

Testimony

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Jatropha and Peacebuilding in Haiti

Chairman Engel and distinguished members of this subcommittee: I appreciate the opportunity to submit for the record this short discussion about how Haiti could benefit from the creation of a sustainable biofuels economy that would not only relieve poverty, but would also provide energy for light, transport and cooking. It is especially timely to consider alternative energy sources for Haiti, and also for the Caribbean. Fossil fuel dependence must be countered by strong programs that assist developing states create sustainable energy futures in a time when we face dramatic challenges created by global warming and dwindling resources for energy.

As Haiti returns to a more politically stable situation, and the government of President Rene Preval works to ensure that Haiti's economic sustainability is addressed, it is time to look at what appropriate technology for biofuels could do to restore Haiti's deforested landscape. Creation of a small scale Jatropha farms that can be incorporated into existing agriculture can also help bring a marketable energy product to a vast number of poor people. A bioenergy market would also improve the potential for regional commerce by providing Haitians with a renewable fuel for generators, and for transport. These benefits can be realized within a year after planting the first crops. And because Jatropha is not edible, growing Jatropha will not compromise food supplies.

And because *Jatropha* is a natural fence (its leaves are toxic to animals) it will not be eaten by cattle or goats, thus allowing it to grow.

I am not talking about making Haiti into another Brazil. I am talking about using the existing knowledge we have on biodiesel crops to help small farmers grow a product that can be readily adapted to their local community needs, while also helping improve the soil, prevent erosion, and provide job opportunities to thousands of Haitians living in rural areas. This is a huge opportunity given that 70 percent of Haiti's population still lives in the rural areas of the country.

This is not a dream, but a reality that can start immediately if U.S. government agencies like U.S. AID and the Department of Energy, and the international financial institutions begin a serious program to use what we now know about energy crops to help lift Haiti up economically, and also provide a decent future for so many poor Haitians.

Introduction:

Chronic insecurity in Haiti is exacerbated by the absence of opportunities for employment. Conclusions about security always repeat the same observations linking economic development and security, but drop off on any remedies to alleviate this cycle of security sector reform and economic growth.

The conditions today for the inclusion of renewable energy projects for development offer some hope for Haiti where a decade ago there was less cause for optimism. In the past decade the advent of bio-energy crops and the advances in processing make it possible for pilot projects to be initiated in Haiti. In particular, the use of *Jatropha*, an indigenous plant that thrives in arid regions, and is a natural fence because its leaves and seed are toxic to animals, presents an opportunity for biodiesel production that could revolutionize the agrarian base of Haiti. Not only could the cultivation of *Jatropha* provide a product that could easily be used to meet local energy needs, but its cultivation also lends itself to the type of agriculture that is suitable in Haiti: small plots cultivated among cooperatives of peasants that could pool their production and output to produce biodiesel.

Haiti's development deficits are manifold. But the ability to grow energy crops which also have a great potential to prevent further soil erosion while also producing a crop with a broad market, provide an important solution to the current economic crisis. Energy crops are also offer job creation potential in an island where more than two-thirds of the population has no formal employment,

and where 78 percent of the population lives on less than \$2 dollars a day. The labor intensive nature of energy crops is well-documented, and in Haiti the ability to employ people in agriculture that has a market could mitigate the problems of rural to urban migration through the expansion of jobs in the countryside.

Why Jatropha?

Jatropha curcas is an important feedstock for the production of biofuels. Its widespread use in India and Egypt is gaining popularity as a quick growing source of oil-bearing nuts that can be pressed to produce biodiesel products. Jatropha has also been a crop of choice in development programs in Africa where local villages have grown Jatropha on small plots of land and have hand-pressed the oil for use in generators, sewing machines and small motors. Glycerin, a by product of Jatropha oil, can also be used to produce soap.

Jatropha has also been proven to have strong anti-erosion qualities which make it ideally suited for use in Haiti. A recent study on watershed preservation commissioned by USAID this year reinforced this fact, adding that it was more effective than the traditional tree-planting efforts that have been used to help reforest Haiti.

Finally, there is already good experience in the production of seed for commercial use, and a track-record of marketable product based on the cultivation of Jatropha. There are really no negatives for its use in Haiti, given the dire condition of the land and the rate of deforestation.

Energy as a Peacebuilding Tool:

Haiti shares an island with another nation, the Dominican Republic. It has also shared a very dark history of international relations due to clashes at the border, persistent cross-border migration issues, and a long history of prejudice that colors the bi-national relationship. The cultivation of energy crops provides one means of building peace between the two countries in that both nations suffer an energy deficit and both nations are committed to seeking a remedy for continued border violence.

The Haitian-Dominican border could become a center for bio-energy production with the introduction of jatropha cultivation. Both sides of the border could be developed to create bio-diesel growing zones. The Dominican side of the border could host larger scale biodiesel processing plants, with Haitian-Dominican private sector investors forming the basis of a new industry that could help to

offset both nations' energy needs. While this is a medium-to long-term process, there is already interest and some experimentation with bio-diesel that is worth pursuing.

Common economic interests are powerful tools for peacebuilding. And the Haitian private sector could be brought into this venture, with the help of the Inter-American Development Bank, the UN, and other private investments. Bilateral donor cooperation in this area could also become a novel way to look at economic growth as a means for building confidence and trust between two nations. There is no time to waste in advancing this concept. Presidents of the Dominican Republic and the Republic of Haiti recently signed an accord on technical and educational cooperation. This agreement could also serve to advance this concept if it lent support to this type of effort.

Haiti is also ripe for bioenergy because of the unique convergence of national support for the peace operation in Haiti. With Brazil as the lead nation in the peace operation, it also brings to Haiti extensive, long-term experience in the bioenergy field can be tapped to help Haiti on the path to energy independence. Brazil's ambassador to Haiti has already discussed ways in which his government can help expand technical assistance on biofuels. This opportunity must be used to help advance an industry that offers one of the best hopes for sustaining any economic development in Haiti.

And with the recent memorandum of understanding that the Government of Brazil has signed with the United States, the Caribbean could become a model for how such technical cooperation could foster better economic support to the Caribbean, and in particular, to Haiti and the Dominican Republic.

Energy as a Means of Sustainable Livelihood:

Poverty reduction is a central goal for a country like Haiti, the poorest nation in the Western Hemisphere. Lessons from other countries, most notably Brazil, demonstrate the power of bioenergy as a form of new livelihood creation. But there are also models from Africa where bioenergy crops have afforded important examples of new livelihood creation in rural villages. In other words, bioenergy is a sector that can be taken to scale, and has in its toolkit, means of providing energy needs at the most basic level of development, but also the potential to offset the requirements for fossil fuels. In a country such as Haiti, small scale biodiesel production lends itself to the current form of agriculture: small scale plots worked by individual families or cooperatives.

Jatropha is an excellent feedstock for Haiti. It is indigenous to the island, thus preventing the problem of invasive species being introduced into the ecosystems. While it would be desirable to import hybrid Jatropha seed to get a product that was quick-growing and pure, this could be easily managed in any pilot project. In addition, there are other types of feedstock suitable for Haiti including Mamona, or castor bean. All these crops have proven to be excellent sources for the production of biodiesel.

Incentive programs for small growers of bioenergy already exist and could be used as potential models for a Haiti pilot. In Brazil, the Ecodiesel program comes to mind as a good example of a case where the government helped provide land (5 hectares) and seed to farmers. The program helped to refine the harvested biofuels and gave farmers who met their production quotas over five years title to land they worked. This type of program could have a powerful effect in Haiti where small farmers are more common than large-scale land holders when it comes to agriculture.

Energy as Security Tool:

Haiti's lack of an independent energy supply is evident by the erratic supply of electric power and the shortages of fossil fuels for transport. Even with the new commitment of a steady supply of petroleum that President Hugo Chavez has made in recent days, this type of assistance is not the long-term solution. In addition, Haiti's continued deforestation due to use of timber for firewood, has increased the risk of complete environmental devastation from hurricanes or other natural disasters. Today Haiti is 96 percent deforested. It is in a state of environmental crisis. If you cannot turn on the lights and your land is washed away every time it rains, then you are not able to support basic needs or provide an environment conducive to safety.

A local bio-energy program that focuses on cultivation of energy crops would provide a means for local power generation in the absence of other infrastructure. You do not need an electric grid to run generators on biodiesel. And when you run a generator you can light a village. And when you provide light to a village then children can read and do their homework after dark. You also increase public safety security when you can turn on the lights.

A second security complement is that any bio-energy program will be a means of using human resources to support a growth sector. When you have a means to generate employment, and a market to support this product you can keep people

within regions and engaged in productive livelihoods. This resolves a major problem of rural to urban migration as the rural economy literally dries up.

Finally, providing jobs for young men and women could also be an important spin-off in any bioenergy program. Not only is there work in the agricultural sector, but there is also an important role for individuals who can transport and market biofuels. Encouraging commerce between communities can help support networks of trade, and stimulate regional economies.

Role of the Private Sector:

The Haitian private sector is a driver of economic development in Haiti. Its receptivity to any type of bioenergy regime must be done through a process of education about the product, and also about the potential for cross border markets with the Dominican Republic. There is already ample discussion and investment by some Diaspora business groups in this area, but there needs to be a more robust effort to encourage this type of market.

There have been some initial discussions with the private sector and with some government officials who are receptive to the bioenergy sector for Haiti. But it is also important that a comprehensive training be prepared for those who are interested. And some type of cross-border business coalition could also be a powerful engine for investment and exchange in this area.

An Integrated Approach: Economically Uniting Hispaniola

Energy crops will not solve all of the problems of economic growth in Haiti. This short paper about the potential for local biodiesel initiatives is just a first step in a process that will also work toward greater economic integration between the Haitian and Dominican private sectors. If cross border bioenergy programs are created, and successful pilots demonstrate the economic viability of such projects beyond local communities then we will be ready to move Haiti toward a new area of economic growth. By developing a bioenergy program in Haiti there are many interrelated issues that can be addressed simultaneously:

- Local security through the availability of biodiesel for generators, thus providing light and fuel.
- Use of a crop, *Jatropha* that can be grown in poor soil conditions, with great environmental benefits by preventing erosion and also revitalizing the soil.
- Job creation in rural areas, with potential for other types of employment if bioenergy crops expand.

- Rural employment opportunities also provide a strong deterrent to rural to urban migration.
- Local markets for biofuels that could be readily available for private sector investors.
- The potential for cross-border peacebuilding through shared production interests in biodiesel cultivation.
- A means to help offset immediate energy deficits in Haiti in the short and medium term.

As we seek tangible economic development for Haiti it is imperative that the bioenergy sector play a central role in this strategy. The benefits for such a project should be evident, and the medium to long-term growth could help provide a massive poverty-reduction program that has real and lasting results.

Implementation:

To start the cultivation of Jatropha a pilot program should be developed on government donated land. Given Haiti's history as a nation of small landowners, it would not be difficult to also find areas where small farmers work to see whether pilot cooperatives could be established for the purpose of growing a bioenergy crop. Moreover, for this program to be successful the government of Haiti and the relevant ministries of Agriculture and Planning must be brought in to the process so that Haitian citizens become an integral part of the planning and assessment process.

With government donated land, and commercially donated or purchased seed (D-1 Oils in England is a potential source of seeds as this private firm has development good hybrid Jatropha that could be readily started in Haiti) the pilot plots could be cultivated and harvested within a year. There is new, fast growing seed that bears a crop in seven months. Infrastructure for pressing the nuts into diesel oil would have to be provided by a bilateral donor, or some other agency of the Haitian government overseeing this program. But the potential for seeing quick results, and the demonstration effect of a successful project could be a powerful incentive to greater investment.

Support for this project must come from the international community with the collaboration of the Government of Haiti. The Inter-American Development Bank has made it clear that bioenergy is central to the vision that is being projected for the hemisphere. The resources allocated to biofuels should be tapped for pilot projects, technical assistance, and sustainable development models.

The presence of Brazil in the UN Peace Operation in Haiti (MINUSTAH) is affords another great opportunity to begin work on pilot bioenergy projects. No country in the world has garnered as much experience in this agricultural field. And Brazil has already made offers to help Haiti with technical assistance in this area. The convergence of Brazil's willingness to provide assistance, the potential for private sector engagement, and the chance to give Haiti a marketable product that has a national market is too good an opportunity to pass up. The *Ecodiesel* program that was developed by the Brazilian government could become a model suitable for Haiti, and one that could be easily replicated on Hispaniola.

While figures must be developed for financing and land requirements for a pilot project, it is clear that with the support of the government of Haiti, and President Rene Preval in particular, a bioenergy-based agricultural future could make the difference between survival and security in the case of Haiti.

I cannot underscore the urgency of a bioenergy program for Haiti. If the government of Haiti, working together with the international community makes this priority, the country's landscape can change, its economy can grow, and its relationship with the Dominican Republic improved. It is essential that hope be restored to the more than 8 million Haitians who are desperately seeking a future. Bioenergy gives Haiti a second chance, and is one that should not be refused by either its leaders or by our own government who seeks to help our Caribbean neighbors.