

The Triple Payoff of Biofuel

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UPDATE

IN THE LAST issue, we focused on low-cost, eco-smart roads that could speed up the fulfillment of Millennium Development Goals. The EcoTerra Technologies team traveled to Ethiopia to build one of these roads in May of 2010, using the liquid enzyme technology (see last issue and website for how it works). The pilot road construction utilized local manpower from the Chancho region, north of the capital, Addis Ababa. Men and women arrived over hills and across farming fields from all directions to participate.

ANOTHER VISION

While we were walking on our new road looking at the local farms, we saw another exciting potential for the farmer's future: growing oilseed producing trees as a wind break to mitigate against erosion, a vision that also has an extraordinary impact on achieving MDGs within the context of increasing energy demands and decreasing petroleum fuel sources. It's a smart idea that while you're growing food, add another crop like the indigenous jatropha tree or castor plant as an additional cash stream and to yield high-quality oil for biodiesel.

BIOFUEL: A TRIPLE PAYOFF STRATEGY FOR MDGS

When talking to investors about the payoffs from business ventures they usually focus on the return on investment, how much and how soon. A United States based startup company, Ardent Energy Group, has devised a broader strategy that benefits more than just

the investor. The CEO of the company Mr. Y. Daniel Gezahegne, calls it the "Triple Payoff" strategy because it benefits economically, socially, and environmentally—three factors that cover most of the MDGs. Using Ardent as a model, let's see how new companies can capitalize on new economic opportunities while manifesting the Triple Payoff vision for reaching MDGs.

1) ECONOMIC BENEFITS

Ardent Energy is currently attracting new, "greener" investors, ones who care about the environment and the people living in it, and realize they can earn a fair return while financing continued growth. At the same time, Ardent Energy has a focused goal to financially benefit farmers, their families and communities, while eliminating poverty. Ardent Energy's approach begins with microfinancing farmers to purchase saplings for growing jatropha and castor oilseeds. The farmers are given technical support and a guaranteed purchase contract from the company. The initial financed cost will be paid off by the farmer from the sale of oilseed crops back to the company. Although they are not growing food, this crop does not compete with edible crops, and it allows them to have a surplus income to buy food if needed to eliminate hunger.

For smoke-free cooking, village cooperatives can distribute biodiesel stoves which eliminate the time consuming and arduous task of gathering wood, leaves or dung to prepare fires. Other biofuel products include crude vegetable oil, organic fertilizer, and glycerin—to make washing soap and other practical products. Castor oil alone has over 1200 uses.

The production of biofuel greatly stimulates economic growth since it reduces the amount of imported oil for transportation and

commercial needs. It makes more sense not to have to pay for foreign refining and long distance transportation of fossil fuels when biofuel can be produced locally and sustainably. Brazil exemplifies a country that has not felt the global recession because they prepared for over a decade developing energy crops. By doing this, their production surplus led to oil exports to neighboring countries, and now worldwide.

In the volatile Horn of Africa, exporting energy from Ethiopia would provide a needed diplomatic and economic booster shot for the entire region. According to the US Embassy in Ethiopia, agriculture accounts for 43% of GDP and employs 85% of the 80 million people there. Only an increase in biodiesel supply can balance out the world's exponentially growing demand. This is why there are



plenty of buyers eagerly waiting for more oilseed crops to hit the market.

Additionally, a radical employment increase can be projected around the oilseed crops. By developing oilseed nurseries, oilseed crushing plants, processing plants to make fuel and other useful products, a entire new job market gets started. On top of this, electricity from converted waste streams can help power these plants, or on a local scale, micro waste-to-energy machines can power villages. There is a clear path from the development of the numerous biofuel products to a whole new world of employment opportunities.

The key point here is that in areas where farmers have been simply subsisting or going hungry, they can now have security from cash crops that add a new reliable income stream. At the same time, countries that embrace the biofuel development can leapfrog past fossil based fuel, become energy independent, and create a new energy based economy.

2) SOCIAL BENEFITS

To achieve the social payoff among the MDGs, Ardent Energy has a strong interest in advancing women's empowerment and closing the gender gap in Ethiopia. The incentive for this to happen begins as new jobs spring out from harvesting and processing oilseed crops, both locally and at nearby plants. Since women will now have ample cooking fuel, they will have freed the time to fill new jobs and job markets. Women will raise the family income so much higher than before, that it can help to trump the entrenched gender discrimination that remains a defining characteristic of living for the majority of the world's bottom two billion people.

Also, once the new income stream begins to flow, access to education, health care, technology, and income will be more possible. This in turn influences men with culturally reinforced discrimination who might be happy for the additional family income from a financially productive and healthier wife.

It has become accepted wisdom that empowering women is one of the most crucial instigators of international development and by doing so, almost all the MDGs are actualized. When the status of women improves, population growth slows, child health and nutrition get upgrades, infant mortality declines, and poverty cycles are broken. Ardent is a leading example of how the private sector can work to promote gender equality and empower women. By partnering with NGOs now, private sector firms can move more efficiently and effectively towards MDGs deadlines by 2015.

3) ENVIRONMENTAL BENEFITS

Ardent Energy specifically has chosen jatropha and castor plants for their environmental benefits. The farms and animal pastures in Ethiopia sit in areas that were once densely forested. The Ardent land use policy focuses on inactive land since both jatropha and castor thrive on land unsuitable for food production. Planting new trees on arid land increases re-forestation. Using biodiesel stoves could stop an estimated 2.5 billion people worldwide from burning wood for cooking.

The crops in Ethiopia stand exposed to the wind with no protection from top soil erosion. From centuries of farming, topsoil—a precious and essential ingredient for healthy crops and nutritious food—has been slowly removed. To take the edge off this problem, jatropha creates an excellent wind break hedge.

With the right combination of trees and plants, a natural, indigenous permaculture environment can be introduced. Insects that like to live in jatropha trees, for example, can pollinate plants nearby. Decay from falling leaves and dying wood provides a nature rejuvenating cycle for the soil. In addition, jatropha is an extraordinarily hardy plant. It creates its own fertilizer and requires no mechanization to produce sustainable clean energy.

SUMMARY

At this crucial transition point in history, the benefits of investing in biofuel are well recognized, and many countries have reduced their need for importing oil for fuel and industry while boosting their economies. With previously unused land turned into income and employment generators, biofuel investment combined with the Triple Payoff strategy will also help achieve MDGs—only if people start now.

AUTHOR



Bill Levine, Managing Director of EcoTerra Technologies, advises people on how to implement the most cost-effective, state of the art, eco-smart technologies in multiple, integrated fields of renewable energy and sustainable solutions. The emphasis is on technologies that leapfrog from the pre-industrial age directly into the emerging clean tech, sustainable age—providing jobs, improving health, and boosting the economy while managing resources efficiently.

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Ardent Energy group is accepting additional investors. Please contact: info@ardentenergy.com