

Seeds

"Miracle crop" not so miraculous after all

The Kenya Forestry Research Institute (Kefri) and the World Agroforestry Centre decided to carry out a thorough investigation¹ into jatropha because of the growing discrepancy between what was being said at conferences about its properties and farmers' experiences on the ground:

"Nearly everywhere you turn, someone is promoting this 'wonder crop' as the solution to our energy woes. Perhaps even more seductive than claims of energy independence, however, has been the argument that Jatropha can alleviate rural poverty and make use of marginal land not suitable for food production.

Reading some news reports, this has seemed like a real win-win situation. Farmers, biofuel producers, consumers and the environment would all benefit from growing and processing Jatropha. According to an article on Time Magazine's website from earlier this year, 'renewable energy, it turns out, does grow on trees ... unlike corn and other biofuel sources, the Jatropha doesn't have to compete with food crops for arable land. Even in the worst of soils, it grows like weeds.'

Local [Kenyan] papers have also joined in the chorus of praise for this seemingly magical crop, with unverified claims like 'Jatropha is resistant to drought, pests ...' and 'experts say a hectare of Jatropha can produce 1,900 litres of fuel! Of course, the so-called 'experts' are rarely cited, and, even when they are, the basis of their statements is almost never verified."

Yet, on the ground, farmers were reporting disappointing results,² an experience that scientists too were beginning to share:

"The scientific literature and news reports from around the world are increasingly documenting a growing



African jatropha nursery

Photo: Servaas van den Bosch/IPS

disappointment about the crop's performance, especially in the marginal areas where it has been advertised to thrive. The fundamental goal of this study was to separate fact from fiction through an independent, objective collection and analysis of empirical data from current Jatropha farmers on the agronomic and economic realities of growing the crop."

So what were the results of the investigation carried out by the two institutions?

"The results of this survey, taken from interviews with hundreds of Jatropha farmers throughout Kenya, show extremely low yields and generally uneconomical costs of production. Based on our findings, Jatropha currently does not appear to be economically viable for smallholder farming when grown either within a monoculture or intercrop plantation model.

The only model for growing Jatropha that makes economic sense for smallholders, according to actual experiences in the field so far, is growing it as a natural or live fence with very few inputs. Of course, this is precisely how Jatropha has been grown in this part of the world since it was introduced centuries ago."

Their recommendations are stark:

"Therefore, we recommend that the all stakeholders carefully reevaluate their current activities promoting Jatropha as a promising bioenergy feedstock. We

also suggest that all public and private sector actors for the time being cease promoting the crop among smallholder farmers for any plantation other than as a fence."

The concern expressed in this study is replicated elsewhere in Africa. Maurice Oudet, the president of SEDELAN, an organisation that works with peasant farmers in Burkina Faso, came back from a trip to the north-east of the country, alarmed about the way jatropha was spreading like wildfire among peasant farmers. They have been seduced, he says, by the vague promises of high returns. He called jatropha a "cancer" after consulting a dictionary which defines cancer as "an abnormal proliferation of cells in the centre of a cell to such an extent that the survival of the cell is threatened". It's just that, he commented.³ Another study concludes that jatropha is an "aberration" for Mozambique.⁴

1 Endelevu Energy, World Agroforestry Centre, Kenya Forestry Research Institute, "A field assessment of the agronomic and economic viability of Jatropha and other oilseed crops in Kenya", December 2009:

<http://www.worldagroforestry.org/downloads/publications/PDFS/B16599.PDF>

2 In an article published in 2007, GRAIN was highly sceptical of the claims being made for jatropha: "A rosy picture indeed, but unfortunately what is actually happening does not support this optimistic view that jatropha will provide poor farmers with both cheap energy and significant income ... The reality is that jatropha has already been converted into another plantation-based agribusiness commodity, tightly controlled from seed to fuel by transnational corporate networks." See GRAIN, "Jatropha – the agrofuel of the poor?", Seedling, July 2007:

http://www.grain.org/seedling_files/seed-07-07-5-en.pdf

3 Le Sedelan, 381, "Jatropha et Souveraineté alimentaire, Le jatropha : un cancer !":

<http://www.abcburkina.net/content/view/763/1/lang/fr/>

4 Justiça Ambiental e União de Camponeses, Jatropha! Uma aberration pour le Mozambique, August 2009:

http://www.swissaid.ch/global/PDF/entwicklungspolitik/agro-treibstoffe/executive_summary_f.pdf

The colony of Puerto Rico

Carmelo Ruiz-Marrero, director of the Puerto Rico Project on Biosafety, recently posted this blog:

"RUM (University of Puerto Rico's Mayagüez campus) biotechnologists proclaim with great pride that they are developing a GM cassava (also known as yucca or manioc) with increased nutritional content, with funding from the Bill and Melinda Gates Foundation. The test field of this 'wonder yucca' is in a UPR experimental substation in the municipality of Isabela.

Right across the road are the offices of Monsanto Caribe and over 325 acres of their GM crops. Just west of the substation there is a large lawn, possibly as large as the substation itself, dotted with military antennae which form part of an emergency global communications network to be used by the Pentagon in case of a nuclear war.

I do not mean to say that one thing is related to the other, but I find it very educational to see right next to each other two symbols of the colonial oppression we Puerto Ricans live under: the military industrial complex and the corporate biotech 'life sciences' industry, two reminders that we have no authority in our own land and no say in our destiny."¹

1 See <http://bioseguridad.blogspot.com>

We haven't seen anything yet

According an article in the *Wall Street Journal*,¹ at least nine weeds in the USA have developed resistance to the herbicide glyphosate, which is sold by the US biotech giant Monsanto under the Roundup trademark. These weeds have spread to millions of acres in more than 20 states in the midwest and the south. Dupont, another of the world's big biotech companies, believes that by the middle of this decade at least 40 per cent of the land planted with maize and soya in the US is likely to harbour at least some superweeds resistant to Roundup.

This means that Roundup Ready soya, which was genetically modified by Monsanto

to be resistant to Roundup, is increasingly ineffective. One farmer from Arkansas told the newspaper that Roundup no longer controls pigweed, which is running rampant on his fields. The weed can grow six feet high "on a stalk like a baseball bat", he said. As these stalks damaged his farm machinery during the last harvest, he had to resort to practices from his father's day to control it, employing a crew of 20 labourers to attack the weed with hoes. As even this was only partially effective, he also used paraquat, an older and highly poisonous herbicide, to eradicate the weeds.

All this is great news for the biotech companies, even paradoxically Monsanto. "The herbicide business used to be good before Roundup nearly wiped it out", said Dan Dyer, head of soya research and development at Syngenta. "Now it's getting fun again."

The "fun", of course, is the chance to push ahead with new research to genetically modify crops to be resistant to other herbicides apart from glyphosate.

Although the companies are tight-lipped about their plans, some information is available. Dow Agro-Science is developing GM maize that will be resistant to the powerful herbicide 2,4-D, which it manufactures. It should be on the market by 2013. Syngenta is field-testing soya that has been genetically engineered to be resistant to a relatively new herbicide that it makes, called Callisto. Monsanto is also developing a new soya, resistant to the herbicide dicamba.²

Sales of Roundup are unlikely to fall with the arrival of these new GM crops, as glyphosate will remain a central part of the farmer's arsenal. According to the *Wall Street Journal*, "most companies developing crops tolerant of other herbicides want to build them on a Roundup Ready platform, so to speak – putting their new herbicide-tolerant genes into crops that already carry tolerance for Roundup."

Although this is little discussed in the mainstream press, one cannot help wondering where this technical merry-go-round is going to end. The big advantage of the first generation of GM crops was supposed to be that, by allowing farmers to use Roundup, a

relatively benign herbicide, at a key moment in the growing season, both the quantity and the toxicity of the herbicides the farmers used would decline. This was not the case, as sales of herbicides did not fall significantly. But now, with the second generation, a cocktail of more lethal herbicides will be used from the outset, which clearly implies a step-change in the use of herbicides.

This clearly presents a grave risk to human health, the ecosystem and neighbouring farmers. For instance, grapes are highly sensitive to 2,4-D, and one wine-maker from Texas told the *Wall Street Journal* that he would go under if 2,4-D-resistant cotton were to be adopted by nearby farms. "A neighbour could take me out in one night", he said.

Despite the lip-service paid to the alleged "environmental friendliness" of GMOs, it has been clear for some time that what big commercial farmers really like about GM technology is that it permits no-till farming, which means that they can reduce labour costs. And, as the *Wall Street Journal* points out, this advantage is one that they are anxious to retain: "Farmers have no wish to return to labor-intensive methods. The success of expensive seeds that are Roundup-tolerant shows growers will pay a steep premium to control weeds chemically."

Ecologists are fighting back, though few are hopeful of their chances of securing more than sporadic victories. One case in point concerns 2,4-D, one of the chemicals used in the manufacture of Agent Orange, the main defoliant used by the US military in the Vietnam war. In 2008 the Natural Resources Defense Council petitioned the Environment Protection Agency for 2,4-D to be banned, citing research that shows that it disrupts hormones in trout, rodents and sheep. Dow is rebutting these claims. A decision is expected later this year.

1 Scott Kilman, 'Superweed outbreak triggers arms race', *Wall Street Journal*, 4 June 2010
http://www.gmwatc.org/index.php?option=com_content&view=article&id=12263

2 See GRAIN, "12 years of GM soya in Argentina – a disaster for people and the environment", *Seedling*, January 2009, <http://www.grain.org/seedling/?id=578>

*You cannot buy or make a sacred site.
They come from creation
They contain the patterns of our birth and the knowledge of all time
They are strongholds of life.*

Tshavungwe Nemarude

Clan fights to save sacred sites

The Ramunangi clan in Venda, one of the former apartheid homelands in the far north of South Africa, is seeking an urgent interdictio from the courts to prevent a tourism lodge being built on their sacred site. The Ramunangi clan is part of a community-based movement called Dzomo la Mupo (the Voice of the Earth), made up of seven communities and led by the Makhadzis (female elders). Along with protecting the sacred sites, rivers and forests, the Dzomo la Mupo has been setting up nurseries to help with reforestation and to revive traditional seeds, including millet, sesame and maize.

The sacred sites at the centre of this conflict consist of the Phiphidi waterfall and the surrounding forest. In Venda culture, these sites are places where the custodians perform rituals for rain, where they bury their ancestors and where they celebrate a good harvest. The communities take their duty to protect these sacred sites very seriously, because it is from these sites that their cultural, spiritual and community values and governance systems emanate.

For three years the Ramunangi clan has been fighting to stop development projects being undertaken on their sacred sites. The developers gained the go-ahead for the tourism project, which involves building chalets and related facilities on the site, from



Phiphidi Falls

local chiefs, particularly Chief Jerry Tshivhase and the self-proclaimed king, Kennedy Tshivhase. Despite numerous attempts by the Ramunangi to hold talks with these traditional leaders, the latter have refused to receive them, and bulldozers have now started work near the sacred waterfall. Letters calling on local government officials to uphold the Ramunangi's constitutional rights have also fallen on deaf ears.

In affidavits filed in support of their

application for a court order, the clan accuses the traditional leaders and the government of violating legal requirements and denying the clan's responsibility to maintain the spiritual well-being of the Venda people.



Members of Dzomo La Mupo gather outside the sealed-off Phiphidi Falls before marching on



Waterfall custodian Tshavungwe Ramunangi performs a snuff ceremony to protect the sacred site