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Agricultural investment and rural transformation: a case study of the Makeni bioenergy project in Sierra Leone

Matthew Fielding, Marion Davis, Nina Weitz, Ival Cummings-John, Amanda Hickey, Francis X. Johnson, Jacqueline Senyagwa, Lidia Martinez, and Miaojie Sun

Stockholm Environment Institute
Linnégatan 87D, Box 24218
104 51 Stockholm
Sweden
Tel: +46 8 30 80 44
Web: www.sei-international.org

Director of Communications: Robert Watt
Layout/graphics: Richard Clay

Cover Photo: Equipment from Addax Bioenergy Sierra Leone's Farmer Development Services programme in one of the villages in the Makeni Project area.

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FOREWORD

Conditions on the ground can sometimes change faster than those in business or development can adapt. This report is based on field research conducted in 2013 and 2014, with follow-up research and analysis conducted in late 2014 and the first months of 2015. We shared a draft with Addax Bioenergy Sierra Leone, the developer of the project, for fact-checking, and we were completing revisions when the company issued this announcement:[1]

Over the next six months, AOG, as main shareholder, and Addax Bioenergy SA have decided to downscale their pioneering sugarcane bioethanol operation in Makeni, Sierra Leone, and to conduct a review of all options for the future.

Since its inception in 2008, this Greenfield project, run by AOG subsidiary Addax Bioenergy, has had to overcome a number of unforeseeable events. These have had a significant impact on the timeframe, costs and revenues initially planned. They include the Ebola outbreak in May 2014, which not only has had a terrible human toll on the country, but has also led to substantial delays as most of Addax Bioenergy's contractors declared "force majeure" and left the site. Taking advantage of the naturally-low level of activity during the rainy season when no revenues are earned, costs will be reduced and operations downscaled. The number of expatriate consultants will be reduced. At the same time, most local employees will be maintained and assets kept in good working order.

The review process will explore all options for the operation's future. AOG and Addax Bioenergy intend to work closely with H.E. President of Sierra Leone and his government to find the right way forward for the operation and for the country.

It is too early to know how this process will unfold, or to judge its implications for Sierra Leone and its strategy of promoting direct foreign investment as a key driver of development. Where relevant, we have made small updates to the report; we will also continue to monitor the situation, and follow up with additional research and analysis in the coming months.

EXECUTIVE SUMMARY

Bioenergy investment is on the rise in sub-Saharan Africa. Global production of liquid biofuels has more than quadrupled in the past decade, driven by renewable energy targets and biofuel blending requirements in the EU, the US and other markets. Although Africa's role in biofuels markets to date has been small – under 1% in 2014 – interest in sub-Saharan Africa as a supplier is growing rapidly. Many foreign companies have acquired large tracts of land for biofuel crop plantations. Sugarcane has drawn particular attention, as it is a commercially proven, tropical bioenergy crop with significant potential in much of the region.

Welcoming governments add to the appeal; foreign direct investment – a record 80 billion USD in 2014 – is crucial to African economies, and bioenergy is seen as a way to attract FDI, boost exports and drive rural development. From 2006 to 2011, bioethanol production in Africa nearly doubled, to 135 million litres – about 60% of it for export.

Agricultural-based bioenergy investments can bring large infusions of capital, infrastructure and technology into rural areas. In most of rural Africa, small-scale farming still predominates, and these projects are often the communities' first encounter with large-scale agro-industry. The projects can thus bring rapid changes, including new jobs, economic growth and development, but also increased pressure on natural resources that are crucial to local livelihoods, particularly land and water.

This study examines the Makeni Project, developed by Addax Bioenergy Sierra Leone (ABSL), as a window into the complex dynamics of bioenergy and agricultural investment in sub-Saharan Africa. ABSL has said it wants the Makeni Project to be "a benchmark for sustainable investment in Africa", and it has secured funding from six development finance institutions (DFIs). In 2013, the project was the first in Africa to be certified by the Roundtable on Sustainable Biomaterials.

This report places the Makeni Project in the context of Sierra Leone's development challenges and strategies to address them. It is based on in-depth field research in communities within and outside the project area, as well as interviews with ABSL staff, policy-makers, development agencies and experts, and a review of key documents. We look at the project through the lens of "rural transformation" – the notion that eradicating poverty and achieving sustainable development requires a transformation of rural spaces, economies and societies that empowers rural people.

The Makeni Project and Sierra Leone's development strategies

Sierra Leone has most recently been devastated by the Ebola outbreak, but hardship is nothing new to the country. The civil war of 1991–2002 cost some 70,000 lives, destroyed property and infrastructure, internally displaced about half the population, and drove away many skilled professionals. Sierra Leone has recovered significantly since then, but it remains very much a Least Developed Country (LDC), with more than half its people living on less than 1.25 USD per day (PPP) in 2010. Governance is another key challenge; although several democratic elections have been held, corruption is endemic, and the public sector is plagued by low wages, poor infrastructure and low-capacity personnel.

Yet Sierra Leone is rich in natural resources, which it is using to "kick-start" economic growth. The mining sector is rapidly expanding and is expected to contribute 30% to GDP in 2017, but it provides less than 3% of formal employment. Agriculture, meanwhile, employs about 70% of the labour force and accounted for about 42% of GDP in 2013, but productivity is very low. Sierra Leone has made it a priority to foster rural development by supporting the commercialization of small-scale farming and, at the same time, working to attract large-scale foreign investments.

The 400 million EUR Makeni Project is the largest agricultural investment ever made in Sierra Leone. ABSL has developed a roughly 10,000 ha sugarcane estate, plus a distillery expected to produce about 85,000 m^3 of ethanol per year for export to the EU. The plant will also produce electricity, including 15 MW to be fed into the national grid. Construction of the distillery and power plant was completed in 2014, and full production capacity is expected to be reached in 2017.

ABSL has signed 50-year leases on the land for the estate with the chiefdoms and the landowners, agreeing to pay 8.90 USD per ha per year, with half going to the landowners and the remainder to the District Council, the chiefdom and the national

The FDP field outside Madora, prepared for cultivation by ABSL

government. Landowners who agree to sign direct agreements with ABSL get another 3.46 USD per ha. In addition, ABSL compensated the communities affected by the project for any loss of livelihoods and assets, at replacement costs.

ABSL developed a comprehensive social and environmental management programme as well. Its centrepiece is the Farmer Development Programme, which involves setting up a community field for each village that leased land to the company, to produce enough rice for the entire community. ABSL ploughs and prepares the fields and provides inputs, and the communities maintain the fields and harvest the rice. In 2013, ABSL also started a pilot vegetable garden programme under the FDP.

As part of the FDP, about 2,000 people have also gone through the Farmer Field and Life Schools, a 30-week programme that teaches better farming practices as well as health, nutrition, sanitation, money management and other "life skills". In 2013, ABSL added the Farmer Development Services (FDS), providing low-cost ploughing and other services. In addition, ABSL has a plan to directly support community development through several initiatives, and it has provided bicycles, health centres and hand-washing stations, and built some wells and boreholes in communities.

The Makeni Project has also become a major employer, with 3,455 workers as of December 2014, 46% of them in permanent positions (the rest are short-term or seasonal). Despite high interest among local residents, however, a lack of necessary job skills has inhibited local hiring. ABSL's original plans also included a support scheme for outgrowers – local farmers who would produce sugarcane on their own fields and sell it to ABSL – but logistical challenges have kept ABSL from moving forward.

Field research findings

Loosely following the "sustainable livelihoods" approach, we examined the different types of capital that underpin rural households' livelihoods – natural resources, skills, social capital, infrastructure, financial resources – and how the Makeni Project is affecting them. We focused on a sample of six villages in the project area, and three outside it. In each village, we surveyed all households: 327 in total in November 2013, and 331 in April 2014. We also applied several rapid rural appraisal techniques, including community resource maps, seasonal calendars, impact diagrams and focus groups. A planned third round of field research, in September 2014, was cancelled due to the Ebola outbreak.

We found high levels of poverty, with a 62% likelihood of households living on less than 0.50 USD/day, 90% relying at least in part on rainfed subsistence agriculture for their livelihoods. Almost all reported food shortages in August, and many also faced shortages in June, September, and sometimes other months. Water access issues are widespread, particularly in the dry season, and water quality is a major concern.

Infrastructure in the area is very poor. The lack of roads makes it difficult to take goods to market, travel to work, or access supplies and services. Energy infrastructure is nearly non-existent, and 99% of households said they cook mostly with firewood. Although 78% of households with children aged 6–13 said they were attending school, many said they struggle to cover the school fees. Government

resources are concentrated in Freetown, with very limited capacity – or visibility – at the local level.

We identified four key change processes occurring in the project area:

Changes in access to and use of natural resources: By leasing land in these communities, ABSL has directly affected the availability and use of land and other natural resources in the project area. To the extent that the land leased was actively under cultivation, farmers have had to find new places to grow their crops, and prepare their fields. The FDP has introduced high-productivity rice cultivation, and the vegetable gardens have helped diversify diets and provided new crops to sell. Some farmers expressed concern about their ability to sustain these benefits after "graduating" from the FDP; it is unclear how well the FDS will fill the gap. Concerns were also raised about the loss of fruit trees and other perennial plantings, and about reduced access to fuelwood.

Changes in infrastructure: ABSL has developed a significant amount of infrastructure, including not only the plant, pivots and supporting infrastructure, but also roads – an estimated 440 km as of June 2014 – though not all villages are connected to them. Many new houses have been built (79 in the project villages between October 2013 and April 2014, a 37% increase), and existing homes are being upgraded as well. New small commercial buildings and restaurants are also being added.

New income sources and transition to wage labour: For many people, ABSL offered the first opportunity to engage in formal wage labour, and 38% of households in the project villages had at least one member receiving some income from employment with ABSL. Wage labour can pose challenges for subsistence farmers, however, as the jobs for which they qualify are likely to be seasonal and may coincide with the rice planting and harvesting seasons. Notably, almost all the jobs are going to men, likely for cultural reasons; as of December 2014, women's share of ABSL employment was 10%.

Demographic changes: There has been an influx of migrants seeking employment with ABSL, in both the project and control villages. The newcomers have different needs, and along with households renting out rooms, restaurants and shops are opening up to cater to this market. However, some community members noted increased competition for food and water, as well as price inflation.

Charcoal (in bags) and mangoes for sale in Mayemberai, a village outside the Makeni Project area.

Increasing development benefits from agro-industrial FDI

The government of Sierra Leone, development finance institutions, and rural communities went into the Makeni Project with very high expectations. But our research suggests that while the project has brought benefits to the region, the potential for rural transformation has not yet been fully realized. For example, although the FDP has succeeded at producing large quantities of rice to offset any crop losses due to the land concessions, local buy-in has varied significantly, and it is uncertain how well these farmers will do after they "graduate" from the FDP.

Another risk that needs to be addressed is that labour scarcity during the growing season will contribute to food insecurity. Given the demographic changes in the region, it is crucial to ensure that there is adequate labour and organization to produce enough food to meet increasing demand. Moreover, if inflation and lack of access to markets reduce workers' buying and selling power, their families could end up poorer than before. The impact of ABSL employment appears to be large enough to warrant active engagement by the public sector and civil society to help the communities to adjust.

Sugarcane in bloom along the side of a road built by ABSL.

There is also a need to narrow the gap between ABSL's labour needs and the skills and capacities available in local communities. This requires collaboration between the public sector, development partners and NGOs to assess the range of capacities that ABSL expects its workers to have, and to set up structures to build those capacities. ABSL's plan to develop an outgrower scheme, currently on hold, could also make a significant difference for local livelihoods.

More broadly, the Makeni Project highlights the challenges of relying on FDI as a means to advancing development goals, especially in countries with limited resources and substantial needs, such as Sierra Leone. Foreign investors can make a real impact, but they cannot replace the public sector. In fact, without an enabling policy environment and supporting public-sector investments, the transformative potential of private-sector investments will be diminished.

Roads are a good example of this problem. They are a public good, normally built and maintained by the government. ABSL has built roads to support its own operations, and in the process provided vital infrastructure for local communities, but the government has done nothing to fill any gaps – even where building as little as 50 metres of road could transform a village's prospects by linking to an ABSL-built road.

It is possible that Sierra Leone's public institutions do not yet have the capacity to keep up with the rapid pace of ABSL's activities, in which case development partners and NGOs should step in to help. Another, more worrisome possibility is that ABSL's presence has actually led government agencies – and even NGOs – to curtail their own activities in the area, on the assumption that ABSL will now cover local needs. If this is the case, corrective action is needed. Policy-makers may also want to take precautions to ensure this does not happen around other foreign investments.

Finally, the Makeni Project's potential to expand modern energy access in the region should be carefully explored. Options might include building a mini-grid to connect local communities to the ABSL power plant, and selling some of the ethanol locally, to fuel new, clean cookstoves. It is also worth considering whether there is a viable domestic market in Sierra Leone for ethanol for transport, to reduce dependency on imported oil products.

Conclusion

Sierra Leone has worked to attract FDI as a key development strategy, and has highlighted bioenergy as a priority sector for its potential to advance rural development. Yet one of the most important lessons from bioenergy projects around the world is that good governance is crucial to achieving sustainable development benefits, and to ensuring that the rural poor share in those benefits and are not harmed. Our research suggests that Sierra Leone's institutions are not yet up to that task. Strengthening governance needs to be a priority, with particular attention to regulatory structures, technical know-how, and effective coordination among key agencies.

The Sierra Leone government also lacks the capacity and resources to supplement ABSL's investments in the Makeni region and fill crucial gaps. By more actively engaging with ABSL, however – and with other project developers – it could start to identify opportunities that are now being missed, and seek support from international organizations, donors, development partners and/or NGOs to pursue them. The development finance institutions have a particularly important role to play in this regard.

In closing, we must stress that this report is a snapshot in time of a project that continues to evolve, in communities undergoing rapid change. We intend to continue our work with the Makeni Project, and want to return to Sierra Leone to discuss our findings with key stakeholders, in collaboration with ABSL, the government, and NGOs active in the region. We also hope to delve deeper into several themes raised by our research, from the viability of an outgrower scheme, to energy access issues, to the impact of the Ebola outbreak on the dynamics of FDI and rural transformation.