

Biofuels, land access and rural livelihoods in Mozambique



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ACRONYMS

| | |
|---------|---|
| AWF | African Wildlife Foundation |
| CEPAGRI | Centro de Promoção da Agricultura (Centre for the Promotion of Agriculture) |
| CFJJ | Centro de Formação Jurídica e Judiciária (Centre for Legal and Judiciary Training) |
| CPI | Centro de Promoção de Investimento (Investment Promotion Centre) |
| DNTF | Direção Nacional de Terras e Florestas (National Directorate of Lands and Forests) |
| DUAT | Direito de Uso e Aproveitamento da Terra (Land Use and Benefit Right) |
| EIA | Environmental Impact Assessment |
| EJ | Exajoules |
| GDP | Gross Domestic Product |
| GoM | Government of Mozambique |
| MoU | Memorandum of Understanding |
| MPEL | Mozambique Principle Energy Ltd |
| NGO | Non-Governmental Organisation |
| REDD | Reduced Emissions from Deforestation and Forest Degradation |
| USD | United States Dollar |
| WWF | Worldwide Fund for Nature |

CONTENTS

| | |
|--|----|
| EXECUTIVE SUMMARY | 1 |
| I. INTRODUCTION | 5 |
| 1.1. Topic and rationale..... | 7 |
| 1.2. Research methods | 8 |
| II. THE COUNTRY CONTEXT | 11 |
| 2.1. Socio-economic context and biofuels initiatives | 13 |
| 2.2. Policy and legal framework for biofuels production..... | 17 |
| III. BIOFUELS PROJECTS AND LOCAL LAND RIGHTS IN PRACTICE | 25 |
| 3.1. Reconciling competing resource uses | 27 |
| 3.2. Community consultations and community-investor partnerships | 34 |
| IV. CONCLUSION | 41 |
| REFERENCES | 45 |



EXECUTIVE SUMMARY



Mozambique is considered to have one of the largest biofuels production potentials in Africa. Apart from meeting energy demand, the government sees the production of biofuels as a good opportunity to reduce poverty in the country. But, where appropriate conditions are not in place, the biofuels boom may result – and is resulting – in poorer groups losing access to the land on which they depend, with major negative effects not only on local food security but also on the economic, social and cultural dimensions of land use.

This report documents how the spread of biofuels is affecting land access for poorer groups in Mozambique, and what actions are being taken, successfully and unsuccessfully, to secure land access for poorer groups. To the extent possible given the recent nature of the biofuels boom in Mozambique, the report also assesses the early impacts of a few biofuels projects. The report is based on a review of existing documentation, on multi-stakeholder interviews and on case studies of three biofuels projects. The aim is to feed into debates on biofuels both nationally and internationally.

In Mozambique, the promotion of investment in biofuels takes place within the context of a legal framework that protects the land and resource rights of local communities. But several biofuels projects were approved before the necessary planning and monitoring tools were put in place, and before a national strategy had been approved. That strategy was finally approved in 2009.

Competition for higher-value resources existed well before the biofuels campaign was initiated. In this sense, biofuels production *per se* cannot be blamed for land use conflicts, as the same types of conflicts have occurred in other economic activities. But, in conjunction with other activities like mining, forestry and tourism, biofuels projects further exacerbate competition for land, water and other resources. Therefore, policy tools to reconcile competing resource uses and users and to ensure full consideration of social and environmental aspects are crucial to minimise the risks and maximise the benefits that may be brought by biofuels investments.

Yet the findings summarised in this report suggest that the design and, even more so, the implementation of these policy tools is riddled with difficulties. Poor planning and lack of compliance with existing land use plans, and lack of proper institutional coordination among sectoral government agencies are

resulting in conflict between different resource uses (e.g. biofuels, food, conservation, tourism) and users (e.g. biofuels investors and local communities).

Similarly, the inability to enforce the provisions of the progressive legislation that regulates natural resource management, protects community rights and reconciles the interests and rights of competing resource uses results in threats to community rights over land and other resources such as forests and wildlife. To date, the effectiveness of community consultations as a tool to protect community rights remains questionable. None of the case studies examined in this report involved genuine and enforceable partnership agreements between investors and communities. Some consultation minutes did refer to the creation of jobs and social infrastructure, though usually with rather open wording (without clear timeframes, for instance).

The claim often made that feedstock for biofuels can be commercially grown on marginal land is misleading. The report documented the case of a company that switched from jatropha to a forestry project due to poor soils. Fertile lands and water availability are necessary for commercially grown biofuels. As a result, land allocations to large biofuels projects are very likely to affect areas with high suitability for crops or with forestland. This makes addressing the issues raised in this report all the more important, as the impacts on biodiversity and local livelihoods can be substantial.

Another biofuels project discussed in this report was subsequently terminated following changes in the world economic climate and lack of compliance with the investor's contractual commitments. Yet, by that time, the land had already been allocated and cleared, with direct impacts on local livelihoods and conservation activities. This calls not only for more thorough scrutiny of investment proposals, but also for a clearer determination of the real opportunity costs linked to land allocations for biofuels. Coupled with a clearer definition of concepts like "marginal land" and with a more accurate agro-ecological zoning, these are essential for informed decision-making.

The rapid evolution of the biofuels sector in Mozambique, and the growing interest in land acquisitions for other agricultural purposes, particularly agri-food, call for further research and continued monitoring of developments in the sector and of their implications for land use change, biodiversity and local livelihoods.

I. INTRODUCTION



1.1. TOPIC AND RATIONALE

Mozambique is considered to have one of the largest biofuels production potentials in Africa. Researchers affiliated with the International Energy Agency estimate that Mozambique can produce around 7 Exajoules (EJ) of biofuels and consumes around 0.18 EJ (GoM, 2008). The Copernicus Institute of Utrecht University has indicated that Mozambique is well positioned to exploit its potential to produce biomass energy for export to the international market, as well as meet its own internal energy needs (Batidzirai *et al.*, 2006). This assessment refers to the country's relative abundance of land resources, favorable environmental conditions and low population density.

The identification of the country's energy potential led the Government of Mozambique (GoM) to step up efforts to attract investments for biofuels production. Apart from meeting energy demand, the government sees the production of biofuels as a good opportunity to reduce poverty in the country by opening up rural areas, creating employment, improving degraded land and infrastructure while generating much needed foreign currency (GoM, 2008). Biofuels are also believed by some to have the potential to reduce emissions of greenhouse gases, and thus contribute to climate change mitigation. A first campaign was directed at mobilising farmers to plant *jatropha* for biodiesel.

However, where appropriate conditions are not in place, the biofuels boom may result – and is resulting – in poorer groups losing access to the land on which they depend, with major negative effects not only on local food security but also on the economic, social and cultural dimensions of land use. There is a need for appropriate policies to regulate the development of the biofuels sector. Some large biofuels projects in Mozambique have been approved before a clear policy was put in place. But the Mozambican government has recently approved the Policy and Strategy for Biofuels (Resolution No. 22 of 2009).

This report documents how the spread of biofuels is affecting land access for poorer groups in Mozambique, and what actions are being taken, successfully and unsuccessfully, to secure land access for poorer groups. To the extent possible given the recent nature of the biofuels boom in Mozambique, the report also assesses the early impacts of a few biofuels projects. The aim is to feed into debates on biofuels both nationally and internationally.

The remainder of this section outlines research methods and field sites. Section II discusses the socio-economic and policy context for biofuels production in Mozambique. Section III analyses the impact of biofuels production on local land and resource access, drawing on evidence from our field research. The conclusion summarises key findings.

1.2. RESEARCH METHODS

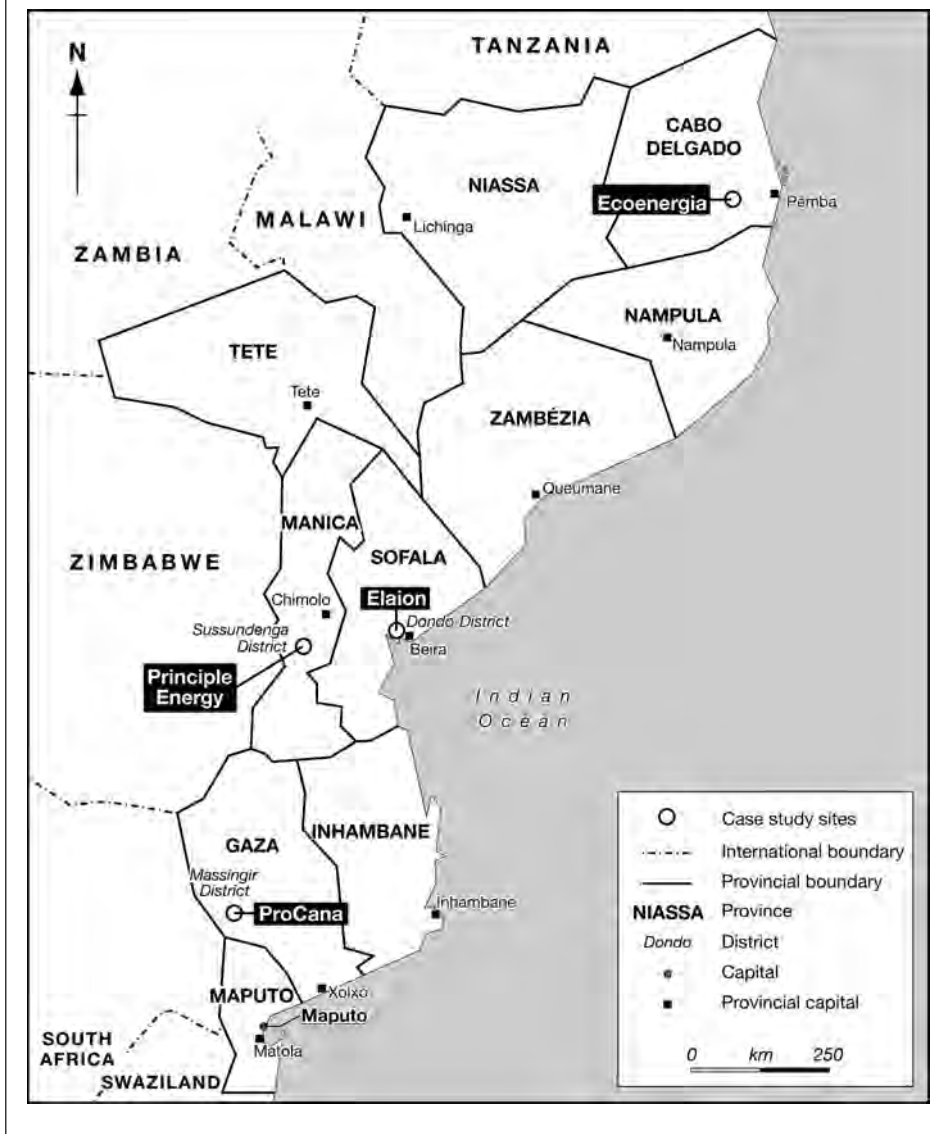
The report is based on a review of existing documentation, on primary data collection through interviews and on case studies of three biofuels projects. The documentary review covered, in particular, the project documents supplied by the Investment Promotion Centre (CPI) and the National Directorate of Lands and Forests. Information collected from the Centre for the Promotion of Agriculture (CEPAGRI) and from other sources for a previous study on biofuels commissioned by WWF was also used for this analysis (Nhantumbo, 2008).

Interviews were conducted with various stakeholders from government, private sector, researchers and affected communities. The authors also participated in a number of meetings where biofuel issues were discussed, including meetings organised by a local NGO (JA) and by a biofuels project (ProCana).

The three case studies covered biofuels projects involving different production models and at different stages of implementation – ProCana, Principle Energy and Elaion. Findings are discussed in detail in this report. The next few sections provide some basic information about each of these projects.

ProCana is a private company with British interests that was planning to invest USD 510 million and grow sugarcane through a 30,000 ha plantation in the Massingir District, Gaza Province. 60% of this land is for the production of feedstock, the remaining 40% is for the processing, irrigation and drainage schemes, for warehouses, and for schools, health facilities and residence for the workers. An additional 5-11,000 ha was to be cultivated under an outgrower scheme. The project was approved in 2007. Before this report went to press, the government of Mozambique cancelled the deal due to the company's non-compliance with the investment plan. Most of the planned investment (USD 475 million) was meant to come from loans which became more difficult to obtain as oil prices changed and the world went into recession.

FIGURE 1. MAP OF CASE STUDY AREAS



Mozambique Principle Energy Ltd (MPEL) is a joint venture between a UK-based financial institution listed on the Alternative Investment Market in London and another company. The project is a greenfield investment in the central Manica Province, Sussundenga District. It involves building a large-scale integrated ethanol from sugarcane production facility. Total project funding is USD 290 million, including equity funding and project financing. MPEL was planning to acquire approximately 23,000 ha of land, of

which about 20,000 were to be fully irrigated and planted with sugarcane (the remainder being for the project's facilities). Data from the provincial cadastre office suggest that the allocated land area is of 18,000 ha. Interviews with the company manager indicated that up to one third of the land area will be for outgrowers. The contract farming component does not include direct cash credit for smallholders, but does involve technical support and inputs and MPEL will act as a financing intermediary with an approved "land bank" in Mozambique to facilitate access to credit. Contracts are expected to define the price of the produce.

Elaion Africa is a German company dedicated to the production of jatropha over 1,000 ha in Sofala Province, Dondo District. The company obtained a land use certificate in early 2007. Less than a quarter of the area is currently cultivated, including the nursery and research plots (100 ha) and the area already planted (50 ha). The main market for the oil is Germany. Before the publication of this report, the company decided to switch to a forestry rather than biofuels project due to soil quality considerations.

Additional cases like Ecoenergia, a project to develop sweet sorghum and sugarcane in Cabo Delgado Province, are referred to when relevant.

II. THE COUNTRY CONTEXT



2.1. SOCIO-ECONOMIC CONTEXT AND BIOFUELS INITIATIVES

Mozambique has a population of 20 million of which more than 60% live in rural areas. 54% of Mozambicans still live below the poverty line and the discrepancy between rich and poor is deepening with a Gini coefficient of 0.42.¹ Per capita GDP is still less than USD 500. The prevalence of HIV/AIDS at 16% of the population represents a further challenge in meeting the development goals (GoM, 2006a).

There are about 36 million ha of land suitable for agriculture of which only 10-12% is currently under cultivation (GoM, 2006b). The forests cover 40.1 million ha of which 26.9 million ha constitute productive forests (high value timber, allocated for large scale concessions and annual harvesting licenses of maximum 500 m³) while 13 million ha are within protected areas. 16% of the country is protected. In addition to this forest area, there are 14.7 million ha of thicket, woodlands and forest in areas of shifting cultivation (Marzoli, 2007).

Following growing demand for land for biofuels production, particularly ethanol, the government halted land allocation for this purpose and conducted a national land zoning exercise for the whole country. This exercise aimed to identify land potentially available for incoming investments, and was concluded in early 2008 at a scale of 1:1,000,000. This scale is too small to be accurate, and another zoning at a scale of 1:250,000 is being prepared. The 2008 zoning indicated that the country has only about 7 million ha available for allocation to land-based economic activities, including biofuels. This is a smaller area than was expected.

Land under formalised “land use and benefit rights” (DUAT, from the Portuguese term) was considered as not potentially available. But there are large tracks of land held under DUAT, whereby the land was allocated by the government to private investors, that are underutilised or not used. To address this issue, in 2008 the National Directorate of Lands and Forests trained its staff to monitor more effectively whether DUAT holders are implementing their land use plans. Mozambican law enables the government to withdraw the land if the investment plan for which it was granted is not complied with.

1. The Gini coefficient measures the degree of inequality. Values range between 0 and 1, with 0 being perfect equality and 1 perfect inequality.

This legal provision is often not properly enforced. But lack of capacity is only part of the cause for this. It is difficult for government agencies to revoke DUATs held by people with political and economic influence. As a result, greater capacity to monitor and sanction may result in smallholders and ordinary citizens risking to be most affected, rather than those possessing large tracts of unused land.

According to the provincial land authorities of Manica Province, the results of the national land zoning are being used to direct the investments of potentially available lands. It is also used to inform the preliminary studies that ought to be carried out before land is allocated. This includes, for example, the analysis of the soils and agricultural potential, or the suitability of planting a certain feedstock in the area requested, among other aspects. The zoning is being used in conjunction with the Food Production Action Plan, which identified priority districts for food production.

According to CPI documentation and other information obtained during data collection, in 2008 there were 16 proposed or ongoing biofuels projects at different stages of development and/or implementation, covering a total area of over 2.32 million ha (Table 1). Most of these applications were submitted between 2005 and 2008 but have not yet been approved. Far less land has actually been allocated than applications made.

There are some discrepancies in the statistics. For example, Albino (2008) indicated that about 2.7 million ha were included in the various expressions of interest to invest in biofuels by nine companies in the provinces of Maputo, Gaza, Inhambane in the South, and Manica and Sofala in the centre of Mozambique. More recent information suggests that 25 projects were under review by March 2009 (Simon Norfolk, pers. comm.).

Furthermore, the majority of the projects do not indicate the land area being requested and many others have unit areas of less than 1,000 ha, and therefore come under the responsibility of provincial rather than national government agencies. Additionally, the total area involved in the campaign led by the President for rural communities to engage in jatropha plantations is not known.

| Provinces | Bioethanol | | Biodiesel | | Feedstock | Investors/Projects |
|--------------|------------|----------------|-----------|------------------|--|--|
| | Number | Area (ha) | Number | Area (ha) | | |
| Maputo | 1 | 29,000 | 2 | 21,000 | Coconut oil, jatropha, palm oil, sugarcane | JATROPHA, SABIOL-Sabie, Petromoc, Maragra |
| Gaza | 2 | 634,346 | | | Sugarcane, jatropha, sweet sorghum | ProCana, Agrihold, Grynberg Petroleum |
| Inhambane | | | 1 | 11,000 | Jatropha, coconut oil | Geralco, SOMOIL, Afreco-Jetro, Agrihold, C3, Deulco |
| Sofala | 1 | 10,000 | 1 | 1,001,000 | Jatropha, sugarcane, palm oil | ECOMOZ, MOPAC, Elaion Africa, Petro-Buzi, Principle Energy |
| Manica | 1 | 18,600 | 2 | 112,000 | Sugarcane, jatropha | Principle Energy, SUNBIOFUELS, ADAMA, Odeveza |
| Zambezia | 1 | 160,000 | 1 | 160,450 | Jatropha, coconut oil, sweet sorghum | Grown Energy Zambezia, MADAL, MOPAC |
| Tete | 1 | | | | | N'zou Project Ltd |
| Niassa | | | | | | |
| Nampula | 1 | | 1 | 50,000 | Soja oil, jatropha, palm oil, sugarcane | Mj3 Lagoas, C.I. Monapo |
| Cabo Delgado | 1 | 120,000 | | | Sweet sorghum, sugarcane, jatropha | Haha Project, SEKAB or Ecoenergia |
| Total | 9 | 971,946 | 8 | 1,355,450 | | |

Source: data from CEPAGRI, DNTF, Ministry of Energy and CPI.

Data from CEPAGRI and other government sources indicates that the total proposed investment of these different projects is nearly USD 3 billion which includes the establishment of plantations and the processing industry. Such a level of investment is very attractive for the government, particularly the expectations of job opportunities, increased revenue collection and contribution to the balance of payments through increased export earnings.

². This table includes expressions of interest to invest in biofuels as well as formal applications, whether approved or not yet approved. It is updated to June 2009.



Lino Manuel, 2007

Sugarcane plantations of Maragra – Xinavane, Maputo province.

An analysis of biofuels production viability in Mozambique, incorporating information from Petromoc, the largest fuel distribution company in Mozambique, indicates that the national demand for biofuels is negligible due to the country's relatively small economy (Petromoc, 2008). The researchers and investors interviewed for this study reckon that the national market is too small to consume significant quantities of biofuels blended with fossil fuels. The main fuel consumption is diesel and the current large scale investment is for bioethanol, which can be blended with petrol. The main drivers for production of biofuels are the export market to Europe, the apparent land availability and the low labour costs of production. However, the less stringent environmental regulations in Mozambique, coupled with low government capacity to enforce laws, are also encouraging investment in biofuels. Some interviewees mentioned that it is easier to produce biofuels in Mozambique than in the stricter regulatory context of South Africa. Clearly, national environmental legislation needs to be in line with international standards and frameworks. Ecoenergia and Mozambique Principle Energy have indicated that their planning processes are designed to meet the environmental and social standards imposed by the market (not production) country.

It may be useful to provide some socio-economic background to the three case study sites. The districts of Massingir (ProCana), Sussundenga (MPEL) and Dondo (Elaion Africa) have populations of respectively 28,470, 129,851 and 142,387. Sussundenga covers 705,700 ha of which 50% is described as arable land. However, only 2% is under cultivation by the smallholder farmers. Other indicators show that access to potable water is deficient with people still walking over 2 km to get to the nearest water source; 2% of the people have access to electricity; one clinic serves 17,000 people and only one in nearly 2,600 people is a trained professional. Massingir on the other hand, covers 589,300 ha with about 3,500 farms of less than 2 ha each. Electricity is available only for the town; one clinic is accessible to 4,000 people and there is one professional in 1,100 people. While the other two districts are characterised as a largely subsistence economy, Dondo's economy is supported by the sugar industry which provides employment in the plantations and processing plant besides supporting smallholder production with irrigation schemes. Dondo also has a large cement company. However, indicators such as the proportion of one clinic for every 12,000 people, the existence of one technical person for every 2,130 people and 26,000 smallholder farms of an average size of 0.8 ha paints a gloomy picture about the incidence of poverty.

2.2. POLICY AND LEGAL FRAMEWORK FOR BIOFUELS PRODUCTION

Biofuels policy

The national Rural Development Strategy of 2007 contains a specific objective on biofuels development. Under Strategic Objective 4, the Strategy aims 'to promote the production, consumption, transformation and export of fuels alternative to the traditional ones, namely biofuels produced from crops such as sugarcane, sweet sorghum, sunflower, ground nuts, jatropha, among others'. The Rural Development Strategy does not provide much detail on how the biofuels sector is going to be promoted and how local communities and farmers should be involved in this endeavour.

A National Policy and Strategy for Biofuels was adopted in 2009 (Resolution No. 22) specifically to provide strategic policy orientation for the sector. It was approved following a consultative process which involved a comprehensive

assessment of the potential for production of biofuels in Mozambique (GoM, 2008), the national land zoning mentioned above and workshops held in 2007 and 2008 based on earlier drafts of the assessment study.

Before dwelling on the policy as such it is important to highlight the findings of the assessment study. The study states that the most suitable regions of the country for agricultural expansion are in the central and northern regions of the country, due to the abundance of water resources and good agro-ecological conditions. The study also indicates that the development of activities for biofuels production may increase revenue and generate jobs but it also carries socio-economic risks especially in relation to food security and security of local land rights. Biofuels production, in other words, has the potential to compete with production of food crops and might reduce access to land for smallholder farmers. The study recommends, therefore, that marginal land should be identified for production of biofuels to prevent the competition with use of land for food crops and thus ensure food security and social stability.

According to statements from officers at the National Directorate for Land and Forestry in the Ministry of Agriculture, the issue of food security has been the major concern in the debate on the net benefits of biofuels production. Questions were raised in relation to mechanisms that should be put in place to prevent shifts from food production to biofuels, considering the still severe food insecurity for the majority of the population. Additionally, concerns were raised about markets and business models for biofuels production, especially as it relates to partnerships between smallholders or communities and the private sector.

To address these concerns, the government created a multisectoral commission to lead the preliminary studies for the design of the National Biofuels Strategy and clarify its main policy aspects, namely: prohibition on the use of food crops for biofuels production; jatropha production only in marginal lands; requirement for partnerships with small-scale farmers; and protection of local land rights.

The biofuels assessment study indicated elements to be considered in the design of the National Biofuels Strategy, covering economic, financial and market issues as well as aspects related to socio-economic and environmental sustainability.

Carlos Dominguez, 2009



A good stand of sweet sorghum in Mozambique.

The Policy and Strategy for Biofuels, approved in 2009, pursues several objectives, some of which attempt to address the issues raised by the assessment study. Strategic objectives include: promoting sustainable production of biofuels; reducing the country's dependence on imported fossil fuels; diversifying the sources of energy; promoting sustainable rural development; contributing to foreign exchange generation through increased exports; exploring regional and international markets; promoting research on technologies for production of biofuels by national teaching and research institutions including technologies applicable to local communities; promoting food

and nutritional security; reducing the cost of fuel for the final consumer; and protecting the national consumers against the volatile prices of fossil fuels and energy insecurity.

As indicated by these objectives, the stakes are high particularly given the expected economic benefits. A more explicit objective to ensure equitable sharing of benefits from biofuels would have been useful in guiding further development or use of existing legal instruments to promote the sharing of benefits between the government and local communities as well as in calling the investors to cater for their social responsibility.

The policy also states that the production of the feedstock must follow the national agriculture zoning, must avoid the use of food crops for production of biofuels and must minimise the plantations of large areas of monoculture due

to their negative consequences on biodiversity. Another ‘pillar’ of the policy is the promotion of local development through creation of local employment both in the production of raw materials and also in its processing into biofuels.

As regards the land issues, the policy emphasises the use of the national agriculture zoning to inform the allocation of land for biofuels production. Projects should be approved based on their merit, particularly concerning their sustainability. Minimum risk to food security, loss and degradation of habitat, biodiversity and other environmental damages are among the main aspects that will determine the sustainability of the project.

The policy also mentions that biofuels production can contribute to meeting the demand for domestic energy through production of gelfuel from ethanol. If this line of production is pursued, the contribution to meeting energy needs in the urban areas could have a large impact on the demand for biomass energy. However, there is need to conduct further research to establish whether such investment would affect carbon balance. Indeed, the major claim behind the production and consumption of biofuels is the fact that they are cleaner than fossil fuels. The production of feedstock for biofuels is done on land that is seen as marginal. But in many cases, biofuels projects involve land use changes through removing the tree cover and substituting diverse local species with monoculture. This was observed in Dondo, for example, where a sawmill has been established to process valuable timber and produce charcoal from the areas being cleared for the biofuels project. Land use change is deemed to be a major contributor of greenhouse gas emissions. Therefore, it is essential to empirically examine whether the net emission gains from biofuels projects are indeed positive.

The tools for implementing the policy include developing specific guidance on the approval of land allocations and the issuing of formalised land rights for biofuels projects. It is not clear what gaps would actually need to be filled by such specific guidance.

National legislation on land and natural resources

Mozambique has one of the most progressive land laws in Africa. The Land Act 1997 upholds the constitutional principles that ownership of land and natural resources, both surface and subsoil, is vested in the State, and that land use

rights acquired under customary law or through good-faith occupation must be protected.

The Land Act explicitly protects local land rights based on customary law or on good-faith occupation, irrespective of whether they are formally registered; provides a process to delimit and register collective landholdings in the name of legally defined “local communities”; and establishes mechanisms to promote private investment while safeguarding local land rights, including by conditioning government land allocations to mandatory community consultation processes. This law was completed by its 1998 implementing regulations and by a ‘Technical Annex’ adopted in 1999 to clarify the process to delimit and register community lands.

The requirement for communities to be consulted before land can be allocated to outside investors has direct implications for biofuels projects. In theory, community consultations are seen as an instrument through which local communities can negotiate their participation in project benefits, including employment opportunities and other social benefits. But the outcome of a consultation process is the minutes of the community meeting. The minutes are not a legally binding contract, and no sanctions are in place in the event that private investors do not respect the promises made to the community. Rare exceptions exist, however, when conflicts break out and a more specific compromise agreement is then developed. A legally binding document would be a more effective way of protecting local interests – not only in biofuels but also in other sectors.

The national policies and laws on environment protection, water management and forestry and wildlife also all include provisions to ensure, among other things, that processes to allocate natural resource rights to private economic activities include participation of local resource users. The protection of the rights and interests of local communities has received special treatment in the national legal framework, including to implement the constitutional provisions that recognise the right of communities to participate in decision-making processes related to the use of natural resources within their land areas.

For example, mandatory community consultation requirements also exist under the Forest and Wildlife Act 1999 as a precondition for the allocation of commercial exploitation rights over forest resources. This law also provides

that 20% of public revenues generated by commercial activities in forestry or wildlife (including, for example, eco-tourism) be channelled to the local community that has customary rights in the area.

The country has a strong environmental legal framework which offers a comprehensive set of processes and opportunities for adherence to acceptable environmental standards and for monitoring the implementation of environmental management plans. Decrees No. 45 of 2004 and No. 129 of 2006 regulate the conduct of Environmental Impact Assessments (EIAs). Decree No. 130 of 2006 regulates public participation in the evaluation of the impacts studies and in the monitoring of implementation.

However, the limited resources available to the government constitute an obstacle for effective implementation of environmental safeguards. Our visit to the National Directorate of Environmental Impact Assessment of the Ministry of Coordination of Environmental Affairs indicated that several biofuels projects did not as yet have EIA studies. The limited access that local communities have to information on the socio-economic and environmental costs and benefits of biofuels projects has a negative impact on the quality of community consultation processes.

At the institutional level, the existence of consultative councils at the district level and of community councils for natural resource management as platforms for collective planning and monitoring of local development processes are also a mechanism to ensure balance between different interests concerning the use of land and natural resources.

Overall, the legal and policy framework for sustainable, equitable and participatory natural resource management in Mozambique is quite comprehensive and provides the necessary basis for protecting the most vulnerable segment of the Mozambican society, the rural communities. The legal and institutional framework includes good mechanisms to help communities to secure land access and use and to get benefits from incoming investment including in biofuels production.

However, numerous reports have documented the problems that affect the implementation of these progressive legal provisions (Nhantumbo, 2002; Durang and Tanner, 2004; Tanner and Baleira, 2006; Salomão and Remane, 2007). An analysis of the political economy of community conservation in

Mozambique (Anstey and Sousa, 2001) concluded that the evolution of the legal and institutional framework for community participation in natural resource management had been “necessarily vague”, including with regard to the structural basis of policies and legislation (existing on paper but not in practice) and the dominance of rhetoric over action. Gaps in the legal framework itself also exist. There are no clear legal provisions on how to run community consultation processes, particularly as regards the information made available to communities and the timing to allow full understanding of the proposed investments to inform their position or to establish and legally enforce partnership agreements between communities and private investors.

Recent changes in key aspects of the legal frameworks suggest that the political commitment to implementing the legal provisions that protect local land rights is faltering. A 2007 amendment to article 35 of the Land Regulation 1998, coupled with a subsequent change in its administrative interpretation, have made it more difficult for new community land delimitations to go through: delimitations now require a land use plan and must be approved by the Minister for Agriculture (if over 1,000 ha) or the Council of Ministers (if over 10,000 ha). As “local communities” can include thousands of people, it is quite common for delimitations to fall within the responsibility of the central government. In addition, the regulatory and interpretive change requires communities to show that they can use the land productively. These developments are considered a setback in securing community rights, as the land rights held by the community were intended to give opportunities not only for locally initiated investments, but also for stronger negotiating power with prospective investors and thus for participation in project activities and benefits.

III. BIOFUELS PROJECTS AND LOCAL LAND RIGHTS IN PRACTICE



3.1. RECONCILING COMPETING RESOURCE USES

Competition for higher-value resources existed well before the biofuels campaign was initiated. But, in conjunction with other commercial activities like mining, forestry and tourism, biofuels projects further exacerbate competition for land, water and other resources. The next few sections discuss different types of resource competition, and the effectiveness of existing policy tools in managing it.

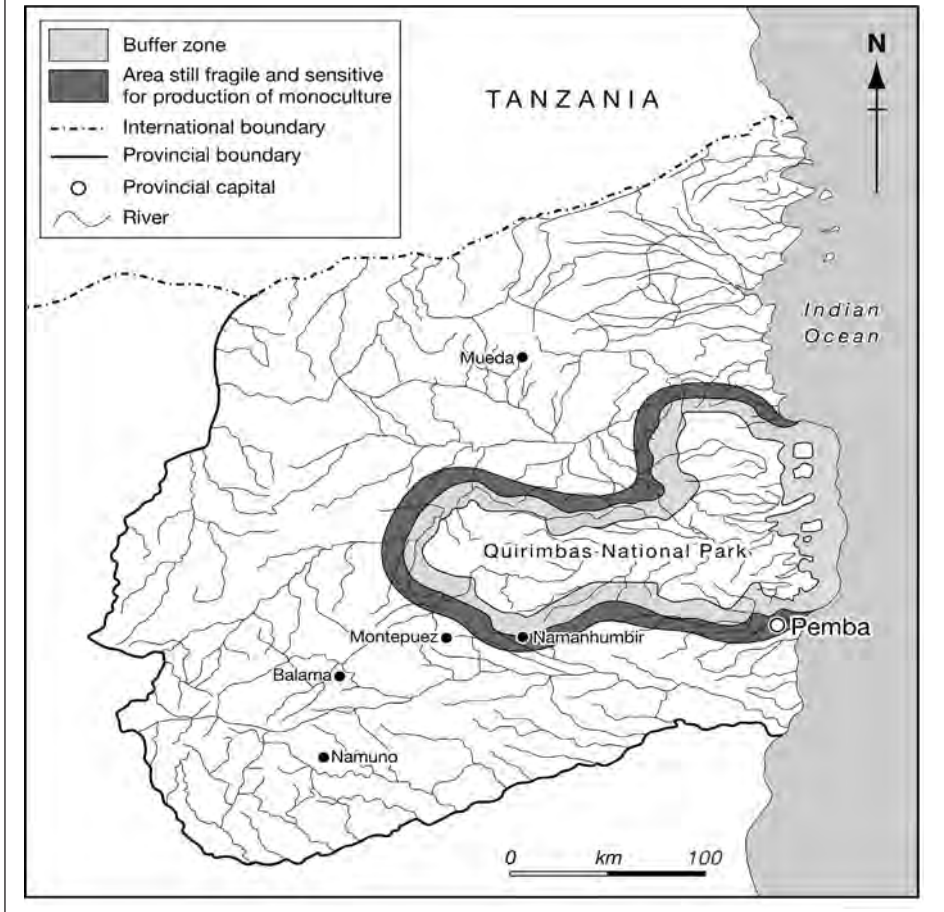
Competition between agriculture, tourism and conservation

Overlapping interests and land uses can be a major source of conflict if proper planning is not carried out and agreed between different stakeholders and government agencies. For example, discussions with local communities, with government officials at the National Directorate for Conservation Areas in the Ministry of Tourism and with the former manager of the African Wildlife Foundation (AWF) working on the Limpopo National Park indicate that the ProCana project was strongly opposed by the tourism sector, and specifically by the National Directorate for Conservation Areas, because of its conflict with the existing land use plans of the Limpopo National Park and lack of sufficient measures to protect community interests.

Part of the 30,000 ha identified by ProCana to develop an ethanol production plant in Massingir District was being used by the communities living along the Elefant River as grazing land for their cattle. It also included land reserved by the Limpopo National Park to relocate communities from within the park as part of their resettlement programme. The overlapping areas for ProCana and the Limpopo National Park resettlement programme could have been avoided. When ProCana was approved, a land use plan was already in place (with large investments in equipment by AWF) and had been approved by the government. The fact that ProCana was nonetheless allocated land in conflict with pre-existing land use planning raises issues as to the relevance of planning instruments and as to which of the competing interests (biofuels, natural park, resettled communities) were being prioritised.

Ecoenergia has been undertaking a comprehensive planning process for the establishment of its investment in Cabo Delgado. Respect for land rights, access to water, limiting the emission of greenhouse gases (in particular carbon) due to land use change, as well as ensuring food security and poverty

FIGURE 2. CABO DELGADO PROVINCE AND THE QUIRIMBAS NATIONAL PARK



alleviation are some of the good practices that should be observed. There are various potential conflicts between different land uses and between different policy goals: biodiversity conservation versus the production of biofuels, potential competition for land by communities versus the boundaries of the plantation areas, access to water resources by communities and wildlife versus the need to provide secure sources of water to enable acceptable growth of the feedstock, among others. For example, the sustainable management of the buffer zone of the Quirimbas National Park (similarly to other protected areas in the country) is meant to prevail over the other economic activities. Figure 2 shows that the Quirimbas National Park includes a number of districts and population settlements. This means that some land clearing is happening inside the areas to provide food for the population

living there. In this context, large land allocations in the area immediately outside the buffer zone (the black-shaded area in the map) may further extend changes in forest cover and increase pressure on biodiversity. This is particularly so for large allocations for monoculture plantations. The holistic, strategic planning required to deal with these issues is constrained by the division of labour among government departments – with the Ministry of Agriculture being responsible for land allocations, and the ministry in charge of tourism being responsible for protected areas and buffer zones.

The Ecoenergia and ProCana examples suggest that the coordination required among government institutions to prevent conflicts in land uses is apparently missing. A comprehensive and integrated zoning and strategic environmental assessment would be a useful complementary instrument to current efforts to zone areas that can potentially be used for agriculture including the cultivation of biofuels feedstock. The undertaking of the detailed zoning at scale 1:250 000 becomes urgent to inform decision making on land allocation

The prioritisation of large private investments is at odds with the national strategy for rural development. Strategic Objective 2 of the Rural Development Strategy of 2007, which is related to productive and sustainable management of natural resources and the environment, determines that at least 50% of the land titles issued by 2010 must be in favour of rural communities, while at least 20% should be issued to individuals and the private sector.

In addition, the Rural Development Strategy recognises that environmental policies, including policies for territorial zoning and planning, determine that planning undertaken by the different sectors must be done on a consensual and coordinated basis. In the face of the poor coordination of interventions at the rural level, the Strategy adds that, in the process of its implementation, mechanisms must be found to improve multisectorial coordination at provincial, district and local levels. Piecemeal land use planning directed to specific activities such as reforestation, zoning of the coastal area for tourism purposes, or zoning for biofuels is clearly a “waste” of opportunity to undertake a more comprehensive land use planning which will cost more but the long term benefits will definitely pay off.

Most of the land that is likely to be allocated to biofuels also has some kind of forest cover and wooded grasslands. Principle Energy in Manica has been



Lorenzo Cotula, 2008

A sugarcane project in Mozambique.

allocated land with “degraded” forest. The land has been used for harvesting valuable timber products under the annual license regime. It is argued that biofuels are a “clean” source of energy but there is a need to establish whether substitution of the native vegetation by monocultures is likely to reduce carbon dioxide emissions or otherwise. The issue of climate change and the potential for implementation of Reduced Emissions from Deforestation and Forest Degradation (REDD) schemes in Mozambique demands further research to rigorously establish the net environmental gains of biofuels and proper integration of these aspects in planning processes.

Finally, biofuels projects are often associated with major environmental concerns. These include the quantity of water likely to be used in feedstock production and possible competition with water needs for food production, livestock and domestic consumption. The discharge of pollutants due to use of agrochemicals (e.g. fertilisers, pesticides, herbicides) may damage the quality of soil and water resources and affect the aquatic life. The absence (at the time of data collection for this study) of the Ministry for Environment from the inter-ministerial group on biofuels makes it more difficult for environmental considerations to be given proper thought.

Community vs. investor rights

Conflicts between communities and investors did not start with biofuels. There are numerous examples countrywide. A recent government report (DNTEF, 2008) identified 76 land conflicts, with 76% of these occurring in the provinces of Tete, Cabo Delgado and Zambezia. The report points out several causes of these conflicts: high demand for land for tourism investments on the coast; poor dissemination of the legislation to local communities; deficient community consultation processes; and, in the case of community/investor boundary disputes, not rigorous enough delimitation of areas (giving more land than authorised).

But while properly structured biofuels projects can create new jobs and livelihood opportunities, the biofuels boom has also been associated with tensions between investors and local communities, as biofuels projects may involve the acquisition of local land rights and affect water access for local farmers. The concept of marginal land being used to justify allocation of land for biofuels needs further analysis and clarification. Biofuel crops like sugarcane, sweet sorghum and even jatropha do require soils with a reasonable level of fertility and access to water.

Several existing and planned sugarcane projects are in areas with easy and abundant access to water. Examples include two sugar companies in the Incomati River in Maputo, the Buzi and Zambezi Rivers in Sofala as well as the Lurio River and the other rivers in the areas that Ecoenergia is aiming to use in Cabo Delgado. But ProCana exemplifies a project that was allocated land and water resources with several competitive uses: a land area identified for the resettlement of communities displaced from the nearby Limpopo National Park and with the potential for game farming and tourism development; competition for water resources from the Limpopo River and from the Massingir dam reservoir; and competition for use of alluvial land which supports small scale agriculture, among others.

Statements from community representatives in six villages affected by ProCana (namely Zulu, Banga, Tihovene, Chinghangane, Condzwane and Cubo), collected during the fieldwork, illustrate the frustrations that exist at the local level. During the community consultation, the villagers had agreed to cede part of their land to the ProCana project. Those lands were not being used. Villagers retained other areas for their own activities, which consist of

subsistence farming and pastoral activities. Yet villagers felt that ProCana had been encroaching on their land with no respect for the agreed boundaries, though this study could not document specific instances of this. With regard to the land previously allocated for the resettlement of communities from the Limpopo National Park and then given to ProCana, the communities were allocated new land for pasture further away from the residential areas, which would mean longer travel time and possibly promoting seasonal migration of young children to look after the animals.

Ecoenergia indicated that the selection of Cabo Delgado is related to the availability of water and land as well as good climate conditions – all of which, in its opinion, are conducive to sustainable biofuels production that does not affect biodiversity. The investor maintains that it will use degraded lands, crops with limited water requirements (sweet sorghum) and water efficient irrigation techniques. However, the company also plans to construct dams which can be used also for electricity generation. The fact that the Ministry of Housing and Public Works that hosts the water directorate is absent from the inter-ministerial committee on biofuels suggests that water rights may be overlooked in the decision-making process.

Competition between government and local communities: national economic priorities vs. community environmental and social rights

In many instances, project proponents are solidly backed up by government and political representatives. Some of the government officials in charge of implementing the law are not fully performing their duties with regard to the protection of community rights, and in many cases they position themselves clearly in support of the interests of incoming investors.

Indeed, investment projects are seen as having the potential to contribute to poverty reduction and to bring substantial socio-economic benefits to local communities. Job creation and construction of social infrastructures such as roads, schools and health clinics are among the benefits commonly cited. In some cases, the possibility of economic partnerships between investors and communities is also flagged. Given the severe poverty affecting the country, especially rural areas and communities, local stakeholders, including local government authorities and community leaders, are encouraged to focus on these potential benefits and to minimise any concerns related to potential negative environmental and social impacts. Environmental issues are very



ProCana installations in Massingir

rarely raised and discussed with local communities when projects are presented for land allocation. This is so despite the fact that the Regulation of Environmental Impact Assessment also requires public consultation to discuss mitigation measures on investments likely to have negative environmental impacts. Social issues such as resettlement are even presented as a positive result for communities, with promises of better houses, schools and other social benefits at the relocation areas. The example of the Limpopo National Park, however, demonstrates that there are serious problems with resettlement programmes and that solid quality indicators for monitoring improvements in living conditions are usually absent from such programmes. While environmental legislation requires an environmental license to be obtained before any other licenses or authorisations are issued, the ProCana project was approved and operations initiated without this license.

In some cases, however, the lack of prioritisation of social and environmental issues perceived to constitute a hindrance to biofuels projects has to do with private gain rather than with pursuit of the national interest. No case of corruption or direct conflict of interest was documented in the fieldwork undertaken for this study. But, in more general terms, Mozambique has been classified as one of the most corrupt countries in the world by the 2007 Global Integrity Report.³ Corruption has also been identified as a constraint specifically affecting the natural resource management sector (DNTF, 2008).

3. <http://report.globalintegrity.org>

3.2. COMMUNITY CONSULTATIONS AND COMMUNITY-INVESTOR PARTNERSHIPS

Mozambique's progressive legal framework regulating land and natural resources provides openings for local communities and farmers to be involved in investments initiatives such as biofuels projects and benefit from them. Community consultations and community-investor partnerships appear to be a promising avenue for this to happen. But despite their promise for more inclusive biofuels production, community consultation processes have suffered from a number of major problems. These problems emerge clearly from the fieldwork in the project sites and from the analysis of the community consultation minutes for the case study projects. The problems documented by this study for the biofuels sector mirror problems discussed by others with regard to other sectors such as tourism.⁴ They have direct repercussions on the quality of the community-investor partnerships that may emerge from the consultation.

Lack of advance information. In general, communities are not receiving relevant information in advance. This leads to a lack of time and assistance from the government or NGOs for communities to understand the impact that a particular project may have on their rights to land and other resources, or the interrelations between a project and other rural economic activities like agriculture, charcoal production or fisheries.

Most consultations are performed in one meeting only. This limitation is ultimately rooted in the requirements of Mozambican law – companies that hold consultations in this way formally comply with the rules. When there is more than one meeting, the first is normally limited to organisational aspects, such as agreeing the date and time of the meeting, without passing to the communities any relevant information on the project at stake. All communities interviewed indicated that they only received information and details of projects on the meeting day. This was the case with Principle Energy in Manica Province and Elaion Africa in Sofala Province.

4. Several research reports have been produced and workshops organised on community consultations by government institutions (e.g. Center for Legal and Judiciary Training, CFJJ) and civil society organisations (e.g. ORAM, CTV, JA).

The consultation process can be improved significantly. For example, the preparatory meetings apparently conducted by the companies with the local leadership (traditional and local government official) can be used as an opportunity to provide detailed, objective and simplified but accurate information on the project. This same written information could be used by the local leaders to discuss with the communities the advantages and challenges of the investments as well as build prior consensus on the issues that the community would like to see reflected in the minutes of the consultation process and eventually into a kind of contract agreement between the communities and the companies.

In the case of ProCana, the process started with an air survey during which the company apparently decided about the limits of the land it needed for the project. It was only after this that the communities were approached to be informed of the company's intention and the land area it wanted. The different communities affected by the ProCana project were all consulted in one collective meeting. The first reaction of some of these communities was negative, especially from the Tihovene, Chingangane and Banga communities. These argued that there was no "free" land to give to the project since the communities needed all their land for grazing. As a result, subsequent meetings had to be organised to secure land for this project.

Consultation meetings are generally attended by community leaders, such as traditional chiefs and local party leaders, whose opinions tend to dominate. Preliminary meetings held with the traditional leaders ensure that the consultation meetings will produce an outcome favorable to the investor. In the ProCana consultation, a member of the Condzwane community stated that the population was informed that the district land registry services would go to their area to delimit the land for the community, but that this had not happened.

The consultations also tend to be gender biased. Despite being the majority of the workforce in rural lands, women are rarely involved in the consultation processes and they almost never sign the respective reports/documents.

Most records of the consultation process are inadequate. The minutes contain insufficient information or lack uniformity in their presentation, and also vary in the type and quality of the information registered. What is currently called "consultation minutes" is generally simply a registry of the

event, including the date of the meeting, a list of some participants and two or three interpretations of participants' comments. In most cases the only comments registered are general statements similar to the following comment included in the minutes for the Elaion Africa consultation meeting:

“Communities have agreed with the project because it will bring a lot of benefits to the communities, especially jobs. The community welcomes the project because it will help to combat poverty and requests the proponents not to keep its promises only on paper. The community requests the proponents to respect the community.”

In the communities' perspectives expressed in the consultation minutes, addressing poverty entails job creation, social infrastructure such as roads, markets, clinics and schools and producing coffins, for instance. The latter was indicated by the interviewees in Dondo as one of the benefits given by Elaion to the local community. However in general even when the companies comply, they tend to offer low paid jobs, infrastructure built with precarious materials (reeds, poles, etc.) and without articulation with the respective ministries, such as education and health, to provide the necessary equipment and qualified staff. This limits the potential benefits to the target community.

Some consultation minutes present conflicting data. While on the one hand they may describe cultivated agricultural fields and other forms of evidence of human occupation, on the other they include a declaration stating that the land is not occupied for the purpose of the investor's request. In the case of the Elaion Africa project, for example, the minutes indicate that the communities accepted the occupation of the area because the area “was only used by charcoal producers”. In the site visit, however, the researchers realised that communities were also farming in the area. Community plots were included in the project area, where plotters agreed to switch from maize and cassava to jatropha. The minutes do not mention this fact, nor do they include any statements from charcoal producers themselves. Neither is there any indication of the apparent agreement that was reached between the charcoal producers and the company, whereby the former could produce charcoal from the waste generated by bush clearing operations.

The minutes of the community meetings may not reflect the views of the community representatives, even when they include specific community

requests made to the investor. In the minutes of the consultation process for Mozambique Principle Energy, communities expressed concerns about their access to the areas along the Muvuaze river, which they use for cultivation. They asked not to be barred from accessing those areas. During the interview with the manager of Principle Energy, it was indicated that the “pivot” plantation approach – that is, sugar cane planted within the circles – was to protect patches of indigenous forests, stimulate the natural regeneration and possibly introduce game. The smallholder farming plots were (according to the initial plans) located between the boundaries of the concession and the river. For communities dependent on rainfed and low input agriculture, the continued production along the riverbank was necessary to maintain their livelihoods. The minutes also mention that “There are few small scale families within the project area which will be relocated outside the project area”. This conflicts with another statement in the same minutes, which indicates that communities would accept the project provided that the company agreed not to resettle the people residing within the project area. The resettlement plan, still to be approved, envisages the relocation of people to the fall out areas between the pivot circles within the area, rather than to outside the area.

The information in the minutes related to any investor commitments is generally vague, and is framed in generic formulations. Often there is a lack of detail and of measurable indicators related to the period within which the agreements should be implemented. For example, the minutes of the consultation meeting for Principle Energy simply state that the project was accepted on the basis that: communities would benefit from the production activities that the company wants to undertake; the company must create jobs to help the development of the communities; the company must allow community access to the roads existing in the area; and the company must develop social infrastructure, respect the community and refrain from resettling people within the company plots.

The Provincial Governor of Manica is cited in these minutes as stating that the project will create 4,000 permanent jobs and will refrain from relocating people. The minutes also refer to the company following guidance on EIAs and respecting the rights of the communities. But a Memorandum of Understanding (MoU) formalising this agreement does not seem to have been signed between the government and the company nor between the company and the communities.

In the case of Elaion Africa, the minutes indicate that the District Administrator and the Director of the Economic Services were favorable to the project on the grounds that “the area was free and all the concerns of the communities were addressed”. Communities are cited as having said that: “we want to see the project being implemented in practice”; “the area can be used because the majority of the people only produce charcoal”; “the project is welcome because it will help us to stop cutting trees so that we can plant jatropha together”; and “the project must recruit local work force”.

Apart from the broad formulation of the commitments on job creation, the point about tree cutting deserves attention. The reality is that jatropha planting is done after clearing the remaining natural forest. Charcoal production and timber processing were some of the ways developed by Elaion to make use of the products from the cleared forest.

The statement above also minimises the importance of the charcoal production for the local communities: this has been one of the significant income earning activities of the Dondo communities. The fact that heads of families will not have access to the forest creates a significant impact on local livelihoods.

In the case of ProCana, due to the resistance from some communities to cede their land, the government and the company had to make the promises more concrete. Minutes from a consultation meeting organised with these communities (Tihovene, Chinhangane and Banga) indicate that an agreement was reached that the company would not only secure and fence enough land for grazing but would also build three water sources, two tanks for cattle drinking, storage facilities, one polytechnic school, one rural clinic and 5,000 houses. The company also committed itself to creating local employment, by contracting 8,000 workers gradually from January 2007; to organising exchange visits for the local communities to Malawi and Swaziland; to providing technical assistance for communities to produce sugarcane; and to creating a 5 km buffer zone between community areas and the project area.

This plan was to be implemented within 36 months starting January 2007. The District Administrator requested that the plan be implemented as quickly as possible and so did the communities that attended the meeting.

Consideration for future land needs and community aspirations. The consultation processes do not seem to include consideration of future development in terms of land reserves for present and future community generations. Areas of land are not being set aside for community expansion to accommodate housing and economic activities of the youth and young adults, including agriculture, tourism or other activities. The issue of urbanisation and social infrastructure development in rural settlements is also not taken into account when large scale private investment projects are being evaluated and land is allocated to them.

The following statement made by community members suggests that local opinions and concerns are ignored by project proponents and misrepresented in consultation minutes. It was not possible in our research to corroborate this account with ProCana staff. At the very least, the statement does illustrate the perceptions and frustrations felt by some community members.

“When some members of the population of Chinhangane drew attention to the limits of the area ceded to the project, the representatives of ProCana said that those were not the ones because they had already identified them when the area was surveyed from the air”. “At that stage we wanted to know how it was that they could have identified the area and its limits without consulting us, knowing that it belonged to us. We thought that they would take our position into account following our complaints, but we have seen that this is not the case, since they have put in a trail from where they believe to be the true limit of their land into our land. The area which ProCana is currently occupying is where we cut wood for construction of our houses. For this very reason and as a means of compensation we asked that they should build us conventional houses and also dig irrigation trenches as well as put in sources of water. Up to now we have had no reply to these demands and nobody from that undertaking has been willing to make a promise to do so”.

Lack of genuine community-investor partnerships. According to Matakala (2004:77), partnerships are seen as “processes for creation of mutual relationships, with concrete actions”. In other words, they are agreements generally resulting in advantages for both sides. In this case, for both local communities and the private investor. Matakala divides partnerships into two

categories – namely, formal partnerships, which are based on a written agreement and with legal force, and informal partnerships, which are based only on a mutual understanding, verbal or written, but without legal force. Most partnerships that result from community consultation processes fall into the last category.

Partnerships are insufficiently covered in the legislation. Article 27(3) of the Land Regulation foresees the possibility of partnerships between the private sector and local communities, but leaves the responsibility to the District Administrator for setting out the conditions under which this will be done (in terms of basic principles/criteria to be observed). It would have been better to articulate those principles directly in the legislation. The National Strategy for Biofuels could also have provided clearer guidance on partnerships, including clarity on community benefits particularly employment opportunities. In regard to these, the type of jobs, skills required, capacity building and other aspects should constitute key points to be considered in the decision-making process for the approval of investments.

The extracts from the consultation minutes cited above indicate that District Administrators do not seem to have a clear idea about how the promises made by investors should be treated in terms of formalisation, monitoring and accountability. None of the '*partnership agreements*' has been formally adopted as an official document in order to confer it with legal value before the judicial authorities, should a conflict arise between communities and investors.

IV. CONCLUSION



In Mozambique, the promotion of investment in biofuels is taking place within the context of a legal framework that protects the land and resource rights of local communities. But several biofuels projects were approved before the necessary planning and monitoring tools were put in place, and before a national strategy had been designed and approved. That strategy was finally approved in 2009.

Competition for higher-value resources existed well before the biofuels campaign was initiated. In this sense, biofuels production *per se* cannot be blamed for land use conflicts, as the same types of conflicts have occurred in other economic activities. But, in conjunction with other activities like mining, forestry and tourism, biofuels projects further exacerbate competition for land, water and other resources. Therefore, policy tools to reconcile competing resource uses and users and to ensure full consideration of social and environmental aspects are crucial to minimise the risks and maximise the benefits that may be brought by biofuels investments.

Yet the findings summarised in this report suggest that the design and, even more so, the implementation of these policy tools are riddled with difficulties. Poor planning and lack of compliance with existing land use plans, and lack of proper institutional coordination among sectoral government agencies are resulting in conflict between different resource uses (e.g. biofuels, food, conservation, tourism) and users (e.g. biofuels investors and local communities).

Similarly, the inability to enforce the provisions of the progressive legislation that regulates natural resource management, protects community rights and reconciles the interests and rights of competing resource uses results in threats to community rights over land and other resources such as forests and wildlife. To date, the effectiveness of community consultations as a tool to protect community rights remains questionable. None of the case studies involved genuine and enforceable partnership agreements between investors and communities. Some consultation minutes did refer to the creation of jobs and social infrastructure, though usually with rather open wording (without clear timeframes, for instance).

The claim often made that feedstock for biofuels can be commercially grown on marginal land is misleading. The report documented the case of a company that switched from jatropha to a forestry project due to poor soils. Fertile lands and water availability are good for commercially grown biofuels. As a result,

land allocations to large biofuels projects are very likely to affect areas with high suitability for crops or with forestland. This makes addressing the issues raised in this report all the more important, as the impacts on biodiversity and local livelihoods can be substantial.

Another biofuels project discussed in this report was subsequently terminated following changes in the world economic climate and lack of compliance with the investor's contractual commitments. Yet, by that time, the land had already been allocated and cleared, with direct impacts on local livelihoods and conservation activities. This calls not only for more thorough scrutiny of investment proposals, but also for a clearer determination of the real opportunity costs linked to land allocations for biofuels. Coupled with a clearer definition of concepts like "marginal land" and with a more accurate agro-ecological zoning, these are essential for informed decision-making.

The rapid evolution of the biofuels sector in Mozambique, and the growing interest in land acquisitions for other agricultural purposes, particularly agri-food, call for further research and continued monitoring of developments in the sector and of their implications for land use change, biodiversity and local livelihoods.

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Biofuels, land access and rural livelihoods in Mozambique

Isilda Nhantumbo and Alda Salomão

In recent years, global demand for biofuels has increased as a result of changing oil prices coupled with concerns over energy security and climate change. In Mozambique, private investors have expressed growing interest in biofuels production. While this trend may create new livelihood opportunities, it may also undermine access to land and natural resources for rural people.

This report explores the early impacts of the biofuels boom on access to land and on local livelihoods in Mozambique. It draws on fieldwork on biofuels projects representing different business models for agricultural production.

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