



Commercial Biofuel Land Deals & Environment and Social Impact Assessments in Africa

Three case studies in Mozambique and Sierra Leone

Maura Andrew & Hilde Van Vlaenderen

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Abstract

The rapid increase in attempts by foreign investors to acquire large tracts of land in Africa for biofuel developments has generated substantial concern about their potential negative impact on the communities living in the targeted areas. This includes concerns about the impact on local residents' livelihoods, their access to land, natural resources and labour, and their food security.

This paper examines three case studies of proposed biofuel developments in Mozambique and Sierra Leone in terms of their social displacement impacts and the extent to which such impacts can be avoided or minimised. The case studies show that even in areas with low population densities and settlements concentrated in villages where it is easier to minimise displacement impacts, livelihood displacement impacts still cannot be entirely avoided due to communal and scattered land use in most rural areas. Environmental and Social Impact Assessment (ESIA) processes have changed the location, size and boundaries of developments to reduce displacement impacts, but more mitigation measures — such as outgrower schemes and land dedicated to food production — can provide further livelihood restitution and avoid food security impacts. The three biofuel ventures also highlight the influence of tenure security for local land right holders in determining the nature of the land deals and the consultation processes: cases where land leases are made with central government seem to provide fewer incentives for developers to negotiate directly with local communities and provide them with lower levels of compensation.

About the authors

Maura Andrew works for the Department of Environmental Science, Rhodes University and holds a Masters Degree in Geography; her Masters Thesis focused on land use and agricultural change in the former Transkei between 1920 and the 1980s. She has conducted numerous social, economic, rural livelihood and resource utilisation studies in South Africa and other countries such as Malawi, Mozambique and Madagascar. She has undertaken Social Impact Assessments for a variety of development projects, and the development of Resettlement Action Plans (as per IFC guidelines) for projects in South Africa and Mozambique. She also recently gained skills and experience in conducting Economic Impact Assessments and undertook studies of large sand mining projects in Madagascar, Mozambique and Egypt.

Hilde Van Vlaenderen has a doctorate in psychology and, over the past twenty years, has worked as a NGO consultant with skills and expertise in projects, programmes and organisations in a variety of countries. Her particular areas of expertise are social impact assessment, public participation and community development, programme evaluation, organisational development and gender issues.

Acronyms

CIFOR	The Center for International Forestry Research, Indonesia
CES	Coastal and Environmental Services
DJC	Dutch Jatropha Consortium
ESIA	Environment and Social Impact Assessments
FFLS	Farmer Field and Life Schools
FSC	Forest Stewardship Council
EurepGAP -2007 now GLOBALGAP	Integrated Farm Assurance for Combinable Crops
GHG	Greenhouse gas
IFC	International Finance Corporation
IIED	International Institute for Environment and Development
LARRI	Land Rights and Resources Institute
PPP	Public Participation Processes
RAP	Resettlement Action Plan
RTRS	Round Table on Responsible Soy
RSPO	Round Table on Sustainable Palm Oil
RSB	Roundtable Sustainable Biofuels
SAN/RA	Sustainable Agriculture Network/ Rainforest Alliance
UNECA	United Nations Economic Commission for Africa
FAO	United Nations Food and Agriculture Organisation

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1. Introduction

Recent dramatic increases in oil and food prices have resulted in a significant increase in attempts to acquire large tracts of land for biofuel and other food production initiatives in developing countries — in sub-Saharan Africa in particular. Land acquisition is usually effected through sale or long term leasing of land, held under informal forms of communal tenure, to largely foreign investors (Cotula&Vermeulen 2009; Colin&Woodhouse 2010). While the total land acquired by foreign investors does not yet appear to be large, the size of individual land acquisitions varies, for example very large acquisitions like the 452,500ha biofuel estate in Madagascar. In the four African countries studied by Cotula&Vermeulen (2009), the average acquisition size ranged from 7,500 to 22,000 ha. According to Cotula&Vermeulen (2009), the foreign investors' demand for land stems from three factors:

1. concern about food insecurity in wealthy food importing states (i.e. Gulf States)
2. European Union (EU) 10% biofuel mandates¹
3. rising food prices, leading to growing interest in investment in land by agribusinesses seeking more reliable and cost effective supplies of crops, and by speculators seeking to capitalise on cheap land and other resources in Africa and other developing countries.

The rapid increase in what the media has called 'land grabs' has generated huge concern about the potential negative impact on 'host communities' targeted by investors. Key concerns include:

- the impact on local resident's livelihoods
- their access to land, natural resources and labour
- their food security.

These impacts may stem from direct losses (of land and natural resources) and resettlement, and indirect losses linked to population increase and increasing pressure and competition for land, labour and natural resources in areas around the commercial development. Given that existing food security problems and conflicts in many developing countries are likely to be exacerbated by growing populations and demand, as well as by 'climate-constrained production', the 'land grabs' may have significant social impacts (Cotula&Vermeulen 2009). Negative impacts become even more likely when local governments have weak and tenuous ability to participate effectively in land deal negotiations and cope with and manage socio-economic changes equitably and sustainably.

Drawing on qualitative and quantitative data from ongoing Environmental and Social Impact Assessment (ESIAs) processes by Coastal and Environmental Services (CES), local ESIA companies and two authors of this paper (who were responsible for the social specialist studies), this paper examines three case studies of proposed biofuel developments in Mozambique (Grown Energy and the Dutch Jatropha Consortium (DJC)) and Sierra Leone (Addax). All three schemes are in areas where local people live in poverty under various forms of customary tenure. We assess the displacement impact on affected communities, as well as how the legal land rights system, the ESIAs and Biofuel Standards have shaped the development of the biofuel ventures. The DJC venture involves using Jatropha as a feedstock while the other two will use sugar cane and sweet sorgum/cassava. All three ventures proposed developing large feedstock estates (10,000ha+) combined with outgrower schemes².

¹ These are government-regulated percentages of biofuel and fossil oils blended in the national fuel supplies for vehicles.

² Outgrower schemes (also known as contract farming) are business contracts (of variable length) between the farmer who grows the feedstock and the processor/retailer who buys the crop, processes it and sells it on the (usually international) market (Little&Watts 1994; Van Donge 2002). In African communal areas, small-scale outgrowers usually retain land ownership, but in some cases small-scale farmers rent or sharecrop land owned by a commercial developer or landowner (Van Donge 2002). The farmers use the land to grow the crop and agree to sell the produce to the processor or buyer, usually at an agreed price. The processor/buyer agrees to buy the feedstock and often also supplies seeds, fertilizers, pesticides and other crop production inputs needed, as well as transport services. The input costs are then deducted from the crop value when it is harvested and paid for.

This paper first outlines the national and international legal frameworks that have influenced the development and design of the three biofuel case studies, including:

- ESIA policies and practices
- national land laws
- international biofuel standards.

Thereafter we describe the methodology and present a comparative description of the proposed developments and their social baselines. We then discuss the displacement impacts of each venture and the ways developers propose to mitigate these impacts. Finally, we discuss the social and political dynamics and perspectives in relation to land deals, their impacts on displacement and the consultation processes involved. The final section presents some conclusions.

1.1 Environment and Social Impact Assessments

ESIAs are tools designed to facilitate informed decision-making on proposed new developments. While some sectors of the public and civil society think ESIAs provide an opportunity to prevent a development from taking place, this is seldom the case. ESIAs instead focus on revealing potential negative and positive socio-ecological impacts of proposed developments and suggesting ways to mitigate these.

As with most ESIAs, the assessment of the three biofuel ESIAs in the case studies focussed not on whether the development is appropriate or not (and therefore whether it should be approved or not), but on what form should it take. Assessing the relative impacts of alternatives usually forms part of an ESIA, including the 'no go' option. Alternatives often become mitigation strategies — as in the three case studies discussed in this paper. However, these almost always involve gradual or incremental changes (e.g. shifting boundaries or including a contract farming element) which the specific developers are willing and able to consider, rather than fundamentally different alternatives (such as a completely different kind of development like eco-tourism or mining). Only when there are significant impacts that cannot be mitigated and very high profile and politically damaging opposition, are proposed developments not authorised; such cases are rare in Africa, where there is significant political pressure to secure economic development and jobs for citizens, as well as foreign currency and improvements in the balance of payments. So most developments are likely to be approved, even if there are concerns about the impact on existing land users (Karonge 1998; UNECA 2005; Marara *et al* 2010).

With regard to the 'no go' alternative, most local, regional and national politicians and government officials in African countries would view large scale commercial developments as a considerable improvement on the widespread poverty, unemployment, lack of cash incomes and markets, poor infrastructure, malnutrition and diseases, and low levels of education that currently typify most poor rural areas. Land is generally considered plentiful and under-utilised and therefore better used for commercial developments (Sulle&Nelson 2009). In addition, many traditional land use practices are considered unsustainable and damaging to the natural environment. Extensive poverty and inequality in rural communities, and political practices and dynamics that disadvantage the very poor mean that the African governments and environmental practitioners rarely view the 'no-go' option as preferable to commercial development. As the three case studies show, there is often significant local support for such commercial developments.

Most African governments have now adopted ESIA procedures as part of their development project authorisation processes, although some are still in the process of putting the necessary legal and administrative institutions in place (Marara *et al* 2010). However, their ability to implement such legal requirements and ensure compliance is often undermined by capacity constraints, bribery and corruption, and a lack of awareness or concern about environmental problems and ESIA processes. Government decision-making on development projects has also been found to be dominated by concerns about economic development rather than the environmental and social consequences for specific localities. Relatively new environmental authorities often have far less political muscle than older development- and production-oriented departments such as agriculture, energy and mining.

Public Participation Processes (PPP) have been a central component of ESIA practices since they were first introduced in the United States in the early 1970s. International best practice for ESIA processes requires consultation with interested and affected parties (the public) in the assessment process. They need to be informed about the development and should be given opportunities to raise concerns or make suggestions about the proposed development. When effectively undertaken, such public consultation processes can help minimise and manage social impacts. However, this Western concept of public participation and scrutiny of government decision-making is new to Africa and often contrary to traditional and established social and political decision-making processes (Rickson *et al* 1990; Kakonge 1998; Marana *et al* 2010). PPP in ESIA have been found to be weak throughout Africa. Barriers to effective public participation, particularly of affected communities/ households, include established decision-making and consultative practices that exclude vulnerable groups from participating, a lack of awareness about ESIA processes and environmental issues, and levels of poverty that make it difficult for people to attend meetings in distant centres or to become aware of such meetings through newspapers, radio or television. Often local residents depend on traditional authorities and their political representatives to inform them about developments and arrange meetings. When these representatives and authorities have vested interests in securing the development, there is a high risk that potential opposition groups will be kept uninformed and excluded. Language and educational barriers add to these problems.

The quality and effectiveness of ESIA in assessing the social and ecological impacts will depend on:

- the capacity and skills of ESIA practitioners and their willingness to maintain professional standards rather than bend to the needs of the developers
- the national legal requirements
- the capacity of the Environmental Authorities to manage ESIA processes
- the extent to which developers and ESIA practitioners are required to comply with international biofuel standards
- the availability of reliable local data
- financial resources made available for the ESIA.

However, the extent to which the public and civil society groups/organisations participate in ESIA and scrutinise the process and outputs will also play a critical role in ensuring accountability and maintaining professional standards. Kabonge (1998), UNECA (2005) and Marara *et al* (2010) highlight the limited availability of qualified ESIA practitioners in Africa (particularly where ESIA requirements were only recently developed), and low levels of public participation and awareness of ESIA processes. When funders require external/foreign ESIA practitioners with appropriate expertise to get involved, and insist that ESIA comply with international standards some of the weakness of ESIA capacity and quality in Africa can be overcome, as is demonstrated in the three case studies.

ESIA therefore need to take this political and socio-economic context into account to enhance their ability to avoid or minimise negative socio-economic impacts on affected communities in Africa. The ESIA also take place parallel to negotiations around land deals and provide some insight into them. These land negotiations usually do not involve the ESIA practitioners and are regulated by different government ministries, structures, laws and regulations. The following section outlines these land deal processes in Mozambique and Sierra Leone.

1.2 National land legislation and administration frameworks

Customary land tenure and administration laws in Sierra Leone and Mozambique put land ownership in state hands with no privatisation options (Ajei 2008; Schut *et al* 2010; Nhantumbo&Salomão 2010). The state may expropriate communal land if deemed in the 'public interest', and the rights of existing and customary land users are recognised and accommodated to varying degrees. In Mozambique, land tenure reform as outlined in Land Law 19/97 and the 1999 regulations associated with it, enables the titling of land use rights held under communal forms of tenure, and allows foreign and national investors to acquire leasehold rights over land currently held under communal forms of tenure. Existing communal land rights

holders must agree to outsiders and companies acquiring large blocks of land. The titling process entails the official delimitation and recording of the boundaries of the land that particular groups, persons or corporations are entitled to use, usually for a period of 50 years (which can be renewed) (Schut *et al* 2010; Nhantumbo&Salomão 2010).

In Sierra Leone, the Chiefdom Councils Act, Section 28 (d) of the Local Government Act 1994 and the Provinces Lands Act (Cap 122) require a company wanting to lease land to pay surface rent to local authorities. In the arrangement with the government, the Paramount Chief, his Native Administration, the District Council and the landowners sign an agreement/lease and share the surface rent in equal proportions³. Compensation is required if housing and crops of local people in the surface rent area are affected and compensation must be negotiated separately. The lease agreement must state:

1. the rent
2. the number of years
3. the purpose for which the land will be used
4. whether the interest is assignable
5. whether buildings or permanent structures are to be erected and the rights of the parties on the expiration/determination of the lease
6. that the rent is subject to review every seven years by the District Officer/Chief Administration office when the term of years exceeds seven years.

1.3 Pressure to comply with Biofuel Sustainability Standards

Due to the significant international concern about potential environmental, social and food security impacts of commercial biofuel developments in developing countries, several Standards and Certification schemes are in the process of being developed for the biofuel sector, including:

- the Sustainable Agriculture Network/Rainforest Alliance (SAN/RA)
- the Round Table on Sustainable Palm Oil (RSPO)
- the Round Table on Responsible Soy (RTRS)
- Integrated Farm Assurance for Combinable Crops (EurepGAP in 2007 — changed to GLOBALGAP)
- the Forest Stewardship Council (FSC) certification.

Biofuel Standards and Certification schemes are also in the process of being developed by The European Commission Renewable Energy Directive, the Roundtable Sustainable Biofuels (RSB), the Cramer Criteria (the Netherlands), the Renewable Transport Fuel Obligation (UK) and the Better Sugar Cane Initiative (Lewandowski and Faaij 2006; Van Dam *et al* 2008). In some cases, standards by developed by national governments are not associated with certification schemes that monitor compliance (i.e. the EU Renewable Energy Directive and the UK government).

As many developed country governments view biofuels as a way to reduce carbon emissions and meet their Kyoto Protocol obligations, most biofuel standards include criteria related to greenhouse gas (GHG) emissions, and often other environmental standards such as biodiversity, soils, water and air quality. However, social standards and particularly those related to land rights and ‘free, prior and informed consent’ are not included in many of these Biofuel standards. Only the RSB and the RSBO standards, and to some extent the RTRS, include principles of respect for existing land rights holders and ‘free, prior and informed consent’ in cases where land used by communal land rights holders is to be acquired for commercial biofuel developments. These standards also require biofuel developers to comply with all national and local regulations related to human, labour and land rights and compensation in cases of land acquisition and resettlement (Cotula *et al* 2008). The RSB presents several principles directly relevant to potential social impacts of biofuel developments:

³ Legal opinion of the Sierra Leone legal firm, Basma and Macaulay (February 2009)

Box 1: Social principles from the Round Table on Sustainable Biofuels (RSB)

Biofuel production shall:

- not violate human rights or labour rights
- ensure decent work and the well-being of workers
- contribute to the social and economic development of local, rural and indigenous peoples and communities
- not impair food security
- not violate land rights.

The Biofuel Standards and the International Finance Corporation (IFC) Environmental and Social Performance Standards significantly influenced the design of the three biofuel ventures described in the case studies. For all three ventures the developers needed to access loan capital from European development banks to finance their proposed venture; the banks were therefore able to leverage considerable pressure on the developers to undertake ESIA in compliance with IFC's environmental and social performance standards and international biofuel Sustainability Standards currently being developed. The banks and developers want to mitigate reputational risk and meet certification criteria to access European biofuel markets, so the developers contracted non-local ESIA practitioners with experience in conducting ESIA to international standards, sometimes in addition to local consultants hired to undertake ESIA for national authorisation processes. The pressure to comply with biofuel sustainability standards and IFC performance standards resulted in ESIA playing a central role in informing the design of the proposed developments and amending the venture concepts and plans during the ESIA process.

2. Methods

All three biofuel development ESIA were undertaken by Coastal and Environmental Services (CES). CES were commissioned by three investors and their financial backers, which in all three cases involved a major European Development Bank concerned about the environmental and social impacts of the proposed investments. Minimising the social — particularly displacement — impacts of such developments was critical to the ESIA process and development financing, so intensive stakeholder engagement processes and detailed social impact studies were done for each ESIA. CES's stakeholder engagement process in each ESIA entailed two rounds of formal consultation in the initial scoping process⁴, then a final round at the end of the ESIA to present the draft findings/reports and receive stakeholder feedback. During the ESIA, many informal meetings also took place with various stakeholders.

The Social Impact Assessments (SIAs) in each study drew on data from various sources, including:

- consultation and participation processes in the scoping process and issues that arose from them
- the nature and scale of the proposed venture
- existing literature and data on the history, culture, demographics and socio-economic characteristics of the affected areas
- satellite and aerial photographic data of the affected areas and mapped spatial data on existing land uses and vegetation
- interviews with relevant national, provincial, district and local authorities
- focus group interviews with local residents (using various participatory appraisal methods)
- sample surveys of affected households⁵.

⁴ The initial round of consultations focuses on informing people about the proposed development and the ESIA processes and eliciting their concerns. The second round presents findings in the scoping report and recommends which issues and potential impacts should be assessed in the ESIA process.

⁵ The size of the random sample surveys of households was as follows: Grown Energy: 68 households; DJC: 60 households; Addax: 71 households. The questionnaires included questions on the nature and size of the household, their land rights, their history of

To adhere to IFC Performance Standards and the Social Standards for the biofuel industry during the SIA⁶, investors had to revise and modify their project plans and feasibility studies and significantly change the project spatial footprint and location to mitigate social and environmental impacts.

3. Overview of the three biofuel case studies

All three cases studies were initiated by large international or foreign companies. The biofuel venture in Sierra Leone was initiated by AddaxBioenergy, an arm of the Addax and Oryx Group — a multinational diversified energy group with a strong focus on Africa (see www.addaxbioenergy.com). Grown Energy Pty Ltd is a biofuel company initiating a sugar and sweet sorghum ethanol venture in Mozambique; it is a South African company recently purchased by Tata Chemicals, an Indian-based international company specialising in domestic, industrial and farming chemicals (see www.tatachemicals.com). The second Mozambican biofuel venture was initiated by the Dutch Jatropha Consortium (DJC), set up in 2007 by the Green Mills Holding Company based in Amsterdam and Lijnden in the Netherlands (see www.dutch-jatropha.nl). A subsidiary company of DJC, Niqel Lda based in Beira, Mozambique is implementing the project. A summary of the main characteristics of the three biofuel ventures is provided in *Table 1*. Hereafter, the three ventures are referred to by the name of foreign investor initiating the venture. The Grown Energy and Addax ventures are in the final stages of the ESIA processes, while the DJC contract with CES was terminated and the ESIA process postponed due to significant environmental and social impacts requiring the developers to reconsider the site selection and venture size.

All three ventures initially envisaged developing large estates (6,500–10,000 ha) with a smaller outgrower component. The Grown Energy and Addax ventures are similar, as both involve irrigated sugarcane production on about 10,000 ha and food crop production on additional land. The Grown Energy project will also grow sweet sorghum as an additional feedstock. Both ventures will employ about 2,000 labourers (although many of these may be seasonal workers) and produce excess power to be sold to the national grid. The DJC venture initially proposed a concession area of 30,000 ha, but due to significant social and environmental impacts in some areas, the concession area was reduced to 10,000 ha, with 6,500 ha to be used for a Jatropha estate. The envisaged labour force for this venture was comparatively much smaller than for the other ventures on a per hectare basis.

residence in the area, their dwellings, their use of land and natural resources, farming practices, livestock assets, food security, employment and income sources and their relative importance in the previous year and in some cases their expenditure patterns.

⁶ See *section 1.3* for an explanation and discussion of these biofuel standards.

Table 1: Comparative summary of the main characteristics of the three biofuel ventures

	Grown Energy	DJC	Addax
Country	Mozambique	Mozambique	Sierra Leone
Province	Sofala	Sofala	Northern Province
District	Chemba	Buzi	Bombali and Tonkoliki
Location	N'susso	Grudja	Near Makeni town
Processing plant capacity	350,000 litres/ day	10,000 megatons/ year	950,000 tons cane/ year 350,000 litres/ day
Biofuel volume	110,000 million litres/ year	11 million litres/ year	90,000m ³ / year
Feedstock 1	Sugarcane (3,530ha)	Jatropha	Sugarcane
Feedstock 2	Sweet sorgum (2x5470 ha/year)	n/a	
Estate Area	9 000 ha	6,50 ha (of 10,000 ha concession)	10,500 ha
Outgrower area	2,300 ha (including 700 ha for food production)	Unspecified — initially hoped to source 30% feedstock from outgrowers	Scrapped initial 2,000ha for outgrower activities & replaced with food production plots
Outgrower crops	Sweet sorgum and sugarcane	Jatropha	Cassava
Food Production	5,470 ha soya beans rotated with sweet sorgum; 700ha other outgrower food crops	Help households plough land, ensure agricultural inputs available to buy and provide extension services	1,947 ha to produce rice
Irrigation	Central pivots	No irrigation	Central pivots
Power generation	Produced from bagasse – 24MW power plant	Produced from bagasse – 450kW power plant	Produced from bagasse – 30MW power plant
Power sold to national grid	2–4 MW	Not applicable	15MW or 100,000MWh/year
Biofuel market	Export to Europe	Export to Europe	Export to Europe
Transporting fuel	20km via road, rail to Beira Port, then ship to Europe	>70km via road to Inchope (14 trucks/day), rail to Beira and ship to Europe	150km road to Freetown, then via ship to Europe
Construction workers	500 construction workers	190 plantation development workers	800 fulltime local workers; up to 325 expatriates in peak times; 1,500 unskilled seasonal labourers
Operational employees	350–500 skilled operational staff; 1,600 sugarcane cutters 34 days/year if cut manually (60–70 if cut mechanically)	1,000 seasonal unskilled labourers; 311 semi-skilled and skilled employees	920 local permanent employees; 1,000 seasonal workers and 30 expatriates

3.1 Social contexts of the proposed biofuel ventures

The three affected areas share several similarities (see *Table 2*), as follows:

- All rural communal tenure areas where the Chief administers the land on behalf of the land rights holders — the community members.
- Cultivation (largely subsistence, with some market production) is the main livelihood activity; though households engage in various other livelihood activities, e.g. livestock farming, fishing, charcoal production and use/sale of natural communal resources.
- Few formal employment opportunities, except in the town near the Sierra Leone communities.
- Poverty and food insecurity are pervasive.
- Only a few wealthier households practice polygamy.

Table 2: Comparative summary of the main social characteristics of the three sites

	Grown Energy	DJC	Addax
Estate area	9,000ha	10,000 ha	10,500ha
Outgrower area	2,300ha (including 700ha for food production)	30% of feedstock from outgrowers	
Food production	5,470ha soya beans	1,000ha for locals to grow food; DJC to produce maize&sunflowers on 500ha	1,947ha to produce rice
Population	4,773 persons 875 households	25,536 persons 4,256 households	24,000 persons 2,424 households
Land tenure	Communal – not yet titled or demarcated	Communal – not yet titled or demarcated	Clans have group titles usually of >8 ha; non-clan households can lease from title holders
Formal employment	Virtually no existing formal employment opportunities	Virtually no existing formal employment opportunities	Some formal employment opportunities in Makeni town
Livelihoods	Cultivation, livestock farming, fishing, a few traders or artisans using/ trading natural resources	Cultivation, livestock farming, fishing, a few traders or artisans using/ trading natural resources	Cultivation, little livestock farming, bee keeping, making charcoal, hunting , fishing, a few traders or artisans using/ trading natural resources
Cultivation practices	Mostly family labour and hand tools	Shifting cultivation based on clearing woodlands using mostly hand tools and family labour	Grow rice, vegetables in 2 lowland swamps in dry season; use shifting cultivation on rain fed uplands
Food crops	Maize and mapira, vegetables	Maize, sorghum, vegetables, peanuts and sunflowers	Rice, sweet potato, cassava and others
Cash crops	Maize, mapira, cotton, tobacco	Sesame seeds	Rice
Arable plots/ household	Average= 1.7; Max=5	Average= 1.7; Max=5	Unknown
Plot size/ household	Average=2.7ha (Range= 0.5–9 ha)	Average=2.1ha (Range= 0.25–5ha)	Average=1.2ha (Range= 0.4–2ha)
Use of arable lands	Small seasonal vegetable plots on riverbank; larger inland plots in wetter drainage areas outside the village settlement	Households usually cultivate more than one plot and shift cultivation practices; plots located adjacent to the homestead or up to 2hrs walk away	Use a combination of low swamp lands and rain-fed drylands
Settlement pattern	Mostly in villages close to the Zambezi river but some scattered households	Households scattered over large areas but closer to roads and water sources	Mostly in villages but some seasonal hamlets in arable lands
Livestock farming	Some households have cattle but goats, pigs and chickens are more common. Chemba district has more livestock than most other districts.	Most respondents own chickens, few goats, only one keeps cattle. Sleeping sickness rife but livestock numbers higher than other districts	35% derive income from livestock and livestock product sales. 10–20% (nomadic pastoralists only) practice cattle farming
Use of common land	All households rely on natural resources for fuel, building materials, foods, medicines and some income generating activities (i.e. charcoal).		
Polygamous practices	In small number of the wealthier households	In wealthier households; wives live in separate homesteads	In small number of wealthier households
Livelihood constraints	Limited labour, cash and inputs	Limited labour, cash and inputs; natural disasters	Limited inputs, labour and labour saving technologies; livestock damage; limited market access and credit

Food security	All households are food insecure in January; 20% are food insecure for up to 6 months.	66% were food insecure for some time during the year. 20% were food insecure for 4–8 months a year	92% were food insecure in last year. Many households produce insufficient food and/or sell their food to repay loans & pay for other goods and services
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However, a number of important differences — most significantly different land tenure rights — have implications for the social impact of the proposed biofuel developments (see *Table 2*). In Sierra Leone clan-based tenure tends to be stronger than in Mozambique, and allows land right holders to lease land to non-land rights holders (citizens and non-citizens alike). In Mozambique, local residents have land use rights and can register these, but cannot leased land to developers or other local residents. Developers in Mozambique can only lease land from the central state; any affected communal land rights must first be transferred to the state before they can be registered and leased to developers (MozLegal 2004).

The Grown Energy site has a much lower population density than the DJC and Addax sites. Also, most homesteads in the Grown Energy and Addax sites are concentrated in villages, whereas in the DJC site dwellings are scattered, so securing ‘unoccupied’ land was easier in the Grown Energy and Addax cases, than in the DJC case. Different land use patterns and environmental conditions also have implications for displacement and management outlined in the following sections.

4. Key findings on the displacement impacts and mitigation measures

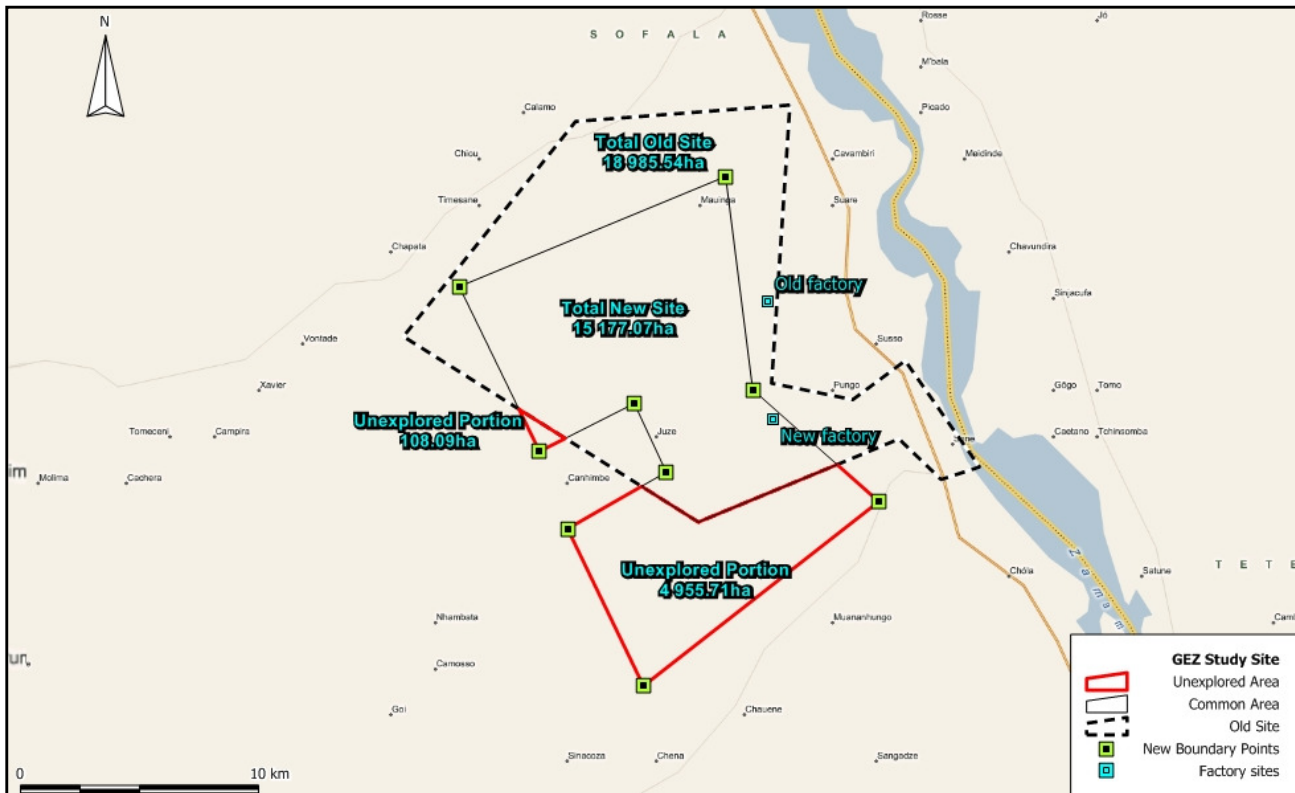
4.1 Grown Energy (Mozambique)

As mentioned earlier in the ESIA, the Grown Energy venture, changed the exact location and boundaries of the concession area to reduce potential negative impacts on local communities. Grown Energy abandoned the first proposed site in the early phases of the ESIA due to considerable environmental and social risks. Thereafter, the current site was proposed and assessed, and again the ESIA resulted in shifting the boundaries of the proposed estate area (see *Figure 1*). Although much of the area of the two alternative boundaries is common, the most recent boundary layout involved shifting away from the eastern and northern villages of the original proposed concession area. With the revised layout, only two villages are still in the concession area (*Figure 1*). Apart from the revised boundaries, the factory was moved a about 5km south of its original position — further away from neighbouring villages (*Figure 1*).

According to preliminary estimates, the revised Grown Energy venture area⁷ will potentially relocate 112 households and 342 arable plots (with an average size of 1.7ha covering 605ha in total), which is about 3–4% of the proposed venture area (of 17,537ha). The original venture area would have resulted in about 284 households being relocated and 721 arable plots (1,276ha) being lost. The biofuel venture will still result in loss of communal grazing and forests used by most people for livestock and income generation, fuel wood, building materials, medicines and wild foods.

⁷ In the absence of sufficiently detailed recent satellite images of the proposed project area, estimates were based on data from local residents on the number of households, the settlement and land use patterns for each village, and results of the household sample survey.

Figure 1: Relative positions of original and revised concession area boundaries and factory



To address displacement and concerns about food security, Grown Energy proposes to include 2,300ha as an irrigated outgrower scheme, with 700ha (30%) dedicated to food production. If land is shared equally among the 342 affected households, they could each access 6.7 ha of arable land — much more than most local households currently cultivate. As Grown Energy will also supply irrigation, land productivity will be higher. As limited labour and other assets might make it difficult for local affected households to cultivate so much land, more households could potentially benefit from the scheme. Growing beans on the estate between the two annual sweet sorghum crops, in addition to the outgrower farms, could be a valuable source of protein for locals and the market, helping alleviate concerns about increased food insecurity and in all likelihood alleviating current food insecurity problems.

However, to ensure such benefits materialise, institutional arrangements and distribution of benefits must still be determined in consultation with affected parties, to be negotiated and decided on in the process of developing a Resettlement Action Plan. Although the ESIA provides a framework for developing a RAP based on the World Bank and the IFC's Best Practice Resettlement Guidelines (IFC 2006; World Bank 2002), it will only be developed when the proposed venture is authorised. Developing the action plan will require a full census of affected households, establishing their entitlements and livelihoods restitution packages, and ensuring adequate compensation for any loss of assets and livelihoods. Resettlement guidelines require that wherever possible, new houses, land and livelihoods should improve on former circumstances.

Grown Energy's proposed mitigation measures should provide adequate compensation for the loss of individual land holdings, physical assets and crops. However, the value of livelihoods dependant on communal land and natural resources is much more difficult to determine and compensate. The actual impact on these livelihoods will depend on how abundant such resources are on remaining community land and the extent to which new employment opportunities provide access to alternative livelihoods.

4.2 Dutch Jatropha Consortium (Mozambique)

A number of zones for the proposed 30,000ha DJC site are shown in the satellite image (*Figure 2*)⁸. The ESIA found that local residents had quite densely (one household every 10–16ha) settled and used two zones (2a and part of 1c — see lighter patches of cultivated land in *Figure 2*) (see *Table 3* for specific estimates of households in each zone). Due to discrepancies in the average arable plot size from spatial data on cultivated lands and the household survey, two methods were used to develop estimates of potential displacement, producing a high and a low estimate. If DJC used 100% of the land in each zone in the proposed 30,000ha concession, the high estimate suggested 2,196 households would be affected (*Table 3*)⁹. This was considered an overestimate as it represented half of the households for the whole Grudja locality (4,256 households) while the venture area only affects 32% of the Grudja locality. ESIA specialists considered a lower estimate of 955 affected households¹⁰ more realistic but still tentative¹¹.

resettling any homesteads and to clear and till new arable lands for affected households who need alternative land. They also propose to work with and assist local farmers to encourage them to abandon traditional shifting cultivation practices and use their arable lands more intensively and sustainably. They are already working with the local authorities and residents on agricultural pilot projects to encourage and facilitate these changes in farming practices. As local charcoal production is having a detrimental effect on the valuable forest areas, DJC will encourage charcoal producers to limit their activities to areas that DJC will clear for their estate, and will provide alternative employment and income sources for local residents.

To minimise potential displacement impacts, the SIA recommended the Jatropha estate and facilities be limited to lower density zones to reduce the number of potentially affected households to 266. Displacement impacts could be further reduced by avoiding residential and cultivated areas in the recommended lower density zones and only using a proportion of the land for the estate or focusing on outgrower schemes in these areas. Although these recommendations complemented the agronomic soil analysis, they were contrary to the vegetation/biodiversity analysis, so many of the least populated areas had relatively high conservation value and were therefore no-go areas. Shortly after discussing these issues with the DJC investors, the CES ESIA process was discontinued and investors reconsidered their venture. Subsequently, investors recently revealed that the proposed venture area had now been reduced to 10,000 ha (51% of the 19,461ha covered by 1a-c and 2a zones in *Figure 2*), with only 6,500 ha of this to be used for the DJC Jatropha estate. The remaining 3,500 ha would provide small ecological corridors, accommodate existing cultivated lands and settlements, and provide alternative arable lands for affected households. DJC proposes to use the less populated areas in these zones to minimise resettlement impacts to less than 150 households (based on CES's low (and more realistic) estimate). DJC also plans to avoid

⁸ Zones based on particular soil characteristics.

⁹ No. mapped arable plots in each zone divided by 1.7 (average number of plots cultivated by surveyed households).

¹⁰ Total cultivated land area divided by 3.57 (average cultivated land (2.1 ha) multiplied by 1.7 (average plots per household)).

¹¹ As local residents cultivate irregularly shaped plots and often leave some trees growing inside the plot, the lower estimate may still be an overestimate. However, Geographic Information Analysis may have missed cultivated lands that have not been cultivated for a long time. A complete census in the proposed concession area is needed for more precise calculation, which was beyond the scope of the ESIA.

Figure 2: Satellite image of proposed 30,000ha DJC concession area indicating the various zones



Table 3: Estimated density of cultivation and households by zone in proposed DJC concession

	1A	1b	1c	1d	2a	2b	2c	Total
Total area	1,676ha	4,677ha	2,737ha	2,401ha	10,371ha	2,485ha	5,366ha	29,712ha
Cultivated	83ha	263ha	294ha	75ha	207ha	10ha	768ha	1,699ha
Prev. cultivated	1.7ha	117.2ha	336ha	11ha	183ha	0ha	1,063ha	1,711ha
Total cultivated	85ha	380ha	630ha	86ha	389ha	10ha	1,831ha	3,410ha
% Cultivated	5	8	23	3.6	3.8	0.4	34	11.5
High HH* estimate	132	120	429	167	110	12	1,226	2,196
Low HH estimate	24	106	176	24	109	3	513	955
% all affected HH	2.5	11.1	18.5	2.5	11.4	0.3	53.7	100.0

* HH=Household

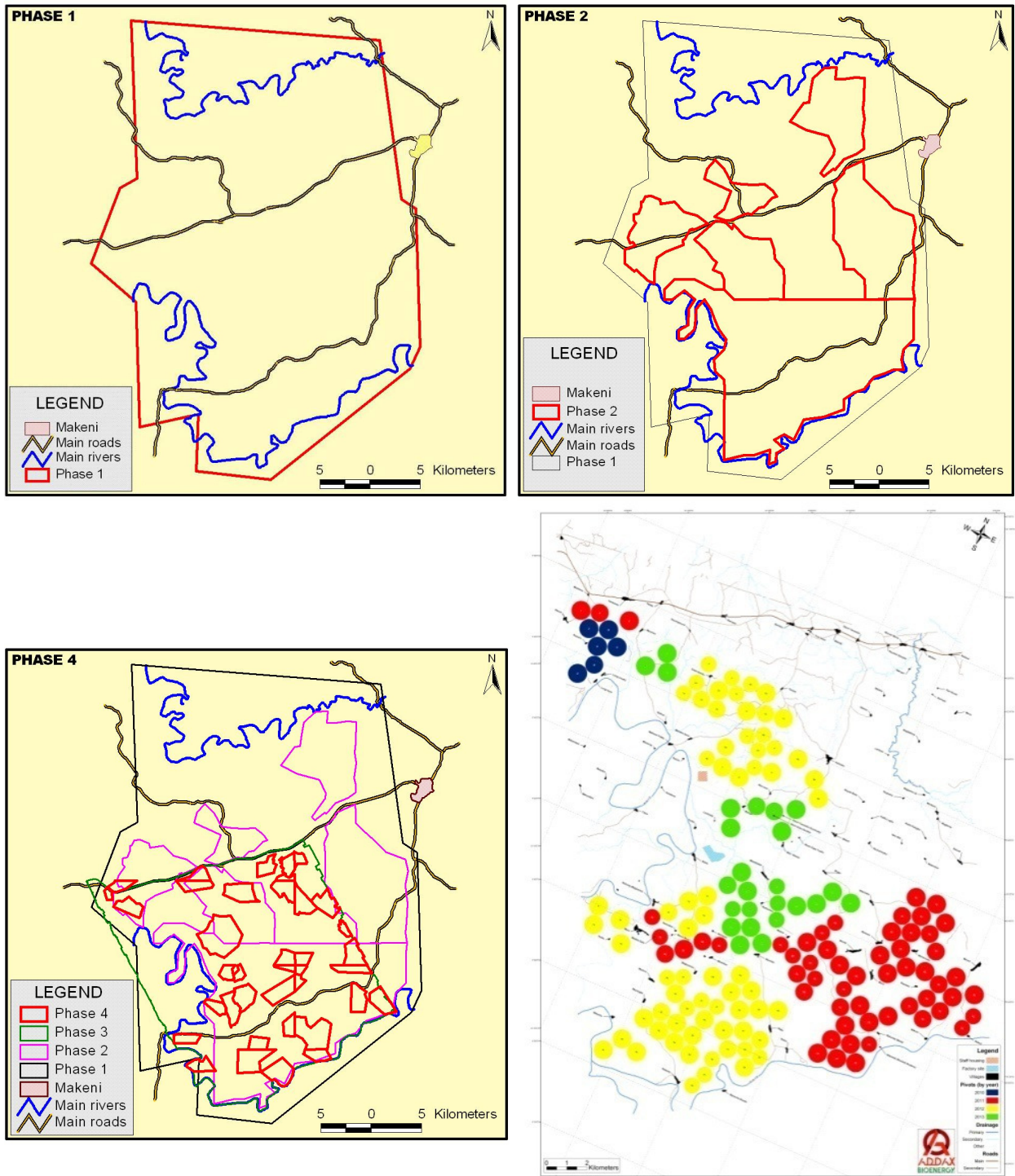
4.3 Addax Energy (Sierra Leone)

From an initial ESIA and feasibility study process area of 96,000ha, Addax wants to lease 10,500ha for its biofuel estate and facilities (see *Figure 3*), significantly reducing potential economic and physical displacement (resettlement) impacts. Initial ESIA estimates found that the lease could directly affect¹² 13,617 people (1,375 households), but due to the venture redesign, only 77 people in two small hamlets¹³ may need to relocate. All other residents will only lose individual arable land and communal land.

¹² Estimates based on informed design, generated through analysis — and counts — on orthophotos of all structures in all villages, cross-checked against villages in which total population was known from a ground-truthing and census exercise.

¹³ Hamlets are accommodation used seasonally in the cultivation season.

Figure 3: Reduction of Addax chosen areas for estate and facility development (2:1:1 map)



Issues around the lease and rental payments are discussed in *section 5*. As rental payments are only for land owning households (not non-land owning households currently renting land from land owners annually), and do not provide incomes equivalent to the value of current livelihood activities, Addax proposes to lease an extra 1,947ha to produce food as part of its Social and Environmental Management Programme. Once village authorities have identified suitable land for each village, it will be leased and portions allocated to each affected household. Addax will then plough and prepare the land for planting. Addax aims to ensure that the farmer development programme facilitates production of at least 100kg of rice per person (1,362 tons of rice for all affected people) on the extra 1,947ha. Addax also plans to initiate a United Nations Food and Agriculture Organisation 'Farmer Field and Life Schools' project with dedicated staff and equipment, which will enable local farmers to improve food crop productivity through training, mechanisation, improved seed stock, marketing and other services.

As in the Grown Energy case, to address the resettlement impacts, the ESIA recommended Addax develop a comprehensive Resettlement Action Plan in accordance with the Resettlement Policy Framework (RPF) (complying with IFC Performance Standard 5) if/when the project is authorised.

5. Discussion

5.1 Land deals: Who benefits and who loses?

In the two Mozambican case studies, affected communities were consulted and agreed to make some land available to the biofuel investors. Thereafter, the central state will demarcate and lease the land to the developer. In this process, communities forfeit their land rights and do not receive any lease payments, although they are supposed to be compensated for some of their physical losses. However, the process of demarcating the land and allocating rights awaits the outcome of the ESIA processes.

In Sierra Leone however, reforming land tenure legislation to improve security of tenure for customary rights holders is still underway, and no process of formalising customary tenure rights has been legislated. Despite this lack of reform, the legal situation and land administration practices have enabled land rights holders affected by the Addax venture to retain their communal rights to the land and receive rent payments. These legal provisions and the ESIA process — which realised the symbolic nature of the rent — has also allowed locals to secure additional benefits and compensation payments from Addax. However, land rights are only strong for the 'land owning' clans and lineage groups. The rights of non-clan members is much weaker, and although such persons can become fully integrated into a clan via marriage and long term residence, most new non-clan residents lease land from 'owners' on an annual basis.

Through extended negotiations with the landowners and their legal representatives¹⁴, Addax agreed to rent the land for £5.57/ha and £58,488/annum. As required by land laws, 20% of this will accrue to the District Council (£11,698), 20% to the Chiefdom Administrator, 10% to National Government (£5,849), and 50% to the Landowners (£29,244). As an additional mitigation strategy, Addax and the landowners will sign an Acknowledgment Agreement and pay an additional £2.17 per hectare per annum directly to landowners. Thus, landowners will receive £4.94/ha/annum for the actual land that Addax will lease. If a land owning household owns 8ha and only cultivates 1.2ha in any year, they could theoretically lease out 6.8 ha of land to Addax and earn rental income of £33.61/annum¹⁵. However, most households are likely to rent out much less land. This rental payment is very low — less than half the estimated average annual incomes derived from rice and vegetable crops in the wet lowlands and similar to the estimated annual value of crops produced on dry rain fed lands cultivated by local households¹⁶. As Addax's estate design process avoids using wet lowlands that most residents rely on for most crop production, these rental incomes

¹⁴ Addax paid for the legal representation for the affected landowners.

¹⁵ Assuming they abandon traditional shifting or rotational cultivation and shift to annual cultivation of permanent arable plots.

¹⁶ Average annual income/household: rice=£76.98, vegetables=£88.25, cassava=£51.95, groundnuts=£32.55, maize=£55.70, millet=£29.42.

should sufficiently compensate them for loss of livelihoods on dry lands. Addax also intend to compensate the small number of livestock farmers through rental payments, and through the lease agreement will also compensate for the loss of natural resources at a rate of £7.51/ha/annum. Impacts on natural resource use have also been minimised by Addax avoiding forest areas that are the main source of these resources. Local residents have, and will continue to be given the opportunity to harvest any natural resources they need from the leased land before Addax proceeds to cultivate the biofuel feedstocks.

5.2 Consultation around land deals

Legal frameworks and leasing arrangements impacted on the degree to which local affected households and authorities were consulted around the land deals. In the Addax venture case the consultation process over land leases was lengthy and in-depth. Consultations took place before and during the ESIA process and will continue during the resettlement and livelihood restitution planning. In contrast, initial land deals consultations with communities in Mozambican were much less extensive and information from key informants indicated that land consultations involved meetings with the local Chiefs and District Authorities, followed by a large public meeting/ceremony with the affected communities.

In both Mozambican ventures developers approached the authorities and communities on two occasions to get support for leasing two separate pieces of land prior to initiating the ESIA: one smaller plot of a few hectares where the initial headquarters were to be set up, and then the much larger portion of land for the whole development. Area boundaries were discussed in the meetings, but as there are no detailed locality maps, local authorities lack familiarity with maps, and there are no boundary fences or other significant landmarks, the ESIA consultation found that there was considerable uncertainty from the community/authority side about the exact location and extent of the land to be leased. However, as the developers used the feasibility studies and the ESIA processes to help design their venture, the exact location and boundaries of the land they want to lease have now changed. These changes will need to be explained to the affected communities and negotiated in the final stages of the ESIA. The demarcation and leasing process for both ventures can only be resolved once the ESIA is completed and approved.

So effectively, the Mozambican processes involved initial consultations between the developers, authorities and local residents which provided an 'in principle' agreement, followed by an ESIA process that informed the selection of the final estate area, after which additional consultations and administrative processes are expected to take place around the land lease. Subsequent consultations may however, only be informative rather than real negotiations as the land rights holders will not sign the lease agreement and the community has already agreed in principle. Raised expectations about economic benefits associated with the venture are also likely to inhibit affected parties from questioning or changing the land deal, so their only significant opportunity to voice their concerns was the ESIA stakeholder engagement processes. However, if a RPF that meets World Bank resettlement guidelines is developed as part of the ESIA, additional opportunities for community consultation and negotiation will exist while planning and implementing resettlement processes.

5.3 Consultation around the ESIA

CES's stakeholder engagement processes associated with the three ESIA involved two rounds of formal consultation during the initial scoping process¹⁷, then a final round at the end of the ESIA to present the draft reports and get stakeholder feedback. The SIA in each ESIA also involved several interviews with local authorities, focus groups and potentially affected households, which provided more opportunities for stakeholder engagement. However, despite significant efforts to engage affected residents and stakeholders, local consultation processes had limitations, as follows:

¹⁷ The initial round of consultations focuses on informing people about the proposed development and the ESIA processes and eliciting their concerns. The second round presents findings of the scoping report and recommendations about what issues and potential impacts should be assessed in the ESIA process.

- Large public meetings were limited to oral presentations, supplemented with maps and posters, followed by discussions
- Making visual presentations was extremely difficult¹⁸
- Due to language barriers, ESIA content had to be translated into the local languages
- Traditional meeting formats and practices imposed time and format constraints
- Local authorities were given copies of the reports, but usually these were in English or Portuguese.
- Relying on local leaders to help inform local stakeholders about meetings and arrange such meetings sometimes resulted in poorly attended meetings (in Mozambique but not Sierra Leone).

Due to these constraints, CES provide summarised and brief oral information and it was not possible to provide affected residents with the necessary detailed information for them to fully comprehend all aspects of the venture or interrogate potential impacts. Discussions were also limited because only a few people had an opportunity to speak during the large meetings; while women and young men did occasionally contribute to these discussions, most of the speakers were older men. The more vocal residents at these meetings predominantly expressed their joy about the arrival of such a commercial development in their area, since they believed they could benefit from jobs and other income earning opportunities. Residents invariably also made a plea for help to access water and other social services (roads, electricity, schools and health care). Local residents only occasionally expressed concerns about resettlement and land loss, but usually only when ESIA consultants told them of the potential impacts.

The extent to which affected people in Sierra Leone raised issues of concern was more significant. Land rights, lease agreements and potential food security impacts were raised repeatedly throughout the ESIA process and from a variety of local, provincial and national stakeholders. Government officials were also generally well informed about local conditions and issues, although concerns about other social and environmental impacts (such as pollution or access to water) tended to be raised by outsiders such as journalists or non-governmental organisation (NGO) workers. However, in response, other participants reiterated their support for the development and the benefits it would bring. The behaviour and nature of participants' responses indicated a fear that if they created too many problems for investors, the development would not be initiated in their area.

In the Addax case, there was much more stakeholder engagement and participation by local residents than normally occurs on ESIA's in rural African contexts, probably due to investors having to engage directly with land rights holders to negotiate lease agreements. This forced discussions around land and displacement to be initiated much earlier and in more detail. It also resulted in some committees being set up to resolve particular issues and a company–community relations office and grievance mechanisms were established.

In Mozambique, the quality of stakeholder participation in the ESIA process was lower than in Sierra Leone. Meetings were more difficult to arrange, more poorly attended, and local stakeholders raised far fewer issues and concerns. Local residents seldom recognised concerns about land losses and impacts on food security, although government officials often mentioned food security as a concern. In common with Sierra Leone however, local Mozambican supporters tended to reiterate their support for the venture in response to any concerns raised by other residents or the ESIA consultants. Central/regional government officials consulted as part of these two Mozambican ESIA processes in general had little in-depth knowledge of local conditions; as educated urban residents, many were not aware of, or did not express concern about potential social problems (other than food security) such as displacement, social conflict, increasing inequalities and poverty.

¹⁸ Due to high levels of illiteracy, a lack of familiarity with maps, and the lack of indoor venues and electricity.

5.4 Mitigating for displacement and resettlement

The three case studies demonstrate how the scattered and extensive nature of existing rural settlements and land uses in African countries make it almost impossible for commercial developers to acquire land that is completely 'unoccupied' and 'un-utilised'. However, based on the ESIA process developers identified areas which minimise the impact on land and habitation. In all three cases, the developers had to narrow down and/or change the location of their estate to minimise displacement impacts.

In all three ventures, several local households will need to be relocated to make way for the development, and a significant number of people will be affected by loss of arable land, communal land and natural resources critical to local livelihoods. Similar impacts have been highlighted in many other commercial biofuel ventures in African countries (Aarts 2009; Habib-Mintz 2010; LARRI and OXFAM 2008; Nhantumbo&Salomão 2010; German *et al* 2010; Tamrat 2010). The degree of displacement and livelihood restitution required depends on the legal/administrative and socio-ecological context of the venture.

In the two CES ESIA's being completed (Addax and Grown Energy), it was necessary to develop a RPF to provide guidelines for developers, authorities and affected parties for the process of developing and implementing a RAP. In each case, the World Bank (2002) and the IFC's (2006) resettlement best practices guidelines and performance standards informed the RPF, which requires the planning and decision-making process on resettlement to effectively involve directly affected households and local/district authorities. The guidelines also require that affected households be adequately compensated for any asset and livelihood losses. The process of determining appropriate livelihood restitution packages will require considerable effort/investment and is likely to be fraught with difficulties, particularly since each and every affected household needs to be identified and the impacts on them quantified. This becomes particularly difficult when local households are polygamous or use many small parcels of land in different ecological niches and at varying distances from the homestead. So, developing a RAP requires a census of affected households and detailed negotiations around compensation and livelihood restitution.

The most difficult aspect of determining livelihood restitution is valuing market and non-market uses of seasonal communal natural resources and the opportunity costs of the land and resources (Heckett&Aklilu 2008; Sulle&Nelson 2009; Schut *et al* 2010; German *et al* 2010). Attempts to calculate the use value of natural resources in communal areas in South Africa, where most farming is for household consumption only, has shown that such communal natural resources often have a far higher value than subsistence cultivation or livestock farming (Shackleton *et al* 1999, 2002, 2001, 2007). They also found that the value of these resources was much higher for poor households than for relatively wealthy rural households, as many poor households, and especially women, also collect and sell these resources to generate cash incomes. The World Bank (2008) estimated that informal and non-industrial uses of forests in Tanzania add £22–31 per capita to annual income. Forests provide 75% of all building materials, 95% of all household energy supplies and 100% of traditional medicines in Tanzania; these values are poorly documented and not fully appreciated by non-residents. In most other biofuel case studies in Africa, compensation for communal resources has not been included in the livelihood restitution packages (Sulle&Nelson 2009; Habib-Mintz 2010; German *et al* 2010; Tamrat 2010). Hence, there is an urgent need to develop guidelines on how to calculate appropriate livelihood restitution for displacement, particularly for communal resources, since the poorest and most vulnerable groups depend more heavily on communal resources for their livelihoods and these resources are more difficult to value and compensate for.

The Addax case study also makes clear that care needs to be taken that poorer and landless households are adequately compensated. In this case the land laws and practices allow land-owners to be compensated through rental payments, but this will also potentially displace landless households who are renting land on an annual basis. Additional measures, like those adopted by Addax, are needed to ensure that such households can still produce or access food, jobs and other income-earning opportunities.

Despite all these mitigation measures, the redistribution of land to large commercial developments will result in less land and natural resources being available to local residents, which will make it more difficult for people to access sufficient natural resources and reduce their ability to engage in traditional shifting

cultivation practices. Higher population pressures and increased consumption (fuelled by new cash incomes) could also lead to more rapid degradation. Introducing new employment opportunities may also encourage some people to abandon or reduce their farming activities, so such commercial developments could change local land use practices. To avoid detrimental outcomes, it will be important to encourage intensified land use and adoption of more sustainable practices. The three developers examined in this paper say that they will facilitate such changes by providing farmer support services, but this does not guarantee that such changes will be made and they cannot be forced. There will probably be some urbanisation and some intensification of land use by those well-positioned to take advantage of these new opportunities, and movement to more remote areas by poorer people

Another issue of concern linked to compensation is political influences on distribution of compensation payments. Lease payments in most African countries, including Mozambique, get paid to the national government and not locally affected households (Tamrat 2010; German *et al* 2010; Sulle&Nelson 2009; Schutt *et al* 2010). In other countries, such as Sierra Leone, land legislation requires that the lease payment or compensation payments are shared between various national, regional, district and local authorities (German *et al* 2010), reducing rental income available to affected households and communities. However, in most African countries affected communities have no opportunity to access rental payments from developers; instead they receive a once-off compensation payment that is usually far less than the annual value of the existing livelihoods derived from this land (Sulle&Nelson 2009; Tamrat 2010). However, even in these situations, in some cases authorities have siphoned off compensation payments for themselves. The land deal associated with the Bioshape company in Kilwa District, Tanzania is a classic example: district authorities ignored legal procedures and the rights and interests of local households who were to be resettled; they appropriated 60% of the compensation payments for themselves (ostensibly to finance infrastructure development elsewhere in the district) instead of paying resettled households (Sulle&Nelson 2009). In other cases, chiefs make informal land deals with developers to monopolise financial and in-kind benefits for themselves, rather than go through formal land allocation processes that give local residents and the central state most of the financial benefits (German *et al* 2010).

6. Conclusion

The three case studies highlight the difficulties of avoiding displacement when trying to accommodate large-scale commercial developments in rural communal areas in Africa. Although developers initially aspired to avoid significant social displacement for local communities, the practicalities of avoiding other significant environmental impacts and cost-effectively developing the estate and associated facilities often made displacement unavoidable. The Grown Energy and Addax cases show that even when population densities are low and concentrated in villages, some households are still likely to need to be resettled and many more will need livelihood restitution. Even if no cultivation is taking place in proposed development areas, most rural households — particularly the poorest and most vulnerable — will depend on communal grazing and forestland for natural resource-based livelihood activities.

So, if it is not possible to avoid displacement impacts, can they be effectively mitigated? The Grown Energy and Addax cases show that the ESIA processes were able to inform and modify the design of the ventures to minimise displacement impacts. Complying with environmental and social standards for the industry remained difficult however — particularly when developments were proposed in more densely settled areas adjacent to land of high conservation value. Additional mitigation measures, like adopting outgrower schemes and leasing land for food production and affected households, can mitigate potential food security and other livelihood restitution impacts. However, while the Addax and Grown Energy ventures were able to find ways to reconstitute cultivation-based livelihoods, replacing natural resource and communal grazing-based livelihoods is still difficult to address. The problem may not be critical when population density is low and natural resources are abundant, but is more serious in more densely populated areas, so it is unclear if the new direct and indirect cash-based livelihood options associated with such developments will be able to compensate for the loss of communal natural resources.

The case studies highlight the influential role financial institutions, international markets and ESIA standards can play in mitigating negative social impacts of large scale land acquisitions and commercial biofuel developments in Africa. While these institutions and the standards they set do not prevent biofuel development from taking place, applying them often created considerable problems and limitations for the biofuel developers, and in all three cases resulted in significant modifications to the venture design. However, such pressure can only be applied when developers are relying on loan capital from a bank (that is concerned about its reputational risk) or when the developers want to access regulated biofuel markets (i.e. the EU market). The opportunity to impose strict standards on biofuel developments arises due to current policy-induced biofuel markets¹⁹. However, it is possible that many unregulated markets could develop in future once fossil oils become more scarce and costly and before viable alternative forms of energy for transport are developed.

The case studies also highlighted the influence of land tenure systems on the land deals, the consultation processes and the livelihood restitution packages. The Sierra Leone case underlines the relative benefits of lease agreements and payments being made with and to the land rights holders. This leaves land ownership in community hands and can ensure that land rights holders receive annual rent payments. Although the proposed rental payments in the Addax case were not sufficient to compensate for lost cultivation livelihoods, they were significantly better than the once-off compensation payments some biofuel companies paid to communal land rights holders in other African countries (Sulle&Nelson 2009; Habib-Mintz 2010; German *et al* 2010, Tamrat 2010). It should also be noted that in this case, additional measures were needed to ensure that existing landless tenants were not displaced without livelihood restitution. These land tenure rights also ensured that the developers had to negotiate directly with the land rights holders, so an extensive and ongoing consultation process was undertaken and relatively good livelihood restitution packages were negotiated.

In the Mozambican cases on the other hand, lease payments would be made to national government and the affected communities would lose their rights to use this land. While the mitigation measures proposed by Grown Energy are likely to provide adequate restitution for resettlement and cultivation based livelihoods, compensation for the loss of common grazing and forest land will remain a problem. The land tenure and administration process ensures that the developers negotiate mainly with the central government. While the directly affected communities were consulted and gave their support, they are unlikely to be deeply involved in negotiation processes and will not receive any annual lease payments.

The stakeholder engagement problems associated with land deals and ESIA's are not specific to only these three cases; according to the United Nations Economic Commission for Africa's (UNECA's) review of ESIA governance institutions and policies in Africa, while there has been significant progress with developing ESIA assessment capacity, effective implementation is constrained by inadequate human and financial resources. UNECA found that consultations with stakeholders were generally inadequate and the influence of the ESIA on project decision-making was weak, particularly where projects are of strategic importance to the government (UNECA 2005, Marara *et al* 2010). While the three ESIA case studies demonstrate what can potentially be done to overcome these limitations, many other biofuel cases in Africa demonstrate that biofuel ventures are often approved and able to access land without undertaking ESIA processes (Tamrat 2010). In many cases considerable displacement impacts occurred and very little — if any — livelihood restitution or compensation was made to affected households and communities (Aarts 2009; Habib-Mintz 2010; Heckett&Aklilu 2008; LARRI and OXFAM 2008; German *et al* 2010; Schut *et al* 2010; Sulle&Nelson 2009). The weakness of ESIA practice in Africa, particularly regarding stakeholder engagement processes and social assessments, also means that applying ESIA processes does not guarantee that social impacts will be effectively minimised and mitigated. To improve the effectiveness of ESIA processes, there is a need to improve the application of the laws, strengthen the guidelines for ESIA's and the capacity to undertake independent ESIA's, and to monitor compliance and stakeholder engagement processes.

¹⁹ These markets were created by EU and other developed country policies, which have set blending targets for biofuels and imposed criteria for production of such biofuel.

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LDPI Working Paper Series

A convergence of factors has been driving a revaluation of land by powerful economic and political actors. This is occurring across the world, but especially in the global South. As a result, we see unfolding worldwide a dramatic rise in the extent of cross-border, transnational corporation-driven and, in some cases, foreign government-driven, large-scale land deals. The phrase 'global land grab' has become a catch-all phrase to describe this explosion of (trans)national commercial land transactions revolving around the production and sale of food and biofuels, conservation and mining activities.

The Land Deal Politics Initiative launched in 2010 as an 'engaged research' initiative, taking the side of the rural poor, but based on solid evidence and detailed, field-based research. The LDPI promotes in-depth and systematic enquiry to inform deeper, meaningful and productive debates about the global trends and local manifestations. The LDPI aims for a broad framework encompassing the political economy, political ecology and political sociology of land deals centred on food, biofuels, minerals and conservation. Working within the broad analytical lenses of these three fields, the LDPI uses as a general framework the four key questions in agrarian political economy: (i) who owns what? (ii) who does what? (iii) who gets what? and (iv) what do they do with the surplus wealth created? Two additional key questions highlight political dynamics between groups and social classes: 'what do they do to each other?', and 'how do changes in politics get shaped by dynamic ecologies, and vice versa?' The LDPI network explores a range of big picture questions through detailed in-depth case studies in several sites globally, focusing on the politics of land deals.

Commercial Biofuel Land Deals & Environment and Social Impact Assessments in Africa

This paper examines the social displacement impacts of three proposed biofuel developments in Mozambique and Sierra Leone and the extent to which developers can avoid or minimise such impacts. The case studies show that where population densities are low and settlements are concentrated in villages where it is easier to minimise displacement impacts, livelihood displacement impacts still cannot be entirely avoided due to communal and scattered land use in most rural areas. ESIA processes have changed the location, size and boundaries of developments to reduce displacement impacts, but more mitigation measures — such as outgrower schemes and land dedicated to food production — can provide further livelihood restitution and avoid food security impacts. The three ventures also highlight the influence of tenure security for local land rights holders in determining the nature of land deals and the consultation processes: land leases made with central government seem to offer fewer incentives for developers to negotiate directly with local communities and provide them with fitting compensation.

