resources to sound conservation while simultaneously offering livelihood options provides the essential stimulus for promoting sustainable watershed management. DAI's DEED team creates this link by weaving livelihood improvements into all aspects of watershed and natural resource management.

DEED works in two watersheds in Haiti—one in the north, near Cap Haitien; the other near St. Marc, about two hours north of the capital, Port-au-Prince—to unlock the potential for growth by delivering the technical services, training, and business support needed to build the local skills and capacity to sustain growth. DAI's work provides rural communities with the economic incentives and knowledge to improve the management of critical watersheds and natural resources, emphasizing the introduction of high-value tree crops, the creation of new jobs, and the institutional strengthening of newly decentralized government agencies.