

# Bioenergy – a new opportunity or a major threat to pastoralism?

*Can pastoral communities benefit from the cultivation of biofuel crops? Work carried out by SOS Sahel International UK to facilitate debate and understanding on the current biofuel boom in dryland Africa points to some interesting possibilities. At the same time many questions need to be answered before pastoralists can benefit from bioenergy production.*

*by Daniel McGahey and SOS Sahel International UK*

ONE CRITICISM OF biofuel production is that it contributes to food insecurity and pushes up food prices. To avoid these negative impacts, energy companies and governments are searching for new crops and land where cultivation will not compete with food production. To a growing number of governments and biofuel investors the cultivation of non-edible dryland biofuel crops such as *jatropha curcas* on marginal arid land or wasteland is an ideal solution to the food versus biofuel debate. Yet these lands are vital to the survival and food security of millions of pastoralists and agro-pastoralists. While the renewed focus on drylands is an opportunity for pastoralists to re-emphasise their often underestimated, vital roles within the carbon cycle and the wider economics of arid lands, there are some obvious knowledge gaps which require more research before the key facts and development options can be effectively communicated and debated.

## **Providing energy**

Large-scale commercial initiatives, in which corporations take over vast areas of 'wastelands', is only one of several possible models for growing biofuels. Before the recent boom in this sector there were many small-scale pro-poor bioenergy initiatives in Africa aimed at improving rural poverty and supporting energy self-sufficiency. However, energy requirements in pastoral areas are generally low, and little is known about where and when energy self-sufficiency could be beneficial. For pastoralists, energy requirements are likely to vary depending on the level of income and context. For example, where fuel is required to run pumps for boreholes, and where there are high demands for fuel for the transport of animals and animal products, small scale biofuel projects could be beneficial. There are also major uncertainties about whether crops like *jatropha* will provide the yields necessary to ensure a constant supply of



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Boy and cattle in North Kordofan, Sudan

fuel. The agronomy and potential of the crop under arid conditions is poorly understood and yields are likely to be poor in most pastoral areas unless irrigation is used. Better understanding of potential dryland bioenergy crops is required to explore whether a successful smallholder model of biofuel production is possible.

### Improving incomes

Biofuel projects could also offer significant improvements in household incomes. For example, women in Zimbabwe earn supplementary incomes selling soap, and fuel for cooking and lighting extracted from *jatropha*. Similarly, in the drylands of Benin people have exported *jatropha* seeds to France for soap production since the 1940s. More recently in Mali and Ethiopia, rural people have gained income from selling

*jatropha* seeds to the industry through outgrower schemes. If these projects could be initiated without interfering with livestock management and mobility, significant improvements in poverty in pastoral communities could be gained.

### Addressing persistent problems

The renewed interest in the development of pastoral drylands could be used as an opportunity to address many of the persistent social and environmental problems found in these regions. Remote pastoral societies tend to be marginalised from decision-making processes, unable to defend their rights to land. Their arid rangelands are often the last to receive investment, and when development interventions are made these are usually inappropriate. The current focus on pastoral rangelands for bioenergy production

represents an excellent opportunity for pastoralists to gain greater recognition for their rights to land and for involvement in decision making, especially where weak national laws and policies concerning bioenergy development offer poor protection from exploitation.

The present bioenergy boom also creates an opportunity for pastoralists to highlight their vital, underestimated role in providing wider environmental services and valuable economic gains from marginal land. Interest by investors in acquiring pastoral land for bioenergy production should be accompanied by an analysis of the total costs of these investments compared to the diverse economic gains from pastoralism. As well as providing direct economic benefits, pastoralism creates various indirect tangible and intangible values to society. It is also increasingly being recognised as an important linchpin to solving several global environmental problems. Pastoralists are active managers of their natural resources and have developed some of the most biodiverse habitats in the world, supporting carbon sequestration and wildlife conservation. When their ability to access and manage their rangelands is restricted by inappropriate development policies or the appropriation of favourable areas of land and critical resources, such as water, their mobility and capacity to manage their natural resources declines. This is an opportunity cost, as the loss of variability in the remaining rangeland means that indirect global environmental services are lost. These losses must be weighed against any likely economic benefits from bioenergy production.

### **We need to know more**

It is clear that there could be potential to improve pastoral livelihoods but we must learn more about how biofuel use and

cultivation could be integrated with existing dryland uses. Reports emerging from existing large-scale *jatropha* schemes suggest that in some cases dryland people have been granted access to intercrop groundnuts for the first few years before the plants mature. In some parts of India the focus has shifted from *jatropha* to *pongamia pinnata*, as the plant grows taller and thus has a greater potential for intercropping. Could these crops also offer potential for intergrazing with livestock? Successful small-holder development of *jatropha* would provide farmers and agro-pastoralists with new cash crops and could also provide energy for local use and may provide wage labour opportunities. On the other hand, the cultivation of non-edible dryland crops like *jatropha* as presently planned seems likely to take over substantial areas of seasonal pasture essential to pastoral livelihood systems. Even if *jatropha* cultivation were not possible for agronomic reasons, land once alienated from pastoral uses is rarely returned and the toxicity and lifespan of this crop means a return to permanent pasture is likely to be difficult and costly.

There are clearly a number of research questions in need of urgent answers before governments and pastoralists can make informed choices regarding bioenergy production in the drylands.

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Source: **Bioenergy and Pastoralism: Challenging the Wastelands Myth**, by Daniel J McGahey, SOS Sahel International UK, 2008

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