ENERGY-INDIA: Biofuelling Confusion

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ZAHEERABAD, Andhra Pradesh , Mar 3 (IPS/IFEJ) - A cactus-like plant spread over acres of red, laterite soils in the Tree Oils research farm, in this arid part of southern India, is at the centre of huge divisions over India's ambitious biofuel programme.

One group of biofuel players says jatropha curcas, the much hyped wonder plant with seeds bearing 10 to 35 percent oil, will provide India and the world a viable energy alternative, while others point to land-use constraints and jatropha's need for sustained farm inputs.

With a projected growth rate of eight to ten percent in the next two decades, India has a galloping need for oil, much of which it cannot produce. Cheaper international prices of crude are making no dent to the situation, say energy experts. The country's consumption of crude oil and petroleum products rose from 203.51 million tonnes(mt) in 2000-01 to 274.84 mt in 2007-08, yet it produced merely 178.21 mt of both products in 2007-08. Its dependency on oil imports is thus projected at 94 percent by 2030.

"Given our limited reserves, our present known stocks may not last even 10 years at the current consumption rate,'' says the ministry of petroleum and natural gas on its website.

So far, sugarcane growing states have been unable to even meet the current policy of 10 percent blending of sugarcane-ethanol into petroleum. Despite the threat of food crops being diverted for biofuels, jatropha plantations are seen as the next big step in solving India's energy dilemma.

But confusion prevails in India - one of the world's major farming countries - over the large-scale planting of jatropha and other biofuel crops.

The divisions over jatropha stem largely from a now highly-criticised report by India's Planning Commission in 2003 that encouraged industry with offers of land and tax incentives to adopt jatropha cultivation.

State governments were encouraged to get farmers to grow jatropha, but without first carrying out sufficient feasibility studies.

Citing energy security, employment generation and sustainable development as key motives for large-scale jatropha cultivation, the report predicted 127.6 million days of employment in plantations alone by 2007 which has not happened.

In 2008, the government expected 11 million ha of plantations on the country's degraded lands, aiming to blend 20 percent biodiesel into diesel supplies by 2010.

The consequence of this has been large scale ventures into jatropha plantations in at least ten states of India, with a confusing array of mixed reports from the field.

There are also reports of misuse of non-operative oil-expelling plants availing the government tax rebates to write off expenses in their other operations.

In Chhattisgarh, central India, government partnerships with industry covered 1.6 million ha of 'fallow' lands with approximately 290 million jatropha saplings in 2005-06. Less than half have survived and oil-producing units are now scrounging for seeds.

Similar schemes and large plantations have also been set up in the major states of Rajasthan, Uttarakhand, Gujarat, Madhya Pradesh and Tamilnadu with mixed success.

In Rajasthan's Udaipur district farmers became hostile to jatropha after seeing their cattle die from eating the toxic leaves of the plant. "We were encouraged to grow jatropha by agents who sold us saplings at Rs ten (five US cents) each and extolled the virtues of jatropha,'' Sukh Ram, a farmer, told IPS.

''We were told that jatropha, being unpalatable to cattle, the saplings would stay safe. But no one told us what would happen to the cattle,'' said Sukh Ram. ''In the end, we not only lost what we paid for the saplings but also possible earnings from three hectares of land, three years in a row. We are not prepared to take such risks again.''

Non-governmental organisations, such as Genetic Resource Action International, have warned that a bigger danger lies in local communities getting marginalised by the policy of state governments, handing over vast tracts of land to industry for growing jatropha.

With easy acquisition of government lands, questions over misuse of land, finances and long-term soil impact loom large over India's biofuel programme.

The total financial layout for jatropha schemes has not been studied yet. The Planning Commission estimated approximately 303 million dollars for plantations and extractions, about 9.7 million dollars as subsidy and another 19.38 million dollars as government loans to industry till 2007. But in spite of the financial backing and the hoopla

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around jatropha, the plant's behaviour and productivity remain unknown quantities.

An integrated mix of indigenous oil-bearing species with multiple benefits such as neem and pongamia are now working out as better bets for trying to produce biofuel.

"We are better off with growing 'pongamia' (Indian beech tree used since ancient times by villagers for lamp oil),'' says Y. B. Ramakrishna, chairman of the task force on biofuels set up by the government of southern Karnataka state.

Karnataka, says Ramakrishna, is the only state in the country that has involved village communities that get 20 percent usufruct rights to grow these mixed species on government drylands.

" We [Karnataka} are a role model for the country, others are watching us," says Ramakrishna.

In Zaheerabad, the Tree Oils farm has 40 acres of jatropha curcas, 60 acres of pongamia pinnata, and 20 acres of neem (Azadirachta indica), simaruba glauca, castor and other oil-bearing species. Three types of biocomposting pits sit at the farm's centre.

"Our experimentation with jatropha shows us that it is unsuitable for Indian small farmers due to its need for watering, manuring and its long gestation period," says Srinivas Ghatty of Tree Oils.

And yet, jatropha cannot be thrown out along with the bathwater in India. Some say it will work.

"We have shown so far that organic manuring, average watering and interspersing jatropha with nitrogen-fixing crops produces the best results for both jatropha and the soils," says Ghatty.

The New Delhi-based The Energy Research Institute (TERI), working in a partnership with British Petroleum on 8,000 hectares in Andhra Pradesh, advocates growing jatropha in an integrated manner with other crops in the field. "We are developing in a scientific fashion, taking advantage of good natural resource management and a buy-back guarantee system with local farmers,'' says Alok Adholeya, director of biotechnology and management of bioresources at TERI.

Viren Lobo, director for the Society for Promotion of Wastelands, a government-funded organisation, also based in New Delhi, says jatropha plantations need to incorporate "questions of livelihood, food, fodder, energy and biodiversity security.''

Meanwhile, TERI's Adholeya agrees that there are 'fly by night' industries that are cashing in on the government's bonanza of land, tax rebates and the possibility of earning money through carbon sequestration under the United Nation's Clean Development Mechanism (CDM).

But that area too is hazy, and not just in India. The spacing, height and pruning needed for commercialised jatropha bushes do not give sufficient density or biomass for effective sequestration.

Like Ramakrisha, Adholyeya too believes in "multiple feedstock," which means looking at several promising crops rather than being fixated on jatropha - which is not native to this country. ''There are local candidates such as mahua, neem, rice-bran oil, palm oil and a dozen other species with proven suitability to this country's agro-climatic conditions,'' he pointed out.

In the field of oil-operations though some success is being reported. The Karnataka government's public transportation system is India's first successful CDM venture, where 2,500 buses are running on biofuel from pongamia oil.

"If the common man is to use biofuels, then we need support from the manufacturers,'' says Anand Rao, head of environment at the public-sector Karnataka State Road Transport Corporation. Manufacturers, he said, are unwilling to extend the guarantee on buses running on biodiesels.

Biofuel usage for the common man also depends on the 'oil lobby,' a worldwide phenomenon.

A senior official in the petroleum industry in India, on condition of anonymity, agreed it was a commonplace that there is stiff resistance against any substitute.

(END/2009)