

D1 OILS¹

Region: Africa

Country: Zambia

Crop/Feedstock: Jatropha

Practices: Contracts with local goods and service providers (CN); Training and education programmes (TE); Health and safety equipment/devices and information (HS); Microlending and financial support mechanisms (MF); Integrated Food and Energy Systems (IF); Trainings on good agricultural practices (TR);

Issues: Income Generation and Inclusion of Smallholders; Local Food Security; Community Development;

D1 Oils plc² is an alternative energy crop company. The company is pioneering the development of *Jatropha curcas*, a robust, drought tolerant tropical oilseed bearing tree, into a new sustainable energy crop that has the potential to replace food crops and mineral oil as a source of fuel as well as provide a local source of feed protein. D1 is committed to enabling developing countries to benefit from growing energy crops for the production of a local source of fuel and a new protein source. D1 Oils is currently working on a pilot project with 90 farmers growing 40 000 Jatropha trees in Zambia, implementing best practices from operations in Africa and Asia, multiyear scientific research and the use of new selected seed cultivars. D1 Oils is implementing learnings from this pilot to enhance D1 Oils' projects in Malawi, Indonesia, and India as well as scaling-up operations in Zambia.

Issues: Income Generation and Inclusion of Smallholders; Community Development

Practices: Contracts with local goods and service providers (CN); Training and education programmes (TE); Health and safety equipment/devices and information (HS); Microlending and financial support mechanisms (MF);

As part of the pilot, D1 Oils is establishing a network



of outgrowers to supply Jatropha grain for commercial production of a local fuel source and fertilizer. Some of the benefits of this model versus extensive plantations are the reduced capital costs, no land acquisition (i.e. no displacement of people and no foreign land ownership), and improved relationships with local communities. With regard to the outgrowers involved in the project, they are extending their capacity and knowledge regarding crop diversification and yield improvements and are generating income in traditionally cash-poor months. The outgrower scheme is being expanded with a phased approach, including:

- demonstration and training farms established in the first year; followed by
- successful demonstration farmers recruited as lead farmers for the following year; when
- lead farmers then start recruiting other farmers to grow jatropha.

¹ The information included in this document is based on information provided directly by the producer, which was not verified by the Food and Agriculture Organization of the United Nations (FAO)

² www.d1plc.com

This phased approach is being implemented in order to develop understanding among farmers of the labour investment necessary to grow Jatropha and of the crop in general, in order to reduce failure rate, improve grain productivity and improve the time to first grain production. The approach has resulted in renewed interest in Jatropha, higher levels of awareness of the benefits of using best practices, and better plantation quality.

To support the outgrower scheme, D1 Oils is also engaged in other good practices including capacity building and community development. For example, D1 is working with schools to educate pupils about Jatropha and has initiated a pilot plantation of 400 trees with three schools where the children plant and maintain the trees, with the guidance of company extension agents. To date, over 1 000 school children have been educated on the growing and maintenance of Jatropha. One challenge with this programme is that the basic agricultural experience of the teachers is mixed and therefore the plantation quality is variable.

D1 has also initiated training and education programmes for the workforce and farmers on better agronomical practices. Capacity is being built using a best practices manual developed from four years of field experience and multinational scientific research, regular training and strategy sessions, monthly field

visits by management, and the establishment of training farms in operational areas where good results obtained through improved agricultural practices are illustrated. These training programmes and capacity building have resulted in significant increases in crop yields and profitability.

Additional community development activities not related to the Jatropha project include co-funding of a community clinic and financial support for the Ministry of Agriculture field days. These efforts have helped to strengthen relationships with rural stakeholders and improve the livelihood of local communities.

Issue: Local Food Security
Practices: Integrated Food and Energy Systems (IF); Trainings on good agricultural practices (TR);

D1 Oils recognizes that 'Good Jatropha' farming is not just about Jatropha, but ensuring that Jatropha can fit into the existing local agricultural system, thus D1 Oils is working with outgrowers and the local community to enhance local food security. For example, farmers are encouraged to develop a land-use plan providing for planting density and intercropping. Intercropping also provides for an alternative income while Jatropha is established, and for nitrogen fixing where leguminous crops are planted. In addition to intercropping, some farms are also integrating Jatropha with livestock. This reduces costs of weeding, and manure from animals can be used for further soil maintenance and improvement. Other trials are being conducted to assess the potential to use Jatropha seedcake as an organic fertilizer, with some very good results to date. A key part of the pilot scheme is to evaluate each farmer wishing to join the scheme in order to ensure that they have sufficient land of suitable quality available; farmers are additionally contracted on the basis of limiting Jatropha plantings to ensure that Jatropha farming alongside food production is within their capabilities.

