

Jatropha – the panacea for global fuel crisis

Global food and fuel balance presents a shaky picture in recent times. This has lead to a wide spread repercussions across the globe and therefore strategies need to be formulated for alternate energy sources. One such alternate source is the Jatropha based biofuel. Strategies for sustainable biofuel production across the world is the need of the hour.

Spiralling fuel prices have brought biofuel to the forefront of energy crisis management plans in countries around the world. However the global interest in biofuel has been considered as a potential threat to food security. As a possible panacea a draft document has been released by the Switzerland-based Roundtable for Sustainable Biofuels which contains guidelines on the 'Principles for sustainable biofuel' and which laid stress on food security, conservation of environment and rights of local communities.

Jatropha for poverty alleviation

Biodiesel derived from Jatropha is fast becoming recognised as a viable source of alternative fuel to meet the rising fuel demand of countries across the globe. Seeing the long-term implication of bringing about energy security through Jatropha, it has now become imperative on the part of governments around the world to encourage self-help groups (SHG) and non-governmental organisations (NGO) to take up Jatropha cultivation on government wastelands on a long term basis. Although, it is widely acclaimed that both energy security and social wellbeing can be brought about by Jatropha

plantation, but the question that needs to be answered is how Jatropha plantation can help the poor. One answer to this question could be – by allotting village wastelands to the landless labourers and BPL (Below Poverty Line) families who can form SHGs and grow Jatropha seedlings. These landless labourers and BPL families should register themselves with the village administration, which should initiate alliance with the private companies on behalf of these people for taking up Jatropha plantation.

A policy framework for improving Jatropha as biofuel feedstock

A lot of initiative has been taken up both at the government and private level, however to further fine-tune the overall policy framework for the biodiesel revolution some reforms need to be undertaken. These reforms, if given sufficient attention, will give the necessary fillip and headway to this future green

fuel industry. Some of the recommendations include:

- expediting government procedures of wasteland allocation and process workflow,
- encouraging NGOs/SHGs to take charge of government wastelands,
- providing subsidies to farmers growing Jatropha,
- low interest rate on bank credit for Jatropha plantation,
- special research and development initiatives to identify best short duration intercrops for specific regions,
- private companies undergoing wasteland development and providing infrastructural benefits should be recognised and given income tax benefits,
- minimum support price for Jatropha seeds and oil at the national level be allowed,

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- subsidy on micro-irrigation for biodiesel plantation,
- encouragement of women's involvement in Jatropha plantation.

Some strategies for successful Jatropha investments can be

- choosing the best location for Jatropha projects,
- getting the best business plan formation,
- getting the best planting stock/material,
- adopting best practices in Jatropha agronomy,
- scaling operations and organisation strategies for Jatropha as per local condition,
- exploring the intercropping operation strategies for complementary oil crops as per local conditions,
- going socially responsible, environmentally & carbon positive for Jatropha projects,
- mapping global biofuel blending specifications & demand for Jatropha oil,
- complete utilisation of Jatropha, including bio waste & seedcake,
- evaluating risk for a realistic view of Jatropha project potential for long term forecasting etc.

The long-term success of Jatropha hinges on countries understanding the environmental and social benefits of the plant, and weaving these benefits into their Jatropha projects. As technological



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developments stand today, Jatropha has the potential to serve as fuel to power automobiles, combine heat and power plants and cooking stoves etc.

At this critical stage in Jatropha development, countries need to understand the evolving market for Jatropha oil and biodiesel, and capitalise on them. Alternative uses for Jatropha Oil will go a long way towards providing long-term returns and sustainable development in the areas within which they work.

An under explored revenue stream for Jatropha is the utilisation of the by-products and the rest of the plant. The toxicity of the plant renders much of the plant unfit for animal consumption, which in turn facilitates it to be used as fence crop. Ideally, countries need to explore ways to make their Jatropha projects a low-risk venture with attractive returns.

Biofuels should contribute to climate change mitigation by significantly reducing greenhouse gas emissions, as compared to fossil fuels. Biofuel pro-

Due to its toxicity, Jatropha is suitable for being used as fence crop.

duction should not violate human or labour rights and should ensure decent work and the well-being of workers. Biofuel production should contribute to the social and economic development of local, rural and indigenous people.

Biofuel production should not impair food security. Biofuel production should minimise negative impacts on food security by giving particular preference to waste and residues as input, to degraded lands as sources and to yield enhancement methods that maintain existing food supplies. Countries implementing new large-scale biodiesel projects should assess the status of local food security and should not replace staple crops if there are indications of local food insecurity. Biofuel production should also avoid negative impacts on biodiversity, ecosystems, and areas of high conservation value. Thus, Jatropha based biofuel production can very well be integrated in the energy policies of countries across the world.

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Zusammenfassung

In Überlegungen zur Überwindung der Energiekrise haben die Biokraftstoffe einen wichtigen Platz eingenommen. Das zunehmende Interesse, Biokraftstoffe anzubauen, birgt allerdings eine potenzielle Gefahr für die Ernährungssicherung. Der langfristige Erfolg der Biokraftstoff-Produktion hängt davon ab, ob Länder die Vorteile der Jatropha-Pflanze für die Umwelt und für die Gesellschaft erkennen und in eine vielseitige effiziente Produktionsstrategie einbinden. Die Situation der Ernährungssicherheit vor Ort muss überprüft werden. Ist eine drohende

Ernährungsunsicherheit zu erkennen, dürfen Grundnahrungsmittelpflanzen nicht ersetzt werden. In die Energiepolitik vieler Länder lässt sich die Biokraftstoff-Produktion auf Basis der Jatropha-Pflanze sehr gut integrieren.

Resumen

El alza en los precios globales de los combustibles ha hecho que los biocombustibles tomen la delantera en los planes para la gestión de la crisis energética en todo el mundo. Sin embargo, el interés y los avances en la producción de biocombustibles representan también una amenaza potencial para la

seguridad alimentaria. El éxito a largo plazo de la producción de biocombustibles depende sustancialmente de que los países comprendan los beneficios ambientales y sociales del piñón o jatropa (*Jatropha curcas*) y sigan estrategias multifacéticas para una producción eficiente. Se requiere evaluar la situación de la seguridad alimentaria local y no se debería reemplazar los productos agrícolas básicos si hubiese indicios de inseguridad alimentaria a nivel local. La producción de biocombustibles basada en la jatropa puede integrarse sin problema alguno en las políticas energéticas de todos los países.