

WORKING PAPER 201

Agricultural investments in Mozambique

An analysis of investment trends,
business models and social and
environmental conduct

Filipe Di Matteo
George Christoffel Schoneveld



Working paper 201



© 2016 Center for International Forestry Research
All rights reserved

DOI: <http://dx.doi.org/10.17528/cifor/005958>

Di Matteo F and Schoneveld GC 2016. *Agricultural investments in Mozambique: An analysis of investment trends, business models, and social and environmental conduct*. Working Paper 201. Bogor, Indonesia: CIFOR.

CIFOR
Jl. CIFOR, Situ Gede
Bogor Barat 16115
Indonesia

T +62 (251) 8622-622
F +62 (251) 8622-100
E cifor@cgiar.org

cifor.org

We would like to thank all funding partners who supported this research through their contributions to the CGIAR Fund. For a full list of the 'CGIAR Fund' funding partners please see: <http://www.cgiar.org/who-we-are/cgiar-fund/fund-donors-2/>

Any views expressed in this publication are those of the authors. They do not necessarily represent the views of CIFOR, the editors, the authors' institutions, the financial sponsors or the reviewers.

Table of contents

Acknowledgments	iv
1. Introduction	1
2. Background	3
2.1. Evolution of agricultural policies in Mozambique	3
2.2. Popular depiction of agricultural investment trends	5
3. Methodology	8
3.1. Inventory of agricultural investments	8
3.2. Agricultural investment survey	9
3.3. Limitations	11
4. Agricultural investment patterns	12
4.1. Investment trends	12
4.2. Sectoral and geographic patterns	15
4.3. Land acquisition trends	19
5. Agricultural investment characteristics	25
5.1. Investment structure	25
5.2. Sectoral orientation	28
5.3. Value chain activities	30
5.4. Production practices	31
5.5. Sourcing practices	33
5.6. Target markets	36
6. Social and environmental conduct	39
6.1. Displacement	39
6.2. Host community social and economic development	42
6.3. Productive integration	45
6.4. Environment	49
6.5. Strategic integration of sustainability norms	51
7. Synthesis	54
7.1. Investment trends and characteristics	54
7.2. Social and environmental conduct	55
8. Conclusion	59
References	62
Annexes	67

List of figures, tables and boxes

Figures

1. Provinces and major land uses of Mozambique.	10
2. Investment status.	12
3. Changes in investment intensity, by year.	13
4. Investment intensity, by country of origin of lead investor.	14
6. Sectoral distribution by number and capital pledged.	16
7. Distribution of investment by district.	18
8. Active DUATs in Nampula in 2014, by sector.	21

9. Titling patterns in Zambezia 2002–13.	23
10. Titling patterns in Nampula 2002–13.	23
11. Origin of lead investor.	25
12. Mozambican representation.	26
13. Type of lead investor.	27
14. Primary funding mechanisms.	27
16. Types of commodities sourced and/or cultivated.	28
17. Number of crops per investor.	29
18. Type of end-markets targeted.	30
15. Types of value chain activities.	31
19. Input intensity.	32
20. Input provision and terms.	35
21. Major target market, by average output.	36
22. Export markets.	37
23. Type of ownership arrangements.	40
24. Local economic development activities undertaken by new DUAT titleholders.	43
25. Local economic development activities undertaken by other titleholders.	43
26. Infrastructure development activities undertaken by new DUAT titleholders.	44
27. Infrastructure development activities undertaken by other titleholders.	44
28. Average monthly wages by job category.	47
29. Types of secondary employment benefits for formal contracts.	48
30. Dominant <i>ex ante</i> land use.	49
31. Types of environmental management measures.	50

Tables

1. Distribution of investment by province.	17
2. DUATs requests and approvals, 2008–12.	20
3. DUAT requests and approvals for agricultural investors, by sector.	20
4. DUAT allocation trends for commercial agriculture in Nampula and Zambezia.	22
5. Financial performance.	28
6. Investor versus national yields for selected grains.	32
7. Types of sourcing mechanisms.	33
8. Land ownership.	39
9. Land acquisition activities undertaken, by land access category.	41
10. Priority criteria for site selection.	42
11. Employment generation.	45
12. Labor intensity, by focal commodity type.	47
13. Types of voluntary regulatory initiatives adopted.	52
A1. Government organizations interviewed and types of data collected.	67
A2. One-way ANOVA results.	68

Boxes

1. Agroecological Zoning in Mozambique	16
2. What does the Nampula and Zambezia suggest about the representativeness of national inventories?	24
3. Soy side-selling in Zambezia	34

Acknowledgments

Authors would like to extend their gratitude to Alda Salomão, Matilde Stromnaess, Samanta Remane and Lino Manuel from Centro Terra Viva (CTV) for their administrative support and for facilitating research activities. The research also greatly benefited from the intellectual contributions and extensive public sector experience of João Carrilho and Renato Martins. Further acknowledgment is due to the National Directorate of Land and Forests (DNTF) and Center for Investment Promotions (CPI) for granting authors access to national investment data and to the Provincial Directorates of Agriculture (PDA) and District Services of Economic Activities (SDAE) in Gaza, Manica, Nampula and Zambezia for their valuable insights and field research support. This research would not have been possible without the warm reception of the 69 investors that were willing to participate in our lengthy survey and the field research support provided by Sigrid Ekman.

This research was conducted with the financial support of the UKAID-funded KnowFOR (Forestry Knowledge) program and the CGIAR research program on Forests, Trees and Agroforestry (FTA).

1. Introduction

Since the food and energy price crises of 2007/2008, new commercial opportunities within global soft commodity markets have led to increased investment in agricultural production. This is evidenced by a rapid influx of agricultural foreign direct investment (FDI) particularly to sub-Saharan Africa and, especially, Mozambique where agro-ecologically suitable land is comparatively cheap and abundant (World Bank 2011; Anseeuw *et al.* 2012). Although increased investment in agriculture is critical to realizing long-term global and national food and energy security objectives (Schmidhuber *et al.* 2009), numerous critics have expressed concerns that the benefits of (particularly large-scale plantation monoculture) investments tend not to outweigh the costs. For example, in countries such as Mozambique, weak systems of governance often translate into inadequate capacity and/or political will to capture positive investment spillovers and protect (customary) land rights and high conservation value ecosystems (Deininger 2011; German *et al.* 2013; Schoneveld 2013). As has been well-documented by a large emerging body of literature, many investments in large-scale plantations cause displacement of socially significant land uses and environmental degradation, without making tangible contributions to rural development (German *et al.* 2013; Kaag and Zoomers 2014).

Because of these risks, it has increasingly been argued in recent years that host country governments should instead more actively promote alternative business models that are more inclusive of the rural poor and that generate shared-value (UNDP 2008; Wach 2012). Business models that source through contract farming schemes or are based on co-management, cooperative, or joint venture arrangements, for example, directly and productively incorporate smallholders into investor value chains (Vermeulen and Cotula 2010). In comparison to industrial plantations, such business models tend to make greater contributions towards resolving structural market failure that impede smallholder access to commodity markets, modern technologies and production inputs.

In light of rising public interest in the 'land grabbing' phenomenon, research on agricultural investments has, however, focused primarily on documenting trends and impacts related to plantation investments. Since other business models, in contrast, remain poorly documented, the wider emerging agricultural investment context is poorly understood. Rather, most studies tend to generalize about global agricultural investment patterns, without adequately unpacking inter- and intra-country diversities. Similarly, since most studies treat investors as research subjects rather than participants, the diversities with respect to their characteristics and practices remain underexplored. A lack of a balanced understanding on such issues impedes the development of more targeted and effective regulatory interventions and contributes to an overly simplistic depiction of recent agricultural investment trends. This is especially relevant to Mozambique, where case studies illustrating the negative social and environmental footprint of large plantation projects, notably related to biofuels, has strongly shaped public perception of agricultural investment.

By drawing on official government data, key informant interviews, and structured surveys conducted with 69 investors, this paper examines agricultural investment trends and characteristics and investor social and environmental conduct in Mozambique. In doing so, this paper offers a more nuanced understanding of recent agricultural investment trends and the factors that shape the adoption of responsible business practices. This will contribute to ongoing national debates on the development of agricultural policies and strategies that more explicitly seek to leverage private sector investments in support of inclusive green growth objectives.

The working paper is structured as follows: a background section will contextualize the analysis by examining the emerging agricultural policy discourse in Mozambique and how the burgeoning literature on agricultural investments tends to portray investment trends. It will proceed to summarize the study's methodological approach before analyzing national agricultural investment trends. The sections that follow will present results from the analysis of the investor surveys. This involves, firstly, a descriptive analysis of investor characteristics, value chain activities, production practices, and market orientation, before proceeding with an analysis of corporate social and environmental conduct. The paper concludes with a synthesis and a reflection on findings.

2. Background

2.1. Evolution of agricultural policies in Mozambique

Mozambique gained independence from Portugal in 1975. Between 1977 and 1992, civil war plagued the country as a result of violent opposition by the Mozambican National Resistance movement (RENAMO) to plans by the ruling Mozambican Liberation Front (FRELIMO) to establish a one-party socialist state. The effects of war, an economic policy favoring large-scale state-owned projects and the exodus of Portuguese nationals (and capital) when many of their assets were nationalized following independence quickly resulted in the collapse of the Mozambican economy. In 1983, a flailing economy and high dependency on external debt resulted in the government announcing its intention to default on its loans. This led in 1987 to the adoption of the Program for Economic Rehabilitation (PRE); an economic stabilization program negotiated with the International Monetary Fund and World Bank involving privatization, currency devaluation and deregulation.

Over the course of the 1990s, liberalization reforms and the signing of the Rome General Peace Accords in 1992, officially ending the civil war, resulted in an influx of foreign capital, especially into capital-intensive, typically mineral-based, mega-projects in, for example, aluminum, titanium and natural gas (Castel-Branco 2006; Hanlon and Smart 2008). Although these investments enabled Mozambique to realize some of the highest economic growth rates in Africa, this growth failed to translate effectively into poverty reduction, with extreme poverty even increasing over the latter half of the 2000s. In 2013, Mozambique ranked 178 out of 187 on the Human Development Index (UNDP 2014). This failure to capitalize on the poverty reduction potential of investment is attributable to the lack of social benefits trickling down from investments that are largely export oriented and generate few local productive linkages and employment opportunities (Castel-Branco 2010; Cunguara and Hanlon 2012).

Because of the austerity reforms, for a long period the Mozambican government was unable to adequately invest in poverty alleviation. Approximately 70% of the population living below the national poverty line resides in rural areas, where agriculture is the primary livelihood activity (IFAD 2014). The agricultural sector, while contributing only 24% to national GDP, employs an estimated 80% of Mozambique's economically active population, but suffers from chronically low productivity and poor market access (Chigara 2012). It is estimated that more than 99% of farming operations in Mozambique involve smallholders, with the average Mozambican farmer using only 1.8 ha of land (GoM 2011). Smallholders in Mozambique rely heavily on manual cultivation techniques and lack access to high quality agricultural inputs, especially when compared to those in neighboring countries. Since few alternative sources of income are available in rural areas, the rural poor have access to few buffers to cope with disasters and shocks, notably alternating floods and droughts that frequently affect large parts of the country. Over the course of 2000s, the Mozambican government increasingly began to acknowledge that to address rural poverty and national food insecurity the agricultural

sector needed to be modernized and intensified. Initially, the government sought to achieve this by attracting private sector investments under the assumption that this would increase smallholder access to agriculture technologies, inputs, offtake markets and alternative employment opportunities. To achieve this, the government, amongst others, established the Agricultural Promotion Center (CEPAGRI) in 2006, which was tasked to promote and facilitate the establishment of commercial agriculture investments. Soon after, with the onset of the commodity price crises in 2007, Mozambique experienced a rapid increase in agricultural FDI, due in part to its accommodating investment climate and availability of large areas of fertile farmland. Some estimates suggest that Mozambique has since become one of the largest investment destinations for industrial plantation projects in Africa (Anseeuw *et al.* 2012; Schoneveld 2014a).

Commercial agricultural is not new to Mozambique though. Under Portuguese colonial occupation, for example, large-scale export-oriented sugarcane, coconut and tea plantations were established. Many of these plantations were nationalized and converted into large-scale state farms when Mozambique gained independence (Mousseau and Mittal 2011). Most of these state farms, however, were quickly abandoned or fell into a state of neglect. This was attributable to insufficient management capacity, misuse of state economic assets for political ends and the effects of the civil war (Hanlon 1984). When many of these plantations were privatized in the 1990s, investments were made to rehabilitate them.

It was, however, not these investments, but the agricultural investments of the 2000s that were contentious. In contrast to the privatized estates, most new investments were greenfield developments that involved the acquisition and conversion of customary lands. This resulted in a number of high-profile investments being implicated in land grabbing and speculation. Parts of the Mozambican government consequently began to question whether the indiscriminate allocation of land titles and investment licenses to agricultural investors adequately served national poverty alleviation and agricultural modernization objectives. As a result, a moratorium on land title allocations larger than 1000 ha was introduced between the end of 2009 and October 2011 to enable the government to reevaluate its approach to private agricultural investment.

While a number of titles held by unproductive investors were revoked or reduced in extent during this period, no major formal restrictions on private agricultural investment were introduced. Nevertheless, a shift in agricultural development discourse during the early 2010s did become apparent. This is, for example, evident in the focus of the 10-year Strategic Plan for the Development of the Agricultural Sector (PEDSA) that was approved in 2011. Strategic priorities for PEDSA include enhancing smallholder productivity, market access, sustainable resource use and food security. Rather than relying on private sector investments to achieve these priorities, PEDSA departs from liberal policies that prevailed over the preceding two decades by paving the way for targeted state intervention. Agricultural research, extension services, input supply and modernization of priority value chains were identified as some of the intervention priorities.

In order to achieve these objectives, the Mozambican government has increasingly promoted the development of agricultural growth corridors. These are modeled after

the spatial development initiative approach that shaped the design of the successful Maputo Development Corridor, an economic corridor that links the north of South Africa to the port of Maputo. Relying on public–private partnerships in particular, such corridors aim to promote agglomeration economies and productive local linkages by providing enabling conditions for private sector investments in priority areas, business models and industries. This is typically achieved through integrated spatial and economic planning, infrastructure development and targeted support to priority investors. Major growth corridors under development in Mozambique include the Nacala Corridor and the Beira Agricultural Growth Corridor (BAGC). While many of the infrastructure projects in the Nacala Corridor are nearing completion, the more recently established BAGC program is reportedly ending due to conflicts amongst stakeholders about the ownership of program assets and the withdrawal of some major donors and the catalytic fund manager, AgDevCo, which provided patient capital and technical support to strategic investors.

Although agricultural investments since the moratorium are reportedly screened with greater scrutiny – for example, whether they align with PEDSA and/or corridor priorities – the mandate of CEPAGRI remains largely unchanged. This illustrates that a unified vision on agricultural investment is still absent, as deep divisions within FRELIMO remain on the topic. Many civil society organizations have also expressed concerns that the agricultural growth corridors are not consistent with the spirit of PEDSA, since they allegedly excessively accommodate the interests of foreign capital in spatial and economic planning and budget allocations. Nevertheless, since considerably fewer investments that involve land areas larger than 10,000 ha were approved over the 2010s than before the moratorium, a more cautious and nuanced approach to agricultural investments is though becoming apparent¹.

2.2. Popular depiction of agricultural investment trends

The recent rush for land in Africa has attracted the interests of a wide array of civil society organizations, donor agencies, multi-lateral organizations and scholars. Many have sought to capture its scale and geographic distribution, social, economic and environmental impacts, underlying drivers, governance processes and epistemological implications. Despite the diversity of topics covered, much of the recent literature tends to provide a rather homogenous depiction of agricultural investments.

For example, it is widely reported that renewed investor interest in developing country agriculture has been strongly driven by favorable long-term prospects within global bioenergy markets (see for example Friis *et al.* 2010; Oxfam 2011; Anseeuw *et al.* 2012; McMichael 2012; Cotula 2012; Borrás *et al.* 2013; Schoneveld 2014a). Because of the artificial markets created by the introduction of biofuel incentives and blending mandates in North America and the European Union and high fossil fuel

¹Mozambique’s Land Act confers the power to grant land larger than 10,000 ha on the Mozambican Council of Ministers. For land between 1000 and 10,000 ha the Minister of MINAG is to provide approval, while land areas under 1000 ha require the approval of the relevant provincial governor. For those investments requesting more than 10,000 ha of land, the Council of Ministers require a business plan, proof of financial and technical capacity, socio-economic information of the population in the project area, and endorsement from the Minister of Environment regarding the environmental feasibility of the project.

prices during the mid 2000s, large numbers of Northern investors, in particular, sought to acquire large areas of land in Africa for the production of biofuel feedstocks to service these mandate-driven export markets. This concerned non-food crops such as *jatropha curcas* (jatropha) that purportedly generates high yields under low input and semi-arid conditions and so-called flex-crops, such as sugarcane and oil palm, that can be utilized by a wide range of end-markets (e.g. bioenergy, food, pharmaceuticals, beverages). With the onset of a food price crisis soon after and partly in response to the energy price crisis, many private investors and governments from net food importing countries also reportedly began to increase their control over land resources in Africa to produce staple food crops for their home markets, especially grains such as rice and maize. Many suggested that these investments originated in particular from Asian countries such as China, South Korea, and India and Gulf States (see von Braun and Meinzen-Dick 2009; Hall 2011; Anseeuw *et al.* 2012; Buckley 2013; McMichael 2012; Woertz 2013; Carmody 2013; Margulis *et al.* 2013). These investment patterns suggest that investors are primarily responding to opportunities within their own home markets.

Those governments pursuing food security objectives have reportedly played an important role in stimulating outwards investment through sovereign wealth funds, state-owned enterprises, and various fiscal incentives (Cotula *et al.* 2009; GTZ 2009; Toulmin *et al.* 2011; Woertz 2013). Many Northern investments, on the other hand, are said to be increasingly financed through investment vehicles such as private equity, hedge and pension funds (HighQuest 2010; FIAN 2010; Miller *et al.* 2010; GRAIN 2011; Bergdolt and Mittal 2012; Cotula 2012; Daniel 2012; Buxton *et al.* 2013). With farmland functioning as a hedge against market fluctuations and with food and energy prices typically outperforming financial markets, the agricultural sector has become increasingly attractive to such institutional investors.

Another common theme in recent agricultural investment literature is the investor proclivity towards business models that involve industrial plantations as opposed to smallholder inclusive business models such as contract farming (Toulmin *et al.* 2011; Cotula 2012; Deininger and Byerlee 2012). There is no published research available, however, that substantiates this assumption, with trend studies undertaken by, for example, Anseeuw *et al.* (2012), GRAIN (2012) and Schoneveld (2014a) typically focusing exclusively on investments that adopt plantation models. This emphasis on investments that involve large-scale land acquisitions has led many to equate agricultural investment with displacement, dispossession and environmental destruction. For example, most recent impact studies analyzing the socio-economic and environmental impacts have focused on plantation-based investments, which have illustrated that, especially in Africa, such investments tend to result in the involuntary displacement of customary land users who lack secure tenure rights; the negative implications thereof rarely being addressed through appropriate compensation and resettlement and rehabilitation support (Chachage 2010; Baxter 2011; Locher 2011; Oxfam 2011; Tsikata and Yaro 2011; Väh 2012; German *et al.* 2013; Schoneveld 2013; Shete, 2013). Similarly, the conversion of land to plantation monoculture is also reported to have, by and large, produced negative environmental impacts since this often involves deforestation, pollution, biodiversity loss, soil erosion and nutrient mining (Gordon-Maclean *et al.* 2009; Rhamato 2011; Nguiffo and Schwartz 2012; Rainforest Foundation 2013; Schoneveld 2014b; Shete *et al.* 2015). Such impacts are considered to be especially severe in African countries due

to the lack of capacity and political will to enforce existing social and environmental safeguards and structural deficiencies in the law (especially with regard to the protection of customary land rights).

Studies on agricultural investments in Mozambique have tended to produce similar conclusions. For example, export-oriented biofuel investments are also widely considered to a primary driver of investment, especially for crops such as sugarcane and jatropha (see Ribeiro and Matavel 2009; Nhantumbo and Salamao 2010; Oxfam 2011; World Bank 2011; Aabø and Kring 2012). Although some have pointed to an influx of East Asian investors for rice production (Horta 2008; Waterhouse *et al.* 2010), others have questioned the veracity of such reports (Brautigam and Ekman 2012). Rather, the proposed Prosavana program in the Nacala Corridor and increased Brazilian technical cooperation has led some media and civil society organizations to express their concerns that Brazilian investors are being encouraged to emulate the large-scale mechanized soy-farming model prevalent in Brazil in Mozambique (Cabral *et al.* 2012; UNAC 2012; Zacarias 2013)². In terms of impacts, most studies in Mozambique focus on the socio-economic impacts of plantation models; producing conclusions very much in line with what is presented in literature elsewhere (see Landry 2009; Ribeiro and Matavel 2009; FIAN 2010; Nhantumbo and Salamao 2010; Theting and Brekke 2010; Matavel *et al.* 2011; Mousseau and Mittal 2011; Norfolk and Hanlon 2012). No published studies have systematically documented the extent to which other business models have been employed by recent agricultural investors.

²Prosavana is a tripartite cooperation program established in 2009 by the governments of Japan, Brazil and Mozambique. The program aims to modernize the agricultural sector in 19 districts along the Nacala Corridor by drawing on (some of) the development model applied in the Brazilian *cerrado*, an agro-ecological system similar to that of target districts (see Ekman and Macamo 2014). The development of a Master Plan detailing the program's strategies and approach has long been delayed due to resistance by transnational civil society movements over lack of meaningful participation of local stakeholder groups, displacement fears, and excessive focus on (foreign) agribusiness. The Master Plan was still to be approved in December 2015.

3. Methodology

This working paper is based on research conducted in Mozambique between November 2013 and September 2015. Mozambique was selected because it is one of the largest agricultural investment destinations in sub-Saharan Africa. This ensured that a large enough sample of active agricultural investments could be surveyed in order to adequately capture sector diversity and trends. The research comprised two phases, inventorying agricultural investments across Mozambique using official data and capturing investor characteristics, practices and motives through structured questionnaires.

3.1. Inventory of agricultural investments

Phase one began with collecting data in Maputo city from the Ministry of Agriculture (MINAG), the Ministry of Planning and Development (MPD), the Ministry of Coordination of Environmental Affairs (MICOA) and the National Library. The most useful data was obtained from two ministry directorates, the Centre of Investment Promotion (CPI) (under MPD) and its agricultural affiliate CEPAGRI (under MINAG). CPI typically forwards all agricultural investment proposals to CEPAGRI for evaluation. Though lacking capacity and resources, CEPAGRI is also mandated with monitoring and evaluating agricultural investments across the country through its four provincial offices in Gaza, Manica, Zambezia, and Nampula established thus far. These offices were subsequently visited since they tended to have the most accurate information about investor status. This was complemented by numerous key informant interviews in six of Mozambique's ten provinces (see Table A1 in the Annex for an overview of interviewed government organizations).

Since data on land use title (DUAT) allocations was not centralized at the time of research, DUAT information was requested directly from the provincial agriculture directorate (DPA) in the six provinces visited. Only the DPA's in Zambezia and Nampula were willing to provide DUAT information, however. This information was excluded from the dataset since it would skew the analysis of the geographic distribution of investor landholdings (see also Section 3.3 on Limitations).

In terms of inclusion criteria, the dataset included only investments in upstream production activities, regardless of type of business model employed. Investors must be involved in direct biomass production or sourcing. Since logging is considered an extractive activity, it was excluded from the dataset and only plantation forestry investments were included. For simplicity, investors meeting these criteria will from here forth be referred to as 'agricultural investors', though recognizing that forestry plantation investments technically fall outside the agricultural domain.

3.2. Agricultural investment survey

In phase two, 69 agricultural investors were surveyed across Mozambique employing a standardized investor questionnaire. This questionnaire included questions on the following topics:

- financial structure and performance
- cultivation practices
- crop sourcing activities
- processing activities
- employment generation and labor practices
- target market
- sustainability practices
- investor motives.

On the basis of information gathered in phase one, investors operating across 22 districts and six provinces were visited. This selection was made on the basis of relative magnitude of investor interest, as established under phase one, so as to adequately capture investment ‘hotspots’ and diverse ecological and socio-economic contexts. Figure 1 shows the distribution of the investments of 62 of the 69 sampled investors. The locations of seven investments are not depicted since these were active across multiple regions.

Attempts were made to contact all companies that, with support from central, provincial and district government, could be verified as being active in the target regions. The inclusion criteria that were applied under phase one were also applied here. The research did not account specifically for type of business models employed so as to ensure interviewed companies are sufficiently representative of the broader Mozambican investment context. Of the 123 active investors in the sampling frame, 69 investors were surveyed. A total of 42 investors did not participate due to failure to establish contact or agree on a mutually convenient interview date. Another 12 investors refused to be interviewed for various reasons. Due to the relatively low non-participation rate, it is unlikely that exclusion of these companies introduced a significant sampling bias.

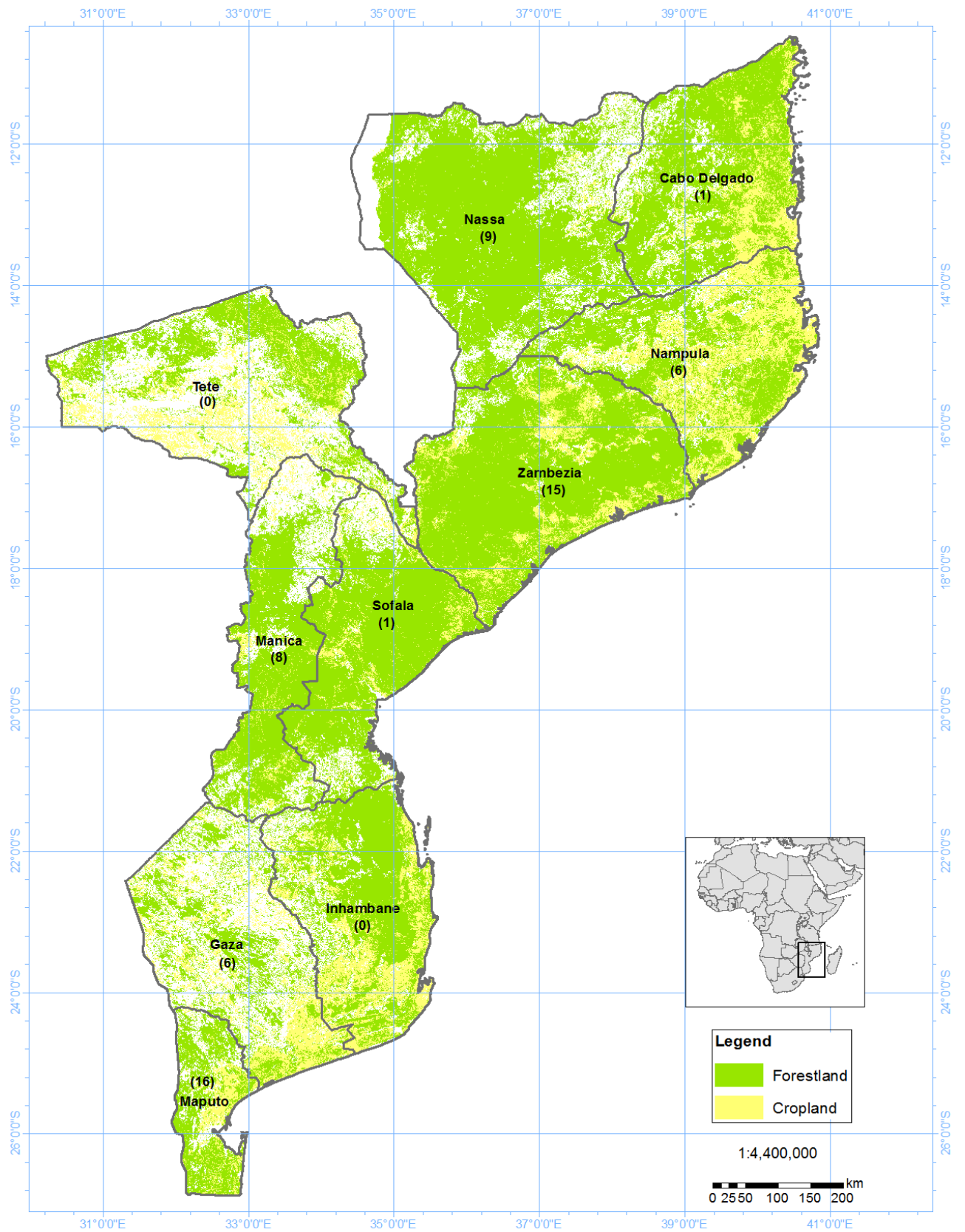


Figure 1. Provinces and major land uses of Mozambique.

Note: The number of investors surveyed by province are indicated in brackets

3.3. Limitations

The CPI/CEPAGRI data limited the determination of the exact number and size of investments, since some of its data can be inflated or deflated. One factor that inflates the figures is that the CPI only maintains the data provided by investors in their initial license application. For example, figures on employment and capital expenditure are solely based on business plans, which may be overinflated in order to enhance the likelihood that investment license applications are approved. Additionally, since the CPI lacks monitoring capacity, it is often unaware of investment status. Therefore, their data may include many investments that never materialized or failed.

Conversely, registration with the CPI is only mandatory for foreign enterprises and those that intend to export capital. Since few Mozambican investors are compelled to export capital, most fall outside the purview of the CPI. Consequently, foreign investors are over-represented in the CPI data. In addition, the CPI has not compiled data on investments established prior to 2002. However, the number of investments established before 2002 is likely negligible (see Box 2 under Section 4.3).

Although data on DUATs is available at the provincial level, since this tends to be perceived as confidential and politically contentious information, provincial governments rarely make this data public accessible. However, with support from the Millennium Challenge Account, the government is currently working to consolidate information from the provinces in a Land Information Management System (LIMS) under the National Directorate of Land and Forests (DNTF). However, since a central land registry was yet to be completed at the time of research, comprehensive information on DUATs was not available. It remains unclear, however, whether this data will become publicly available once LIMS becomes operational.

In addition to challenges in compiling official data, researchers experienced a number of other challenges. For, example, due to armed clashes between the FRELIMO and RENAMO it was unsafe to travel to Sofala province. Floods in Manica also restricted access to certain farms. Therefore, some geographic areas could not be represented to the desired extent in phase two.

4. Agricultural investment patterns

This section analyzes agricultural investment patterns by drawing on the consolidated dataset of official investment data. It starts with an overview of investment trends, followed by an analysis of geographic and sectoral patterns. The final sub-section draws on both national and provincial land-titling data to identify trends in land titling.

4.1. Investment trends

Despite some reliability and comprehensiveness issues, the dataset developed does offer some important insights into national investment trends and geographic and sectoral patterns. This dataset captured 482 officially approved investments in the agricultural sector between 2002 and 2013. The status of 220 investors could be confirmed, equivalent to 45.6% of the sample (Figure 2). A total of 69.1% of investments (152) with a confirmed status were in fact operational, 7.3% were in the process of commencing operations, and 23.6% had withdrawn their investments due to financial and/or operational difficulties or the revocation of investment licenses. Investments with an unknown status are, according to sources, mostly failed investments or those that are yet to commence operations. However, some investments located in remote and poorly accessible locations may not be well captured by regional CEPAGRI offices that are responsible for monitoring and evaluation.

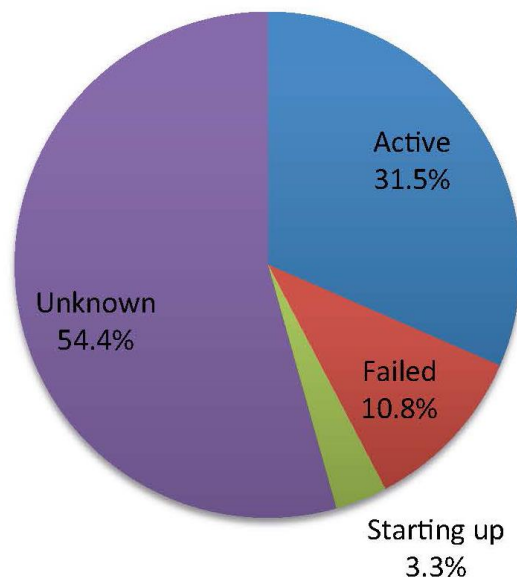


Figure 2. Investment status (n = 482).

There has been a steady annual increase in the number of investments approved since 2002. Since the 2007/2008 food and energy price crises, the number of agricultural

investments in Mozambique has more than doubled. Although many claim that investor interest in the agricultural sector declined towards the end of global food and energy crises in 2009 and in response the financial crisis, in Mozambique there appears to be a steady increase in investment commitments over the 2010s. No clear trends, however, are discernible when analyzing the value of agricultural investment pledges. Pledges are, however, a less meaningful indicator of investment scale since they are based largely on what tends to be overly optimistic business plans and poorly substantiated long-term projections, based entirely on self-reporting. Single investors pledging to invest large amounts of capital therefore tend to heavily skew annualized data. In the case of the anomalous year 2009, two large forest plantation companies, Norway's Green Resources and Portugal's Portucel, planned to invest, respectively, USD 2.21 billion and USD 2.31 billion. Conversely, investment projects with more modest capital pledges could emerge to become significantly larger than projected.

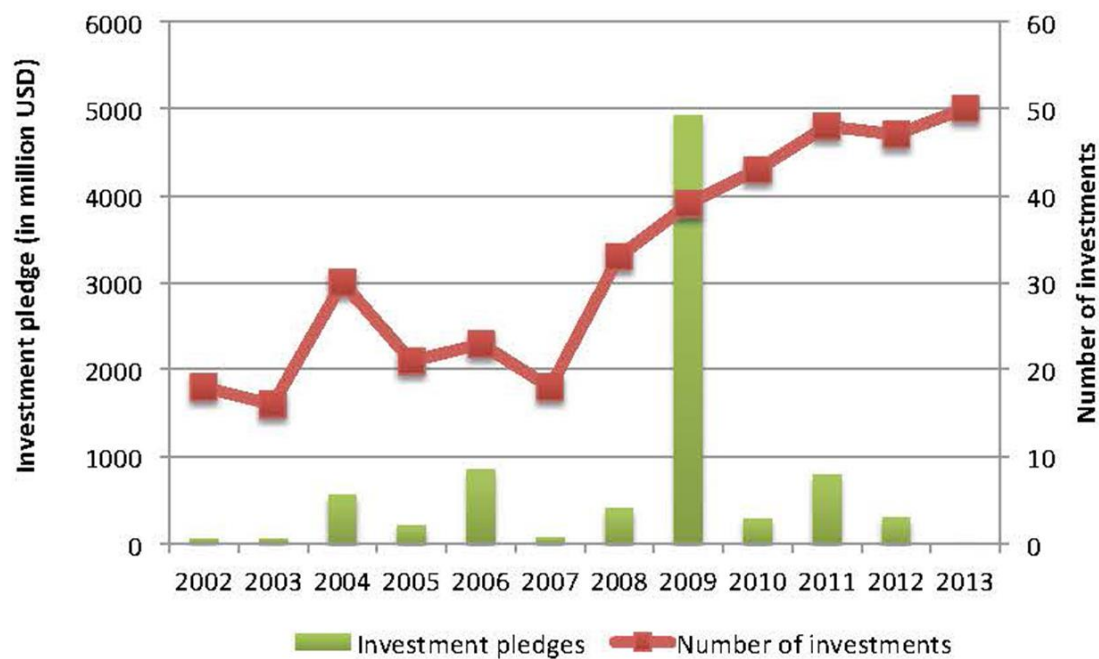


Figure 3. Changes in investment intensity, by year (n = 410).

Note: Data on investment pledges was unavailable for 2013

As regards investor origin, Figure 4 shows that a small number of countries account for the vast majority of investments. For example, of the 416 investments for which the origin of the lead investor could be established, 72.1% originated from just five countries, namely South Africa (131), Mozambique (74), Portugal (46), Zimbabwe (25), and the United Kingdom (24). The prominent role of regional investors South Africa and Zimbabwe can be ascribed to domestic political pressures to redistribute the landholding of white commercial farmers. Many white commercial farmers, as a result, sought to regain access to farmland in neighboring countries such as Mozambique and Zambia with more accommodating regulatory regimes. Portuguese investors, on the other hand, due to cultural and linguistic similarities, have tended to focus their investment activities specifically in Lusophone countries and former

colonies such Mozambique and Angola (see also Schoneveld 2014a). The persistent economic crisis in Portugal, also one of Europe’s most food insecure countries, has further encouraged Portuguese investors to seek opportunities in Mozambique.

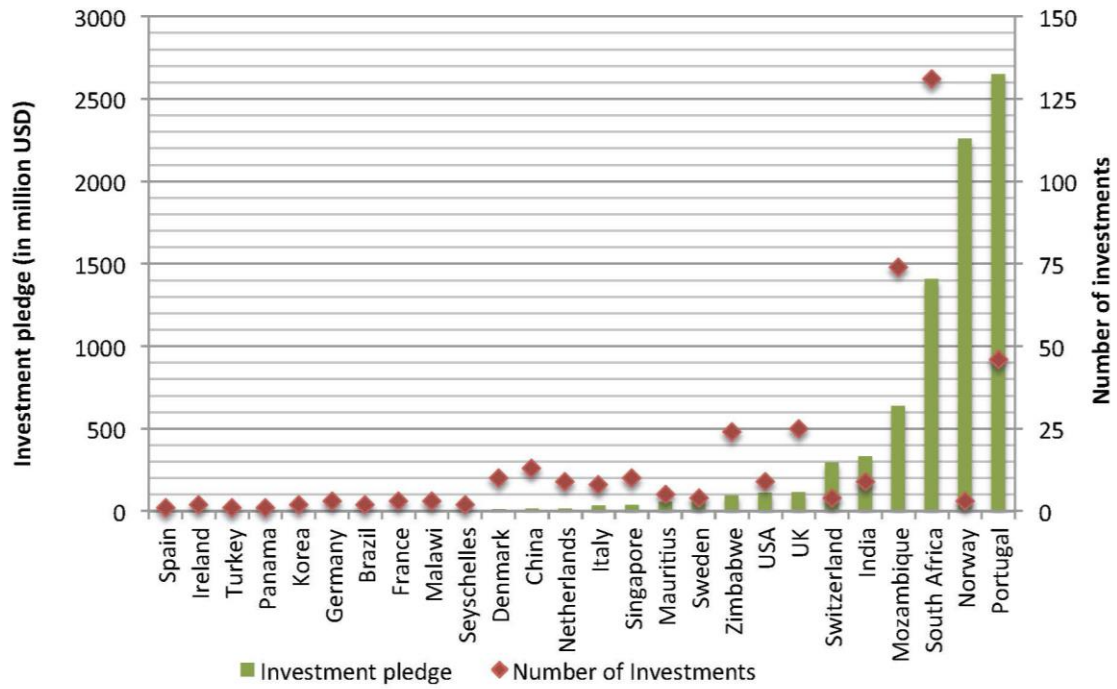


Figure 4. Investment intensity, by country of origin of lead investor (n = 416).

With regional and domestic investors constituting a large proportion of the investment base, as a region sub-Saharan Africa accounts for the majority of investors (241), followed by Europe (120) and Asia (37) (Figure 5). Most Asian investments are led by China-, Singapore- or India-based investors. With 13 registered investments, China’s presence in the Mozambican agricultural sector is modest, despite the image that the media tends to project. Similarly, Mozambique is often portrayed as a prime destination for Brazilian investors seeking to emulate their agricultural production models overseas. In reality, only two Brazilian agricultural investments are formally registered in Mozambique.

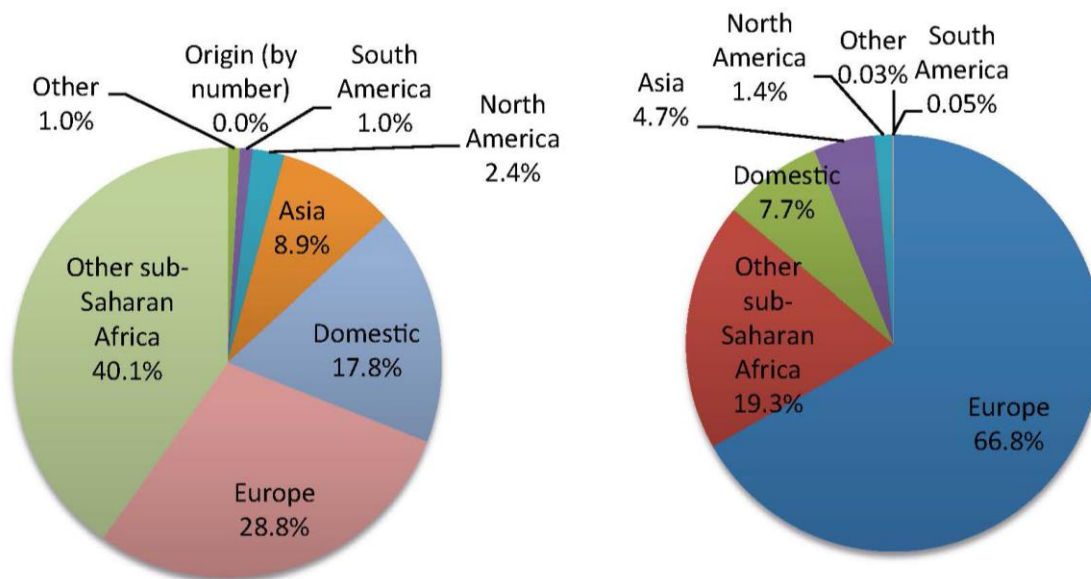


Figure 5. Investment intensity, by region of origin of lead investor (by number (left), capital pledged (right)) (n = 416).

4.2. Sectoral and geographic patterns

In terms of sectoral orientation, the largest proportion of approved investments target the food end-market. This is followed by biofuel, textiles, and wood-based industries (Figure 6). A number of investors also intended to target multiple end-markets, mostly involving food crop production with commercial use of by-products, typically including combinations of food and feed and/or fuel. Disproportionately high failure rates were observed amongst biofuel investments, where 85.0% of investments with a confirmed status had ceased their operations. In contrast, only 13.5% of investors with a confirmed status that targeted the food sector had ceased their operations. Of biofuel investments, 90.0% focused on the inedible oil-seed-bearing crop jatropha, which in most cases failed to generate anticipated yields. Of the 27 jatropha investments, only two could be confirmed as being operational at the time of research.

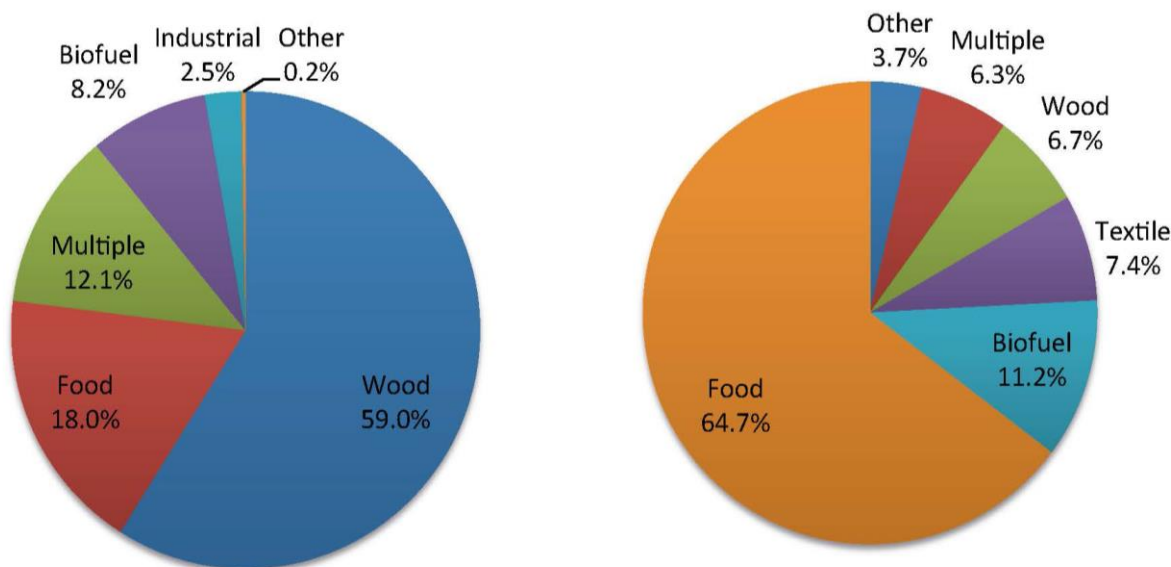


Figure 6. Sectoral distribution by number (left) and capital pledged (right) (n = 269).

Analysis of geographic distribution shows a particularly high concentration of investment in Manica and Maputo provinces, both in absolute numbers and relative to the area of the provinces (Table 1). Additionally, relative to the area of land considered by MINAG's agrieological zoning (unpublished) to be suitable and available for commercial agriculture, forestry and livestock investments (10.56 million hectares or 13.4% of Mozambique's land area), similar patterns can be observed (Box 1). This highlights that risk of land use competition – for example, with land already under cultivation and forests – is especially high in these provinces. Insufficient reliable data is available however to evaluate whether more land has been allocated in these provinces than is potentially suitable and available.

Box 1. Agroecological Zoning in Mozambique

An agro-ecological zoning exercise was completed in 2008 to identify lands that are agro-ecologically suitable and available for agriculture, forestry and livestock investment. Lands already designated for other uses (e.g. mining, tourism, community areas, itinerant agriculture or forestry) and of ecological significance (e.g. conservation areas, mangroves, wetlands) were excluded. At a scale of 1:1,000,000, the land zoning was heavily criticized for not accurately capturing all competing land uses. As a result, a new zoning exercise was undertaken between 2010 and 2013 at a scale of 1:250,000 for all provinces in Mozambique except Maputo.

Table 1. Distribution of investment by province (n = 478)

Province	Surface area of province (in ha)	Suitable and available land for investment (in ha)	Proportion land area available and suitable for investment	Number of investments	Area of suitable and available land per investor (in ha)
Tete	10,066,225	2,358,152	23.4%	10	235,815
Niassa	12,958,020	2,354,910	18.2%	20	117,745
Inhambane	6,877,537	1,863,206	27.1%	32	58,225
Cabo Delgado	7,785,097	569,848	7.3%	22	25,902
Zambezia	10,313,290	728,598	7.1%	41	17,771
Nampula	7,813,213	592,744	7.6%	43	13,785
Sofala	6,775,315	575,973	8.5%	46	12,521
Gaza	7,533,385	628,937	8.3%	56	11,231
Manica	6,228,724	873,743	14.0%	81	10,787
Maputo	2,360,515	11,000	0.5%	127	87
Total	78,711,321	10,557,110	13.4%	478	22,086

Source: Land suitability and availability data from MINAG (various dates, unpublished).

Of South African investments, 86.3% are located in the five provinces in closest proximity to South Africa (Maputo, Manica, Inhambane, Gaza, and Sofala). Similarly, 78.3% of Zimbabwean investments are located in Manica province, which borders and is well connected to Zimbabwe. Investments originating from other countries are more uniformly distributed across provinces, suggesting that geographic biases are only apparent with regional investors.

Figure 7 offers a disaggregation of investment intensity at district level. From this, it can be observed that in Maputo and Gaza, investments are concentrated within the fertile agro-ecological zone that is locally referred to as the ‘Maputo’s interior’. This includes most districts in Maputo, as well as Chokwe district in southern Gaza. Those districts have, under Portuguese colonial occupation, become some of Mozambique’s most commercially oriented areas of agricultural production. The comparatively well-established on-farm infrastructure, such as irrigation and road and rail networks, connecting these farming areas to the Maputo port and neighboring countries has made this area highly attractive to agricultural investors. Despite its strategic location, Gaza’s countryside has attracted less investor interest due to its aridity and poor infrastructure. Livestock investors primarily target these areas.

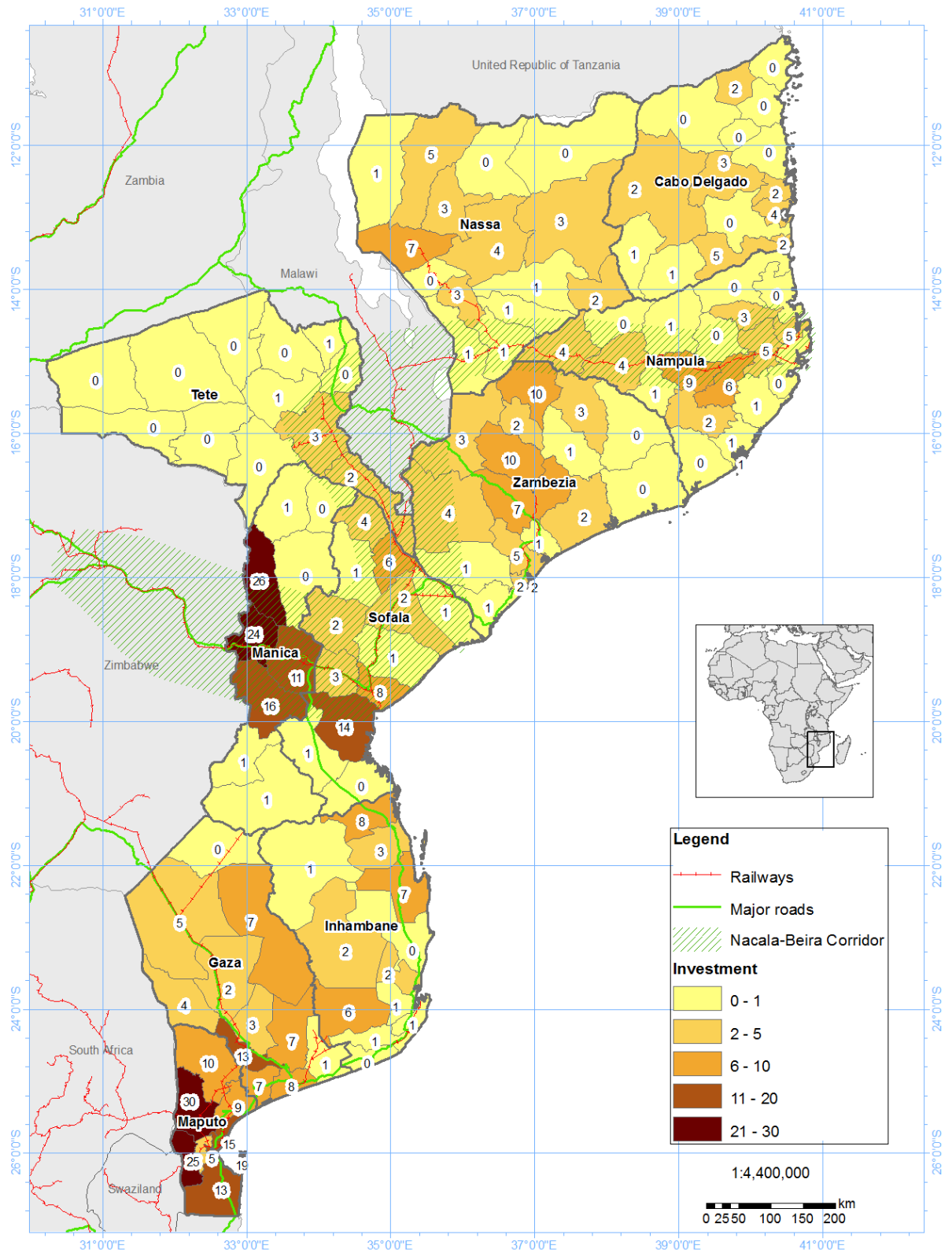


Figure 7. Distribution of investment by district.

In other provinces, most investments are concentrated within emerging growth corridors, where major road and railway networks are being established and/or rehabilitated. These include major private and public–private consortiums developing and managing infrastructure in the Nacala Corridor such as the Integrated Nacala Logistical Corridor (CLN), the Northern Development Corridor (CDN), and the Nacala Road Corridor Development. These projects intend to provide a more efficient and cost-effective route for transporting goods from Malawi, Zambia and the provinces of Tete and Niassa to the Nacala and the newly constructed Nacala-à-Velha ports in Nampula. Infrastructure projects in the other major growth corridor project, BAGC, involve the rehabilitation major road and railroad networks that link the port of Beira in Sofala westwards to Harare in Zimbabwe (through Manica) and northwards to Lilongwe in Malawi (through eastern Tete).

Outside these corridors, other target areas include the fertile medium to high altitude areas in Zambezia, such as Gurue and Lugela districts. Under Portuguese occupation, these areas became important production centers for cash crops, such as coffee, tea, banana, and various tree crops. Due to its proximity to the Malawian market and established agricultural infrastructure, this area is emerging as an important investment hotspot. Though comparatively remote and underdeveloped, parts of Niassa province have attracted numerous large forest plantation investments. Plantation forestry tends only to be economically viable at a large scale and Niassa is one of the few provinces where large contiguous land areas with low population densities can be acquired. The Malonda Foundation, established as a partnership between the Swedish and Mozambican government to stimulate forest plantation investments specifically, has played an important role in facilitating investments in the province, particularly with respect to land acquisition.

4.3. Land acquisition trends

According to data from DNTF, 17,953 DUAT requests were made in Mozambique between 2008 and 2012, covering an area of approximately 10.75 million hectares. Approximately 62% of the area requested and 68% of requests were approved (Table 2), with the average DUAT approval concerning an area of 546 ha. In addition to agriculture investments, approvals also relate to community delineations, real estate, industrial development and tourism. The data also highlights that the government has, since 2010, become more conservative in allocating land; for example in the period 2008–9, 85% of DUAT applications were approved, as opposed to 29% in the period 2010–2. This is partly attributable to the government more stringently screening land applications on their viability and desirability following the moratorium.

Table 2. DUATs requests and approvals, 2008–12.

Year	Number of requests	Area requested (ha)	Number of approvals	Area approved (ha)
2008	3,857	4,618,230.90	3,080	4,137,717.07
2009	2,895	1,636,025.96	2,528	1,208,749.08
2010	2,123	653,821.03	2,175	279,781.10
2011	3,338	2,210,693.30	2,468	387,609.50
2012	5,740	1,624,254.40	1,947	648,040.05
Total	17,953	10,743,025.59	12,198	6,661,896.80

Source: DNTF (2013)

Of the 482 investments in the compiled dataset, data on DUAT requests was obtained for only 159 investments. The average investor requested a comparatively sizeable 15,341 ha (Table 3). For 90 investments of these investments, it was confirmed through official government data that DUATs were in fact allocated. The average area of land allocated was 17,657 ha per investor; especially for larger investments, this typically involves multiple DUATs. The average area allocated exceeds the average area requested, largely because a number of large forestry and biofuel investments acquired more land than they initially applied for. On average, forestry, biofuel and textile investments acquired the largest areas of land.

Table 3. DUAT requests and approvals for agricultural investors, by sector.

Sector	Number requested	Average area requested	Number approved	Average area approved
Food	85	4,782.5	43	4,183.0
Biofuel	22	6,674.5	10	10,129.6
Unknown sector	18	12,691.1	14	6,221.2
Multiple	14	9,639.2	6	3,515.0
Wood	13	112,575.2	8	139,568.3
Textile	5	10,700.0	5	9,156.0
Other	2	2,750.0	4	1,872.4
Total	159	15,341.0	90	17,656.6

Since the LIMS is still under development, national-level DUAT data cannot be fully interrogated to determine the relative magnitude of land allocations to, for example, agribusinesses or to confirm what proportion of registered investors are successful in their land applications. However, the DUAT information obtained in Nampula illustrates that commercial agriculture (defined here as production involving 100 ha or more of land) and community delineations most likely account for the bulk of DUAT approvals. As can be seen in Figure 8, commercial agriculture and community delineations account for 39.4% and 53.3%, respectively, of a total area of 1,467,774 ha

that is currently titled in Nampula. Individually titled plots for small- and medium-scale agriculture accounts for only a small proportion of land titled for agricultural purposes in Nampula (2.7%). In Zambezia, only 1.5% of all active agricultural DUATs concern areas smaller than 100 ha. Most small and medium holders secure land through customary arrangements and/or community DUAT titles. Due to the comparatively high cost of titling, most small and medium holders are discouraged from seeking individual titles for their farmland.

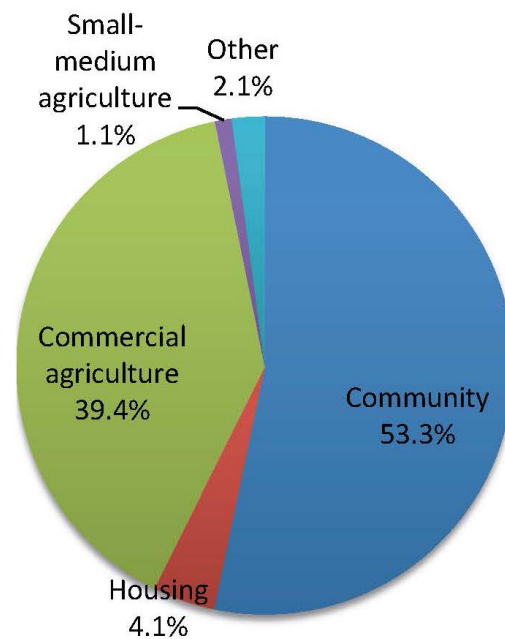


Figure 8. Active DUATs in Nampula in 2014, by sector.

When analyzing allocation patterns over time for commercial agriculture, in both Nampula and Zambezia, it is observed that the largest areas of land were allocated after 2001 (Table 4). In Nampula, 57.5% of the total area titled involved allocations after 2001, while in Zambezia this involved 79.2% of the total area under commercial agriculture DUATs. Before 2002, foreign investors that acquired land were largely of Portuguese origin, consisting mostly of individuals rather than corporate entities that acquired land in the early 1980s and mid-1990s. Anecdotal evidence suggests that many of these Portuguese landholders either possessed strong ties with anti-colonial political groups or are colonial settlers that returned to Mozambique after the Mozambican Civil War ended in 1992.

Although more titles have been allocated to Mozambicans in both provinces, on average foreign held agricultural DUATs are three to six times larger than the average DUAT held by domestic investors (Table 4). When accounting for investors that hold multiple DUAT titles – for example, Green Resources in Nampula obtained 14 DUATs and Portucel and Tectona Forests in Zambezia 22 and 26 DUATs, respectively – this difference becomes even more pronounced. In Nampula and Zambezia, foreign investors hold 47.5% and 54.5% of the total land area titled for commercial agriculture.

Table 4. DUAT allocation trends for commercial agriculture in Nampula and Zambezia.

	Nampula	Zambezia
Total commercial agriculture DUATs	752	465
Proportion allocated after 2002	34.4%	77.4%
Proportion number foreign	12.8%	28.4%
Total area under commercial agriculture DUATs	578,001 ha	679,886 ha
Proportion area allocated after 2002	57.5%	79.2%
Proportion area foreign	47.5%	54.5%
Average size per DUAT – domestic investor	462.2 ha	927.6 ha
Average size per DUAT – foreign investor	2,830.3 ha	2,810.6 ha
Average total landholdings – domestic investor	515.3 ha	1,259.9 ha
Average total landholdings – foreign investor	4,428.0 ha	8,632.9 ha

Analysis of titling patterns also sheds light on the effect of changing national agricultural investment discourse on land allocation practices. For example, no investors obtained DUATs larger than 10,000 ha, which would have required approval from the Council of Ministers, in the two provinces since 2010. Similarly, as per moratorium stipulations, no DUATs larger than 1,000 ha were allocated during the period during which it was in effect in 2010 and 2011. In Nampula, no DUATs at all were allocated during 2011 (Figure 9). However, data from 2012 and 2013 shows that in Zambezia the total and average DUAT area exceeds that of the mid-2000s, with more land allocated to foreign investors than to domestic investors (Figure 10). Land tilting in Nampula appears to have slowed since the start of the moratorium, though returned to pre-2009 levels in 2013, with the proportion of total DUATs allocated to foreign investors exceeding historical averages. This would suggest that land allocations practices in both provinces have not changed significantly since the moratorium – only that titles larger than 10,000 ha have become less common. However, in most years, fewer and smaller areas of land are typically allocated in Nampula than in Zambezia. This could be explained by the smaller area of land that is considered available and suitable for agricultural investment in Nampula (see Table 1).

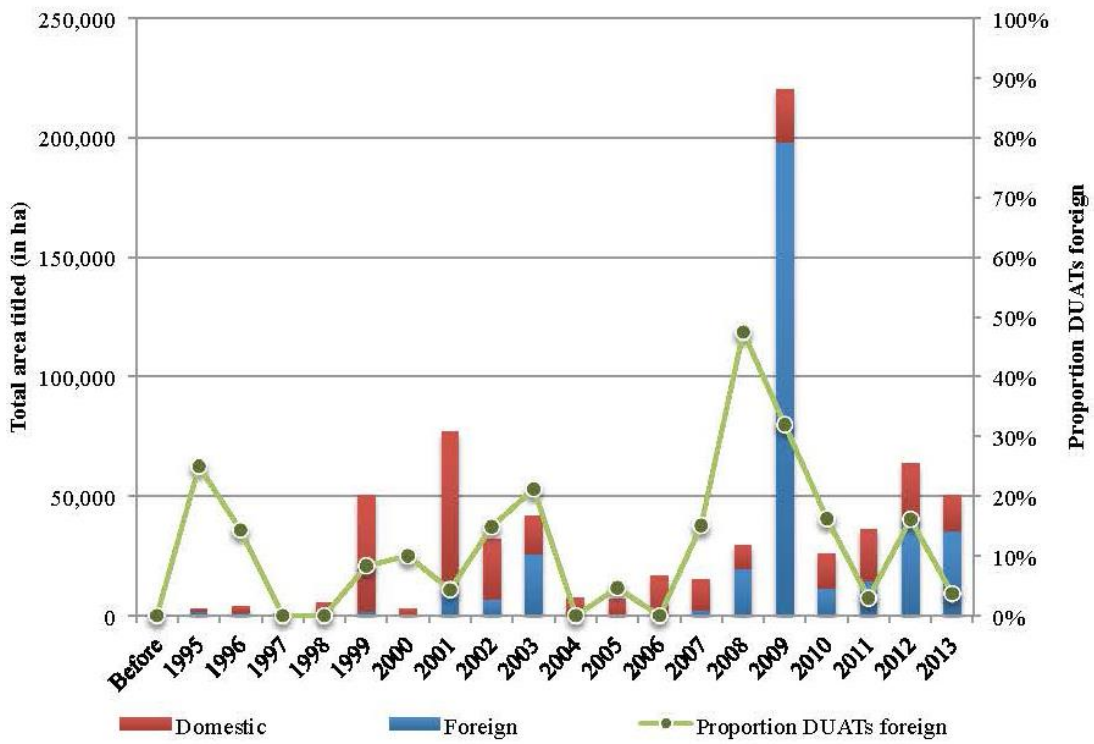


Figure 9. Titling patterns in Zambezia 2002-13.

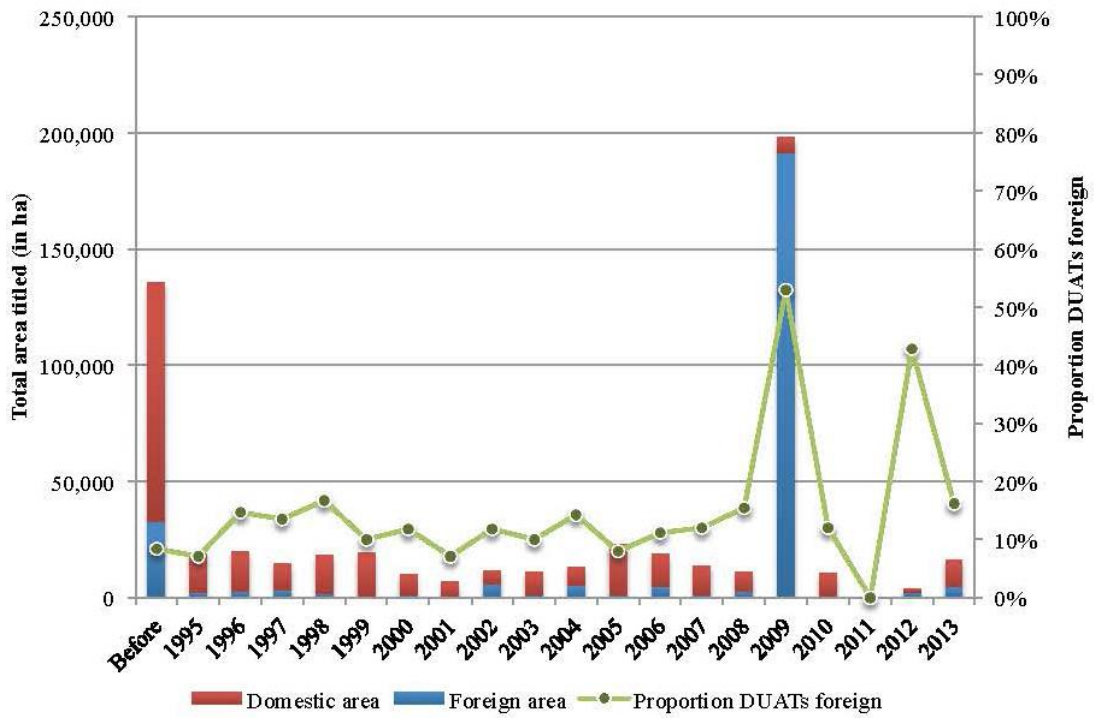


Figure 10. Titling patterns in Nampula 2002-13.

In both provinces, it was observed that in 2009 significantly more land was allocated for considerably larger average areas than in any other year. Analysis of DUATs shows that in both provinces more than 90% of the total DUAT area approved in 2009 occurred in the month of December, the last month before the moratorium took effect. This would suggest that many DUAT applications were likely expedited to pre-empt the moratorium. This relates in particular to the large DUATs obtained by Portucel and Green Resources in December 2009.

Box 2. What does the Nampula and Zambezia suggest about the representativeness of national inventories?

Analysis of land-titling patterns in Nampula and Zambezia enables us to better contextualize findings from Sections 4.1 and 4.2. Since the vast majority of foreign investors were established in these two provinces after 2002, there will likely not be many investors established before that date, illustrating that the time period covered by CPI/CEPAGRI data will likely capture an estimated 90 to 95% of agricultural investments in Mozambique. Moreover, in Zambezia all foreign investors receiving titles after 2002 were registered with CPI/CEPAGRI. In Nampula, three foreign investors with titles were not, though it could not be established whether these investors were perhaps registered under different names with the CPI/CEPAGRI. Regardless, this does illustrate that few foreign investors establish themselves without CPI/CEPAGRI endorsement, implying that the data presented in the previous section is an accurate representation of investment intensity in Mozambique.

The large number of Mozambican agricultural investments since 2002 does, however, illustrate that the dataset poorly captures domestic investments, which, as discussed above, are only required to register with the CPI/CEPAGRI if exporting capital. In Nampula and Zambezia alone, 418 Mozambican investors received titles since 2002, while over this period only 74 from the entire country were registered with CPI/CEPAGRI. This highlights that domestic investment dynamics are not well covered by national-level trends analyses. Though perhaps smaller in size, data from between 2009 and 2013 suggests that in recent years domestic investors have been approximately four to six times more plentiful than foreign investments.

5. Agricultural investment characteristics

Drawing on findings from the 69 investment surveys, this section complements Section 4 by providing a more in-depth analysis of agricultural investment characteristics in Mozambique. It examines the structure of sampled investments, their sectoral orientation, the types of value chain activities undertaken, investor production and sourcing practices, and their market focus.

5.1. Investment structure

The majority of lead investors of the 69 sampled investments originate from within the region, with 26.1% (18) of lead investors based in Mozambique and 30.4% (21) from other African countries (Zimbabwe (7) and South Africa (14)) (Figure 11). European lead investors account for 30.4% of the sampled investments, led by United Kingdom (6) and Sweden (5). While national investment data suggests that investments originating from Portugal should be prevalent, with only two of the sampled investments originating from Portugal, few Portuguese investments appear to be found on the ground. Asian (5), Middle Eastern (1) and South American (1) investments were also less prevalent on the ground than is popularly assumed.

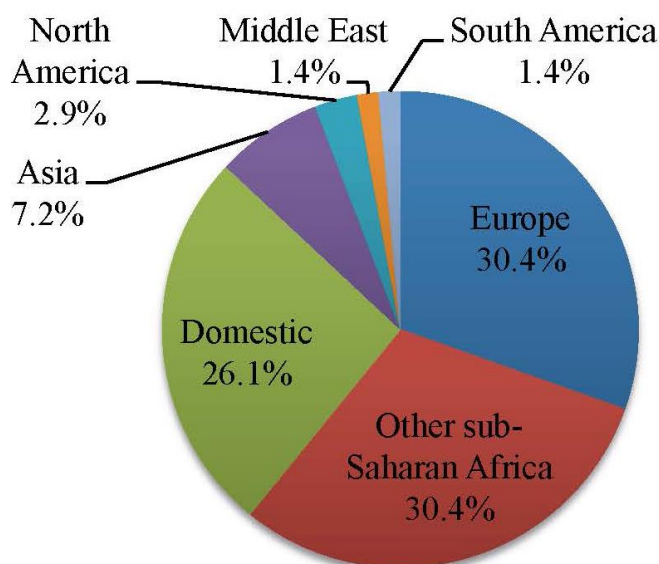


Figure 11. Origin of lead investor.

When examining the complete ownership structure of sampled investors, almost half (49.3%) involve participation of domestic partners, either as majority or minority shareholders (Figure 12). Various local stakeholder groups suggest that many large foreign investors tend to partner with (companies owned by) senior government officials

in order to facilitate access to large areas of land and the necessary permits. This is also supported by the data; investments involving Mozambican minority partners (18) on average have access to 2.9 times more land and have invested 2.7 times more capital than investments without Mozambican partners. Few investors were, however, willing to disclose the identities of these, often ‘silent’, partners.

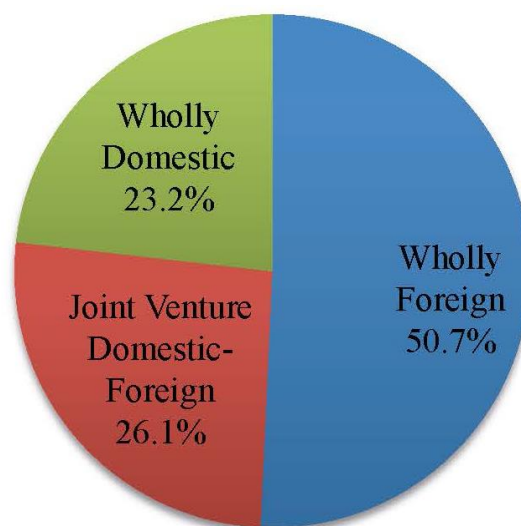


Figure 12. Mozambican representation.

Examining the types of legal entities owning sampled investments, the majority (58.0%) of investments are incorporated as privately owned companies without formal affiliation to established enterprises (Figure 13). Only 21.7% are subsidiaries of multinational companies (MNC); these typically being large vertically integrated agribusinesses. The third group of investors is investment funds, who hold equity in an investment on behalf of its shareholders for purely investment purposes. In contrast to other investors, these investment companies tend to contract management companies to establish and manage operations on their behalf. Such management companies mostly originate from either South Africa or Zimbabwe. However, 76.6% of lead investors do have prior experience in the agricultural sector.

In terms of finance, most investments raise funds through share issuance. Since many investments are privately owned, most investments raise funds from private individuals, often the investment initiators, who commit their own capital to the venture in exchange for equity shares (Figure 14). Most subsidiaries of MNCs tend to raise capital through their parent company without needing to attract finance directly. Only a small proportion of investments, however, rely on credit facilities from financial service providers; these tend to consist primarily of Mozambican-led investments borrowing from domestic private banks and larger investments borrowing from international financial institutions. Approximately one in six investments managed to obtain grant financing, typically from bilateral donors through challenge or catalytic funds. These are typically funds that provide start-up capital to investments that have significant potential to contribute to socio-economic development.

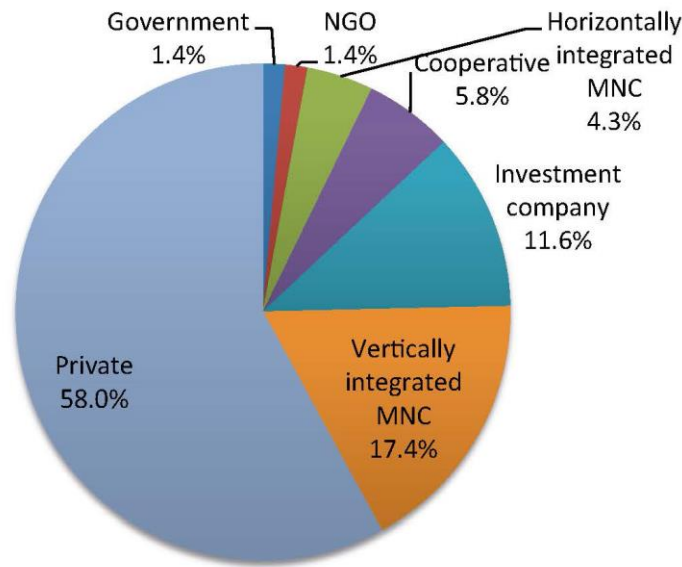


Figure 13. Type of lead investor.

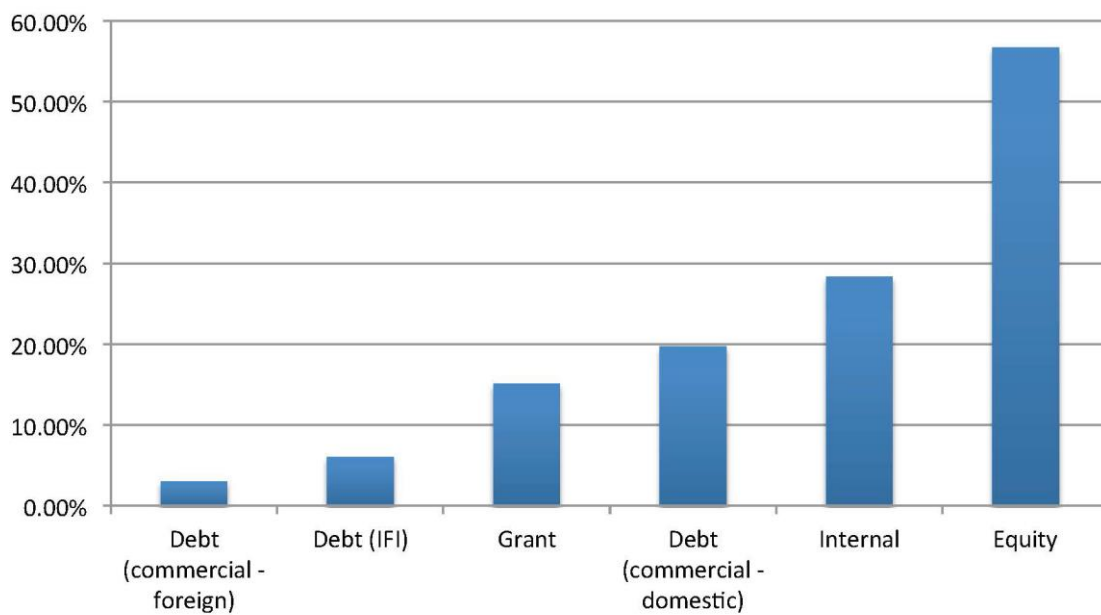


Figure 14. Primary funding mechanisms.

On average, the sampled investments at the time of research involved an investment of approximately USD 6.5 million (Table 5), with the largest investment committing an estimated USD 50 million. Few investments are, however, profitable (27.7%). This can be attributed partly to the abundance of new investments that are yet to achieve scale and/or recover initial establishment costs. For example, 56.3% of the investments older than 10 years (30.8% of the sample) were generating profits, as opposed to 11.1% of investments established within the past 10 years (69.2% of the sample).

Table 5. Financial performance.

Variable	Value
Average capital invested	USD 6,508,937
Median capital invested	USD 2,000,000
Generating profit	27.7%

5.2. Sectoral orientation

The sampled investors are engaged in the cultivation and/or sourcing of a wide range of commodities. A total of 43.3% of investors were involved in the cultivation and/or sourcing of one or more grains, especially, in order of significance, maize, soybean, and rice (Figure 16). The next most important commodity classes are botanical fruits (24.6%), particularly banana, tomato and lychees, and timber (18.8%), particularly eucalyptus, pine and acacia. Other important commodity classes include tubers (17.4%), livestock (13.0%), and tree nuts (13.0%). Cassava, Mozambique’s most important staple crop, both in terms of calorific contribution and output, has attracted only limited investor interest (5.4% of investors).

Few clear relationships between investor origin and commodity focus are apparent. Only for a few investments could a commodity preference be discerned: for example, four of the five investments led by Asian investors concerned rice, five out of seven investments led by Scandinavian investors concerned timber, and six out of the 14 South African investments concerned bananas.

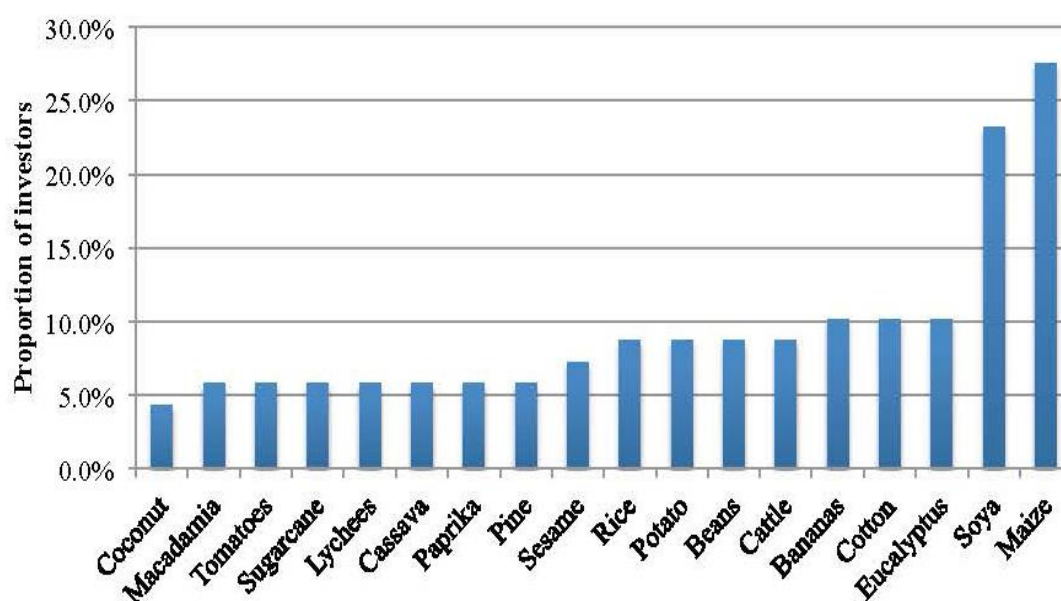


Figure 16. Types of commodities sourced and/or cultivated.

While investors all have ‘anchor’ commodities that form the basis of their business strategies, few investors are focused exclusively on one commodity. As illustrated by Figure 17, 65.2% of sampled investors are engaged in two or more commodities, typically to reduce the risk of disease and exposure to market fluctuations. For those investors focused primarily on perennial crops and timber with a long maturity period, most cultivate maize and soy to generate short-term cash flows. Most of these investors plan to cease their grain cultivation activities once their primary crops start generating revenues. The most diversified investors were those focused on horticulture; 11 of the 21 investments where the primary crop involved horticulture, for example, were cultivating four or more commodities. This is attributable to the need to practice crop rotation in horticulture – where the same crop should not be cultivated on the same piece of land for successive years – to maintain soil quality and avoid pest and disease build-up.

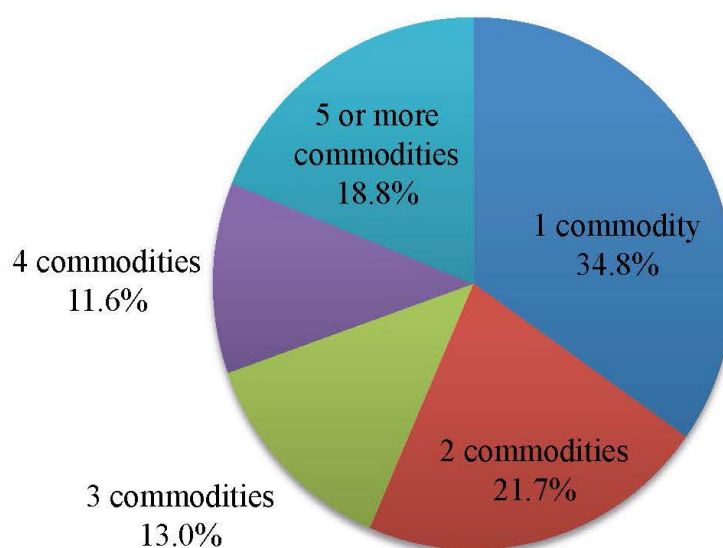


Figure 17. Number of crops per investor.

Most investments target the food end-market, followed by feed, wood products and textiles (Figure 18). Investments targeting the feed end-market are those involved in soybean production. Only one investment targeted the bioenergy end-market (in the form of ethanol gel), contrary to how investment drivers are typically portrayed in Mozambique. Although during the energy price crisis of the mid-2000s large numbers of particularly European investors did acquire land for biodiesel feedstock cultivation (notably jatropha), declining petro-diesel prices and lower than anticipated yields resulted in most of these investments ceasing their operations. Rather, agricultural investments in Mozambique that were still active at the time of research are articulated predominantly to food end-markets, as the commodity focus examined above also illustrates.

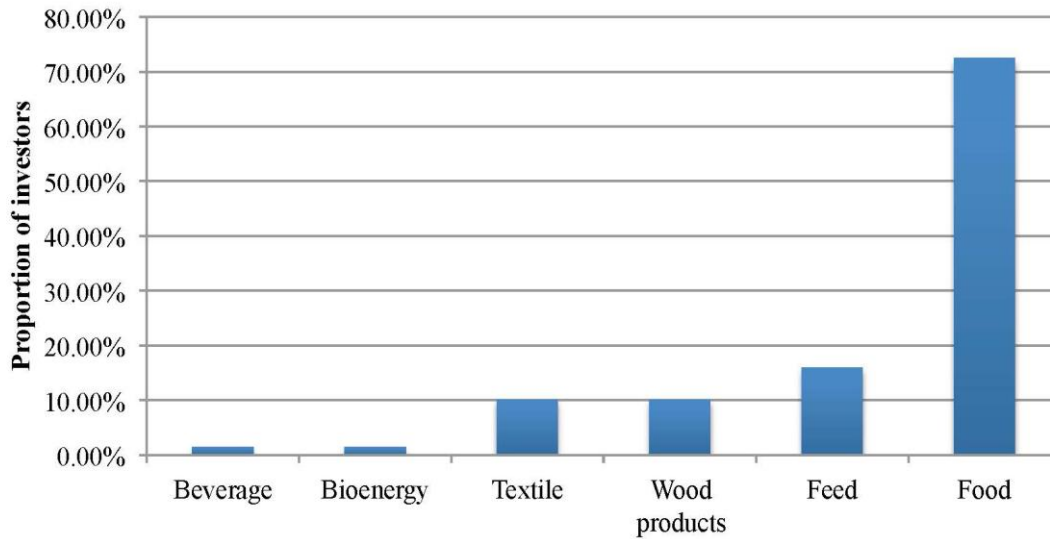


Figure 18. Type of end-markets targeted.

5.3. Value chain activities

Investors tend to be involved in a range of value chain activities. Foremost, 87.0% are involved in direct production, meaning they produce primary commodities themselves through investor owned plantations. A total of 43.5% of investors are involved in sourcing primary commodities from third parties – in all cases involving smallholder producers – with 30.5% of investments engaged in both sourcing and direct production and 13.0% only in sourcing (Figure 15). Moreover, most investments were undertaking some form of primary processing involving, for example, drying, threshing and/or dehusking. Another 21.7% were engaged in secondary processing, which tended to involve ginning, milling, sawing and extraction. Only 4.3% were involved in tertiary processing; this included the production of ethanol gel, ice cream and soap. Those that had not invested in processing were typically involved in the production of fruits and vegetables. Other value chain activities sampled investors were engaged in include the sale of inputs (mostly from those undertaking seed production activities), research and development, and retail. In total, 60.8% of investments were involved in three or more of the listed value chain activities.

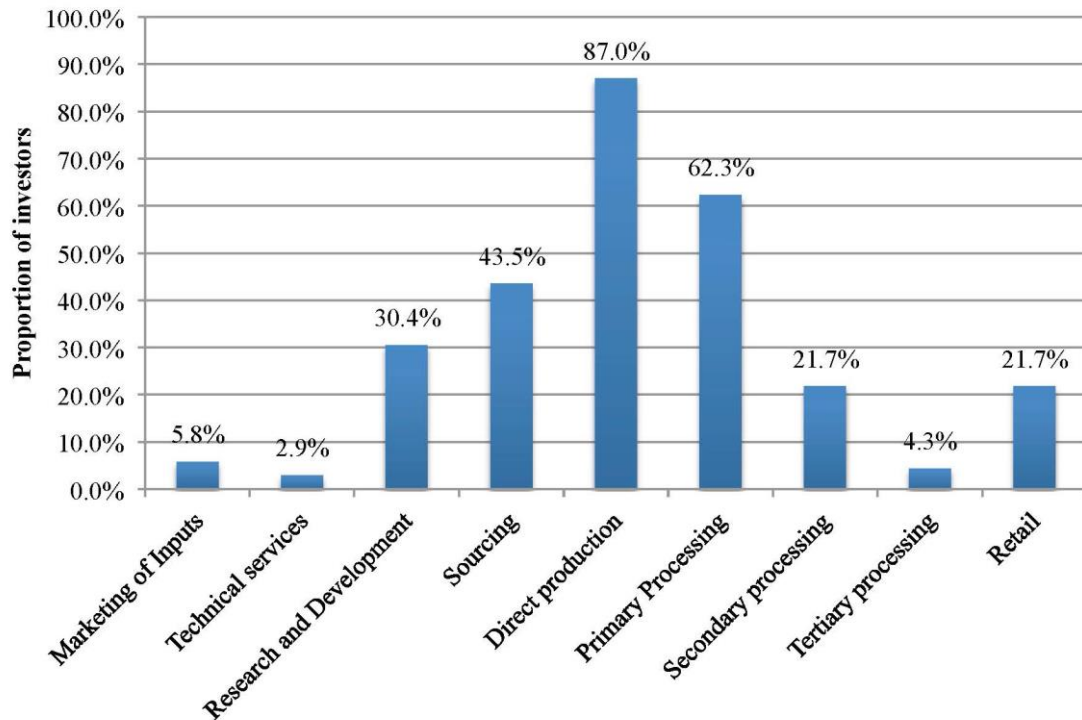


Figure 15. Types of value chain activities.

5.4. Production practices

Fifty-nine of the sampled investments are involved in direct cultivation activities. Sampled investors on average had 1981 ha under cultivation. The six investments primarily targeting the cultivation of eucalyptus had the largest areas under cultivation at the time of research, with an average of 8,140 ha planted. The horticulture investors, on the other hand, had the smallest area under cultivation, with an average of 168 ha. Because eucalyptus plantations are capital-intensive operations with high start-up costs, comparatively low returns to land, long maturity periods and high transportation costs, large areas of land are required in order to ensure there are sufficient numbers of stands of different ages (to generate more stable cash flows) and capture economies of scale (notably through mechanization and processing). Many of the industrial forestry investments claim that they require between 30,000 and 50,000 ha of producing lands to be financially viable. Horticulture investments, on the other hand, are often able to generate comparatively high returns to land and require low up-front investments (due to lack of processing needs), thereby not requiring large land areas to generate profits. Moreover, since they are comparatively labor-intensive operations (see also Section 6.2), few gains can be realized from scale economies because horticulture crops are typically less amenable to mechanization than, for example, timber and grains – rather, diseconomies of scale could arise the larger the labor force becomes.

In terms of production practices, crops of 51.8% of investments were fully irrigated (Figure 19). This largely concerned crops that are traditionally associated with

irrigation practices, including 20 of the 21 horticulture investments, all four sugarcane investments and six of the seven rice investments. Production in a further 83.1% of investments involved some mechanization of production processes; this relates in particular to land preparation and plantation management (e.g. input application). Only 15.2% of investments, comprised exclusively of soy and rice investments, have fully mechanized cultivation activities. The application of production inputs such as herbicides, insecticides, and fertilizers was widespread, with 89.9% of the sampled investors applying at least one of the inputs, 43.6% two of the inputs and 18.8% all three. The latter concerned primarily investments with soybean, maize and macadamia nuts as a focal crop.

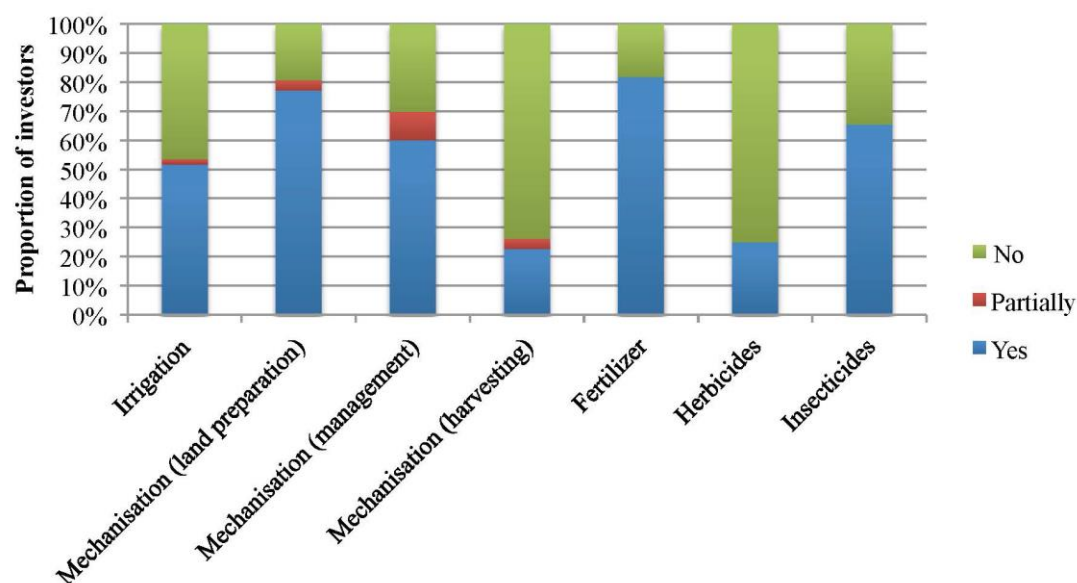


Figure 19. Input intensity.

The comparatively high level of input use and mechanization by most investments, especially when compared to typical Mozambican production systems, has enabled these investments to realize yields considerably higher than national averages. For most Mozambican smallholders, inputs are prohibitively expensive and/or not readily available. In case of investments cultivating grains, for those that were able to provide accurate yield data, average investor yields exceeded the national average by a factor of 1.7, 4.5 and 4.0 for soy, rice and maize, respectively (Table 6).

Table 6. Investor versus national yields for selected grains.

Crop	Number	Average investor yield (MT/ha)	Average national yield (MT/ha)	Proportion investor/national yield
Soy	7	2.17	1.26	172%
Rice	5	5.25	1.17	448%
Maize	7	3.86	0.96	402%

5.5. Sourcing practices

Thirty investors or 43.5% of the sample were involved in the sourcing of commodities from third party suppliers. Those investors that obtained financing through grants or credits from international financial institutions (IFI) were most inclined to engage in external sourcing (78.6% of this sub-sample). In all cases, this exclusively involved smallholders. This sourcing is undertaken through diverse arrangements. The most common form of sourcing is undertaken by investments with their own estates that supplement their production through external suppliers (66.7% of investments that source) (Table 7). From this group, 64.9% (or 43.3% of the sub-sample) arranged sourcing through contractual relations with smallholder producers; others through open market relations. From the 33.3% of sourcing investments that rely exclusively on sourcing, only 39.9% did so through contractual relations with third party suppliers. There are no clear patterns in terms of types of crops that are associated with sourcing.

Table 7. Types of sourcing mechanisms (n = 30).

		Formal Contract		Total
		YES	NO	
Nucleus Plantation	YES	43.3%	23.3%	66.7%
	NO	13.3%	20.0%	33.3%
Total		56.7%	43.3%	100.0%

On aggregate, 56.7% of sampled investors engaged in sourcing contracted smallholders. While this constitutes a majority, it is surprising to note that many investors, especially those that rely exclusively on external suppliers, opt not to secure access to adequate crop volumes through more formal contractual relations. A substantial number of investors sampled that at the time of research were not relying on contracting had attempted to do so in the past, but abandoned this model in favor of more open relations with their suppliers. This was, by and large, attributed to the prevalence of side-selling (e.g. contractors dishonoring exclusive offtake agreements). As a result, most companies were unable to recuperate investments made in smallholder productivity (e.g. in the form of production inputs and technical support), the costs of which tend to be subtracted from the value of purchased output. However, the types of companies that avoided or abandoned contracting arrangements are those that source subsistence crops traditionally cultivated in the areas they operate (e.g. maize, rice, and cassava). With such investments, the risk of not meeting sourcing targets tends to be considerable lower due to the abundance of local supply.

Those investments that remained engaged in contract farming were typically focused on cash crops, such as banana, sugarcane, and cotton, and to a lesser extent soybeans. With the exception of soybeans, for these cash crops the risk and viability of side-selling tends to be considerably lower due to lack of alternative offtake opportunities (e.g. few commercial buyers are active in the areas these investors operate). In the case of soybeans – not a traditionally cultivated crop - while a number of investors remain engaged in contract farming, albeit heavily downscaled, many abandoned

these sourcing activities altogether in favor of the plantation model due to rapidly increasing rates of side-selling. This could be attributable to the comparatively low technical and financial barriers to adoption, the influx of independent traders, and the role of non-government organizations in promoting soy uptake amongst smallholders (see Box 3 for more details). The former two factors also played a role in undermining contract farming viability amongst many investors sourcing subsistence crops. Although cotton is a cash crop widely cultivated by smallholders in Mozambique, the sector works through a concession system, so risk of side-selling is comparatively low. The concession system allocates investors a geographically confined area where they have the sole right to contract smallholders. Since this system is heavily regulated by the state, independent traders that could undermine the contracting system are typically absent.

Box 3. Soy side-selling in Zambezia

Contract farming investments in Mozambique have rarely been successful because of rampant side-selling by contracted farmers. Many investors have been unable to source economically viable crop quantities and to recuperate their investments in smallholder productivity. In the case of the emergent soy sector in Zambezia province, the prevalence of side-selling encouraged a number of investors to abandon their contract farming activities to instead focus on their large-scale mechanized soy plantations. One investor claimed that more than 90% of its contract outgrowers defaulted on their contractual commitments.

The prevalence of side-selling in the soy sector can be attributed to a number of different factors. For example, the sector emerged in the mid-2000s as a result of extensive development assistance. Through this, smallholders for many years received free technical assistance and seeds, fertilizers and inoculants at concessionary prices and faced few marketing restrictions. By the early 2010s, in districts such as Gurue, the majority of smallholders had successfully adopted soy and technical agencies began to shift their focus to promoting long-term sector viability by forging linkages between smallholders and the private sector. Although the private sector, through contract farming arrangements, offered similar type of support, they supplied smallholders with inputs on credit (without subsidizing these) and obligated farmers to sell them all their output. Since this almost tripled smallholder cost of production and removed their marketing autonomy, most smallholders felt cheated and (not having previous experience with such contractual relations and more accustomed to the accommodating stance of development agencies) disobliged to honour their commitments.

As the soy sector in districts such as Gurue began to take on a commercial scale, numerous grain traders began to enter the sector. Large international traders such as the Export Trading Group (ETG) and Cargill began to rent storage facilities and establish purchasing points and small-scale traders linked to the domestic poultry industry (locally referred to as 'Bangladeshis') began to procure directly at the village level. The resultant price competition had an inflationary effect on local soy prices, with contract farming investors typically unable or unwilling to compete. This further encouraged contracted farmers to breach their contracts. Local government made few attempts to regulate these predatory trading practices or to provide contract enforcement support. Since much of the local population is engaged in the soy sector, which in turn represents a large proportion of the electoral support base, local government lacks incentives to provide adequate regulatory oversight.

Those investors involved in contract farming all provide some level of support to the smallholders they contract in order to incentivize participation and enhance productivity. This tends to involve technical support and the provision of seeds and fertilizers (Figure 20). Technical support is mostly provided for free and seeds and fertilizers on a cost recovery basis. The cost of these inputs is subtracted from the value of crops purchased. Infrastructure development for smallholders was undertaken exclusively by rice and sugarcane investors; all of which was for irrigation purposes. These costs are typically financed through credit arrangements, where investors organize credit facilities for groups of smallholders through local private banks. Such credits are conditional on investors providing a default guarantee and for smallholders to title irrigated lands through smallholder associations to enhance investment security.

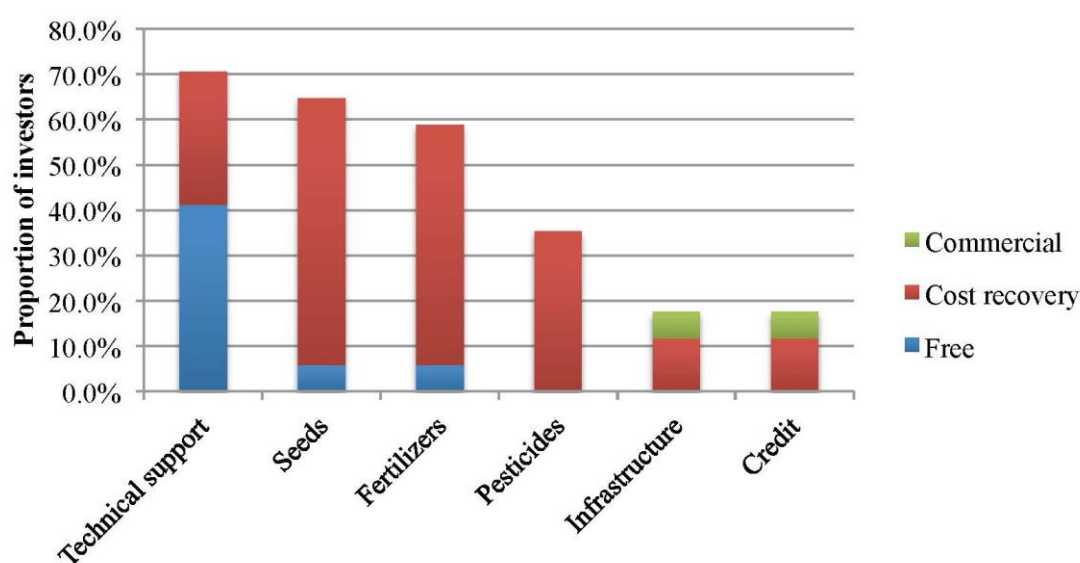


Figure 20. Input provision and terms (n = 17).

Many investors rely on smallholder associations also for other purposes. For example, smallholder associations played an integral role in the business models of 10 of the 17 investors involved in contract farming. In most cases, investors sought to generate economies of scale and reduce transaction costs by using associations to disburse inputs, coordinate the collection of crops and disseminate knowledge. Often, crop payments were also organized through the associations. Associations could also help to reduce the risk of side-selling; for example, by enabling them to capitalize on existing social capital to enhance social pressure to fulfill contractual obligations (e.g. by ascribing responsibility for contract breaches to the collective). However, in some cases the opposite effect was observed as associations instead served to legitimize side-selling when their leadership began setting a bad precedent by engaging in side-selling themselves.

In determining the crop purchase price, the 30 investors engaged in sourcing base this typically on the domestic market prices (45.5%), the international market price (36.4%) and/or the buyer purchase prices (18.2%). Some 22.7% also factor in the

costs of distribution and 13.6% the product quality. None of the investors used buffer stocks to stabilize prices paid to smallholders, implying that purchase prices are fully subject to market fluctuations.

5.6. Target markets

The domestic market is the most important offtake market for investors. On average, 73.4% of investor output was marketed domestically, with an additional 13.1% and 13.5% marketed regionally (e.g. within Southern Africa) and internationally (e.g. outside Southern Africa), respectively (Figure 21). A total 62.6% of investors sold their products exclusively to the local market, with 10.4% only selling regionally and 10.4% only internationally.

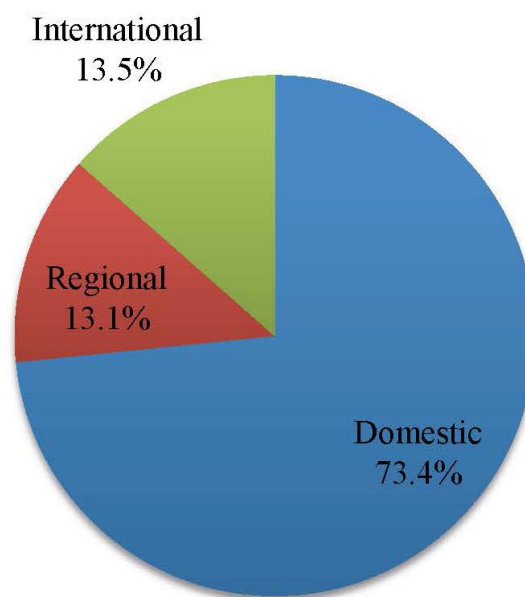


Figure 21. Major target market, by average output (n = 67).

Of the 37.4% of sampled investors that sold their products outside Mozambique, Southern Africa was the most important market (Figure 22). Of the 19 investors that sold their products within Southern Africa, 11 sold to South Africa. This consisted primarily of investors focused on bananas (6) and macadamia nuts (3), with all but one involving investors of South African origin. South Africa is the region's largest banana producer and consumer; however, the export of bananas from South Africa is negligible, with bananas production absorbed primarily by the domestic market. In the case of macadamia nuts, South Africa is the largest producer and exporter in the world. Therefore, macadamia nuts exported from Mozambique to South Africa are presumably re-exported to world markets.

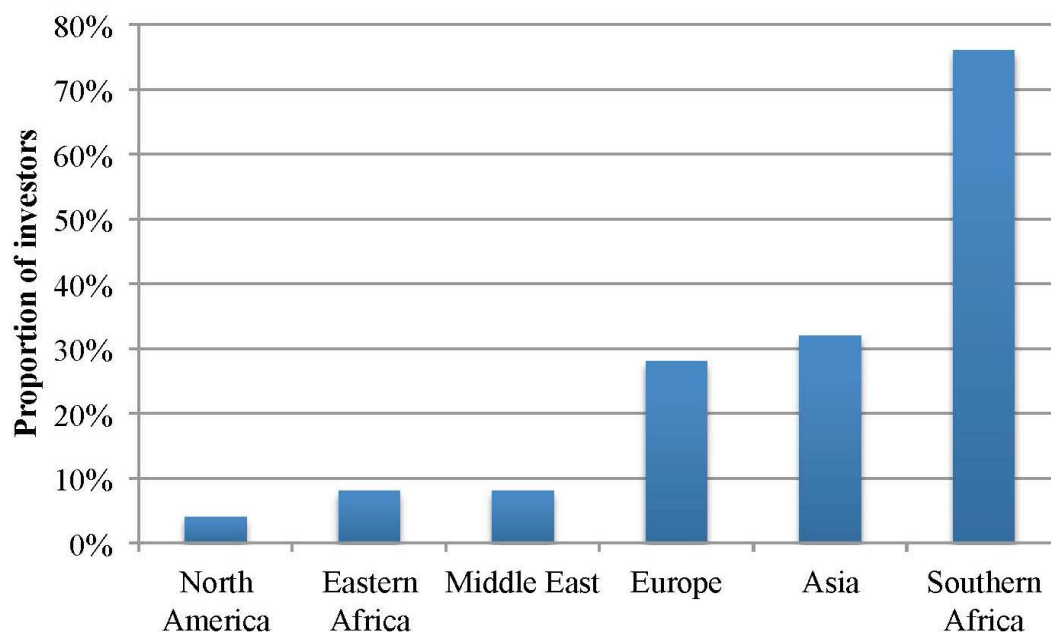


Figure 22. Export markets.

No clear patterns are discernible with regards to exports to the other external markets. Interestingly, none of the Asian investors exported to Asia, but rather focused on the domestic market. In the case of rice, the focal crop for most Asian investors sampled, with Mozambique being a net importer, rice prices consistently exceed those of Asian and global markets. Therefore, if investors are commercially oriented, there are few reasons to export. This also applies to most other staple crops, especially maize.

The types of commodities that are exported tend to be traditional cash crops (e.g. bananas, cotton, macadamia nuts, sugarcane). Most food crops, notably grains, are sold within Mozambique because of the aforementioned price differentials and since offtake markets for those commodities are comparatively well developed (in contrast to some of the cash crops). Of the 30 investments that cultivate and/or source grains, for example, only three exported some of their produce, with 72.4% of these investments even selling only within the province they operate. The most important customers of grain investors are the World Food Program, which purchases grains from 16.7% of grain investors, international grain traders such as Cargill and Export Trading Group (ETG) (16.7%), local retailers (37.5%) and the poultry industry (41.7%).

Rising consumer demand for animal proteins in Mozambique's fast-growing urban centers has, over the past decade, led to a rapid increase in demand for chicken (products). Soymeal, in particular, has, due to its high protein content, become highly valued by chicken growers and hatcheries as feed. As a result, 60% of sampled soy producers sold soy exclusively to the poultry sector, especially to companies such as Frango King, Abilio Antunes, Higest, Mr. Chicken and Novos Horizontes. According to two of these poultry companies and key informants, despite the recent increase in soy cultivation in Mozambique, insufficient quantities of soy continue to

be produced in order to satisfy the feed demands of the domestic poultry sector. Consequently, soy prices in Mozambique like staple food crops systematically exceed world soy prices, thereby making soy a highly attractive crop for both investors and smallholders.

Horticulture crops, with the exception of bananas, are also sold almost exclusively within Mozambique. They are sold as fresh produce in particular to retailers, notably large regional supermarket chains, such as Shoprite. These types of fresh produce retailers tend to demand a diverse selection of products from their suppliers to reduce transaction costs; contributing also to the comparatively large variety of commodities produced by horticulture investors (see also Section 5.2).

6. Social and environmental conduct

This section evaluates investor social and environmental conduct by drawing on the investment survey data. It analyzes the extent to which investments generate displacement of local communities and the practices adopted by investors to mitigate associated socio-economic impacts, the types of initiatives undertaken by investors to contribute to local economic and social development, contribution to local productive integration, environmental management practices, and adoption of voluntary regulatory initiatives.

6.1. Displacement

The 59 investors that are engaged in direct cultivation on average gained access to 9570 ha of land (Table 8). With sampled investors on average having 1981 ha of land under cultivation, 20.7% of the accessed land area was used for cultivation activities at the time of research. Supporting observations in Section 4.3, foreign-led investments (11,398 ha) on average had access to significantly more land than domestic-led investments (3689 ha). Forestry investments on average have access to largest areas of land (56,531 ha) and horticulture investments the smallest (1045 ha).

Table 8. Land ownership (n = 59).

Variable	Value
Average	9,569.5 ha
Standard deviation	22,588.9 ha
Median	1,000.0 ha
Proportion < 1000 ha	42.1%

More than three-quarters of investors secured access to land through DUAT titles, granted as a 50-year state leasehold, either by titling previous untitled lands or by buying a DUAT from other investors (Figure 23). The remaining investors either rented land or secured access through customary arrangements. Rental agreements typically involve renting land from communities, from the state (e.g. in the case of state-owned irrigation projects), or from other commercial DUAT titleholders. Those that access land through customary arrangements tend to be Mozambican investors that are community or political elites and acquired large areas of customary lands through inheritance or through informal agreements with communities and their representatives. Such customary arrangements do not offer the same amount of tenure security; therefore, investors that opt for such arrangements tend to be those where risk of conflict and appropriation is small (e.g. because land areas are comparatively small and they can capitalize on existing social capital and/or political influence).

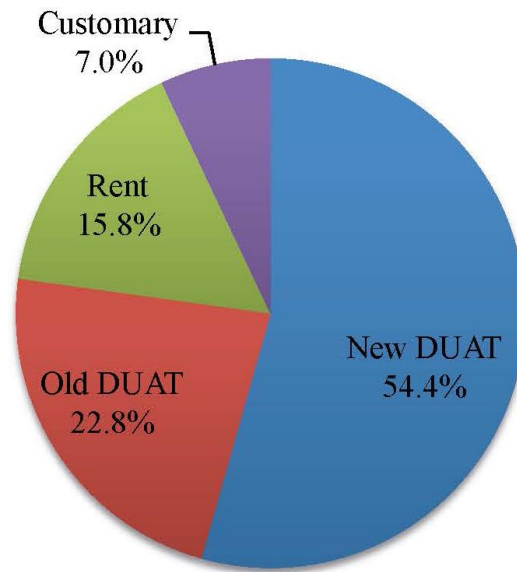


Figure 23. Type of ownership arrangements (n = 57).

Note: Two investors were unable or unwilling to provide information about ownership arrangements. Old DUATs refers to land that was previously titled, while new DUATs refer to land newly titled.

Of those investments that acquired land for cultivation activities, 51.8% conceded that smallholder farmlands and/or settlements were directly displaced (Table 9). Displacement was most prevalent amongst the investors with new DUAT titles, where 83.3% of investments involved some level of displacement (or 86.2% of the sample's total displacement incidences)³. In all these cases, acquired lands originated from the customary land domain. These were, by and large, mosaic crop–forest/shrublands, characterized by smallholder farmlands, typically involving land extensive rotational cropping systems, interspersed by forests and/or shrublands used, in particular, for harvesting non-timber forest products and/or as communal pasture. A number of investments with rented land also resulted in displacement (44.4% of the sub-sample). This primarily involved investments where lands were recently acquired by (and titled in the name of) the government for large-scale irrigation schemes and no investors had previously developed the land. Only one of the investors that acquired DUAT titles or obtained land through customary arrangements reported that displacement occurred. Where investors obtained existing DUAT titles, according to most respondents, displacement typically occurred prior to title acquisition. However, since many of these investors acquired properties that were long abandoned, it is likely that in many cases smallholders had begun to encroach onto those lands, but that new investors were not prepared to acknowledge and/or take direct responsibility for those encroachments since such land occupations are technically illegal.

³These results should, however, be treated with caution. Since few investors undertook systematic assessments of land-use conflicts and some may not be willing to disclose displacement information, it is highly probable that more investments involved displacement than the data suggests. On the ground verification was not undertaken for most projects in the context of this research.

When investors seek to title lands within the customary land domain, investors are required by law to consult and seek the consent of concerned communities. Community consultations were undertaken in 90.0% of such investments, with community consent sought by 79.2% of such investments (Table 9). These procedures were typically not followed by investors that claimed land alienation did not result in displacement. The consultation and consent process typically creates space for negotiations around land alienation conditions, albeit highly subject to rent-seeking practices by community elites. Mozambican land law, for example, does not provide a clear framework or procedure for determining investor responsibilities towards communities in situations where alienations involve loss of access to farmland and socially significant common pool resources (CPR), such as pasture, forest and water resources. Often, traditional authorities and senior government officials (sometimes as silent investment partners) are able to extract individual gains from the alienation process, thereby incentivizing them to pressure communities into consenting to alienation (see for a discussion Fairbairn 2013; German *et al.* 2013; Schoneveld 2013). While this may undermine the representative capacity and neutrality of local elites, the results do suggest that in the majority of cases individual households were compensated for loss of farmland. However, the results do show that the critical role of CPR does tend to be underappreciated, as is the importance of securing adequate replacement lands for displaced households. In some of the cases, it was observed that displacement precipitated intra- or inter-community land conflicts when displaced households attempted to secure access to new land and CPRs.

Table 9. Land acquisition activities undertaken, by land access category.

Type of land access	N	Proportion involving displacement	Consultations	Consent	Compensation farmland	Compensation CPR	Replacement land
New DUAT	30	83.3%	90.0%	79.2%	68.0%	12.5%	3.3%
Old DUAT	13	7.7%	53.8%	33.3%	7.7%	7.7%	0.0%
Rent	9	44.4%	66.6%	44.4%	33.3%	0.0%	0.0%
Custody	4	0.0%	0.0%	25.0%	0.0%	25.0%	0.0%
Total	56	51.8%	72.7%	41.3%	47.9%	11.1%	1.8%

Note: Three investors were unable or unwilling to provide information.

As can be observed in Table 9, investors that are not directly responsible for displacement (e.g. those that acquired existing DUATs or are renting land) often do undertake community consultations and in some cases seek out community consent. The veracity of these engagements is though questionable since communities and their representatives have no real bargaining power in these contexts. Rather, such engagements should be interpreted as sensitization activities to enhance buy-in of local communities; company–community relations strained by unresolved conflicts could jeopardize operational freedom and ability to source labor locally.

While most investors do exhibit an interest in fostering cordial host community relations, few investors account for land-use conflicts in the site selection process. For example, the majority of investors (54.4%) prioritized agro-ecological conditions such as climate and soil quality when selecting their investment location, followed by proximity to offtake markets, quality of physical infrastructure, and proximity to transportation hubs (Table 10). Only 14.0% of investors claimed to that conflicts with existing socially and environmentally significant land uses were considered in their decision-making process. For example, 12.3% of respondents accounted for conflicts with land used by local populations and 5.3% for conflicts with existing forest cover. Instead, the site selection criteria adopted point to a narrow focus on agronomic and economic criteria.

Table 10. Priority criteria for site selection (n = 59).

Reason	% sample
Agro-ecological conditions	54.4%
Proximity to offtake markets	29.8%
Quality of physical infrastructure	26.3%
Proximity to transportation hubs	24.6%
Good relations with local administration	14.0%
Availability of labor	12.3%
Limited conflict with human land uses	12.3%
Proximity to other investors	7.0%
Good relations with local elites	7.0%
Limited conflicts with forests	5.3%
Availability of social infrastructure	3.5%
Other	14.0%

6.2. Host community social and economic development

Initiatives to develop host communities economically – in contrast to more impact mitigation oriented activities discussed above – were undertaken by 83.9% of investors. Investors with new DUAT titles were more inclined to adopt such initiatives, with 93.1% of investors adopting one or more initiatives (Figure 24). Only 61.9% of investors that acquired existing DUATs, rented land or accessed land through informal arrangements, on the other hand, were found to be undertaking local economic development activities (Figure 25). This consisted largely of activities integral to the investment business strategy (e.g. sourcing), rather than more corporate social responsibility (CSR) oriented activities. In contrast, most investors with new DUAT titles adopted preferential hiring policies, offered communities access to inputs for free or at concessionary rates (notably machinery, improved seed varieties and fertilizers) and/or offered (predominantly technical) support to host communities in order to promote the uptake of alternative livelihood activities. Some of these investors also established and contributed to community development funds and paid periodic royalties to host communities over revenues generated. Investors with new

DUAT titles, however, were less inclined to engage in local sourcing practices than the other land-based investors, although this difference is not statistically significant.

Only 30% of investors that did not acquire land for direct cultivation activities and relied exclusively on third party sourcing activities (10) undertook any local economic development activities other than sourcing.

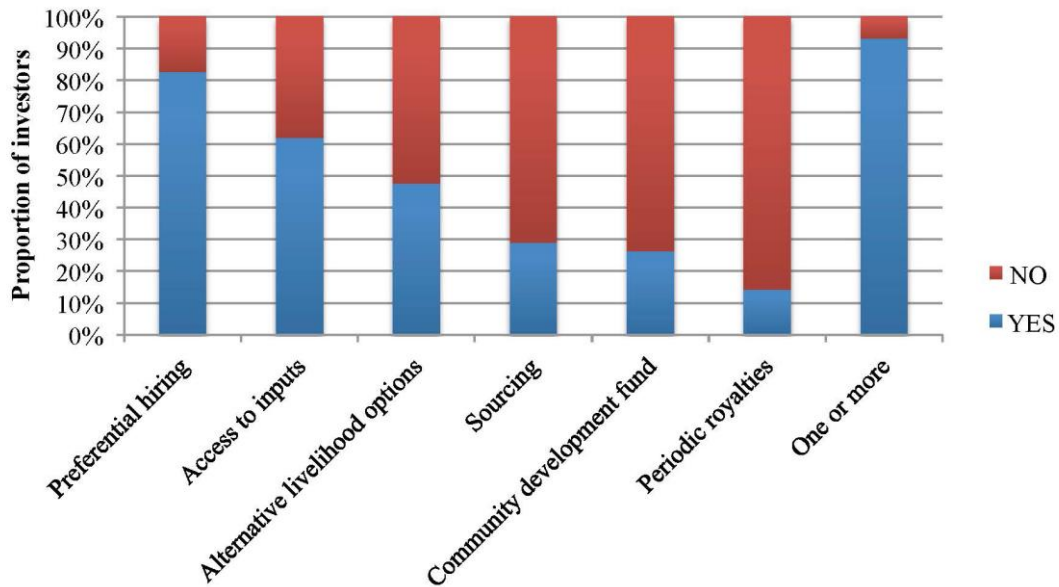


Figure 24. Local economic development activities undertaken by new DUAT titleholders.

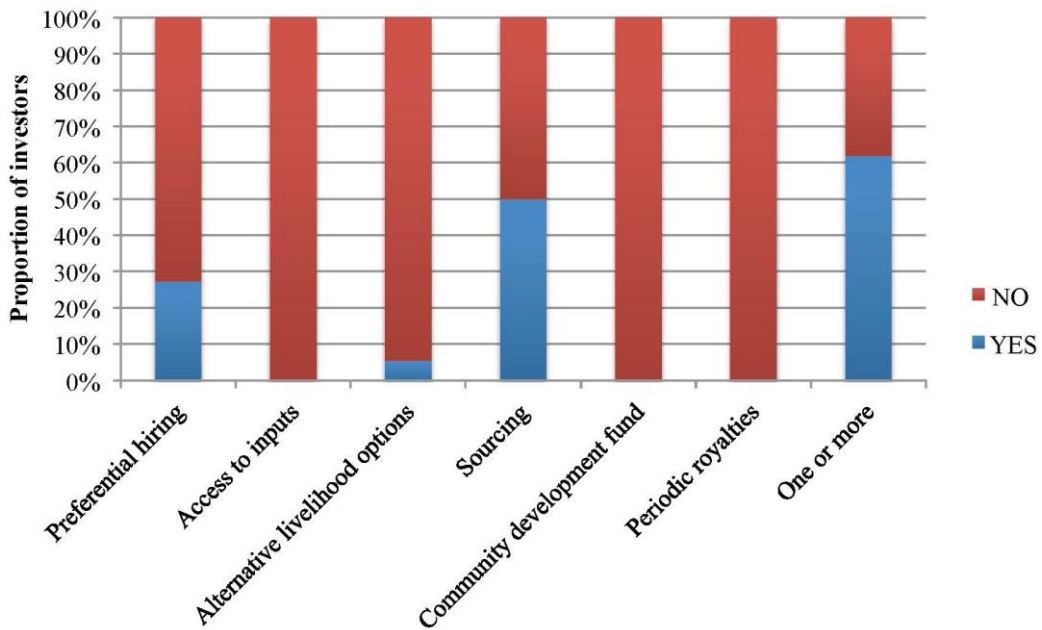


Figure 25. Local economic development activities undertaken by other titleholders.

Similar patterns can be observed when evaluating investor contributions to community infrastructure development. For example, 76.7% of investors with new DUAT titles contributed to the construction of schools, boreholes, roads (other than those developed for investment purposes), medical facilities and/or the extension of the electricity grid (Figure 26). In contrast, only 33.3% of other types of landholders (Figure 27) and 20% of those engaged in sourcing only contributed to infrastructure development. The difference in mean number of both local economic development and infrastructure development activities undertaken by new DUAT investors and the other investors is statistically significant (Annex Table A2).

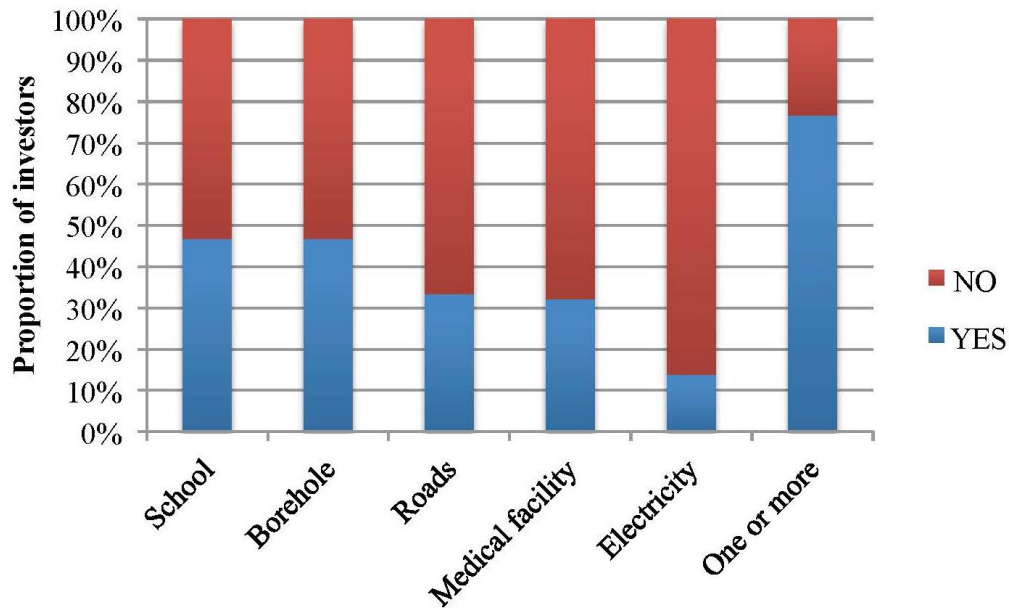


Figure 26. Infrastructure development activities undertaken by new DUAT titleholders.

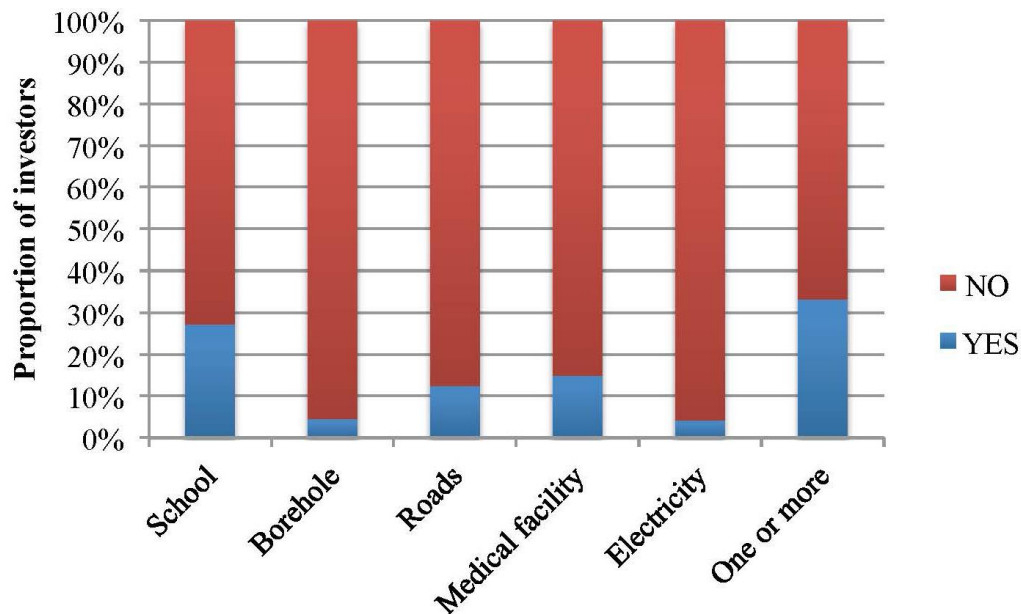


Figure 27. Infrastructure development activities undertaken by other titleholders.

The differences in the number of economic and social development activities between investments with new DUAT title and the other investments can be attributed in part to the negotiation space afforded by the customary land alienation process. Investors claimed that most adopted activities were pre-conditions for alienation. Many of the other investors that, for example, bought existing DUATs or rented land were less likely to take on local development obligations since responsibilities to that effect were typically ascribed to either the previous DUAT titleholder or the renter. Clearly, land access mechanisms and (responsibility for) displacement strongly shapes the extent to which investors internalize community development responsibilities and are committed to amiable company–community relations more generally. This is, for example, also reflected in the number of investments that recruited community liaison officers: 83.3% of new DUAT investors compared to 41.7% of other investors.

A statistically significant difference was also observed between the mean number of local economic development initiatives undertaken by developed and developing countries investors (Annex Table A2), with developed country investors on average undertaking almost twice as many initiatives as developing country investors. Moreover, the business model also explains differences between investors, with investors with hybrid plantation–sourcing businesses adopting more local economic development initiatives than those adopting plantation only or sourcing only business models. Additionally, investors that obtained finance from non-commercial financiers also outperformed investors without such financing. These differences could however not be established with regards to infrastructure initiatives.

6.3. Productive integration

Investors directly contributed to the productive integration of local populations into their investments through either the generation of new employment opportunities or the sourcing of commodities from smallholders. In terms of employment, the 67 investors that could provide employment information generated jobs for 26,980 persons (Table 11), equivalent to approximately 403 jobs per investment. As would be expected, investors adopting hybrid business models (e.g. involving both plantation activities and sourcing) generated the most jobs (813 jobs per investment), followed by plantation only investments (278) and sourcing only investments (76).

Table 11. Employment generation.

Type of employee	Number	Proportion total
Formal	7,759	28.8%
Casual	19,221	71.2%
Women	9,092	33.7%
Expatriates	506	1.9%
Total	26,980	

Expatriate employees comprise approximately 1.9% of the total labor force. In most investments, these were typically recruited into managerial and administrative

positions. However, a China-led rice investment accounted for 320 of the 506 employed expatriates (63.2%). In contrast to other investments, most of these expatriate employees were primarily responsible for manual labor activities.

Women comprised approximately one-third of the total labor force (33.7%). Significant regional variations could, however, be observed with respect to women's integration. For example, 48.6% of the total labor force employed through investments located in the southern provinces of Maputo and Gaza were women, compared to 26.7% of the labor force employed in the central and northern provinces of, for example, Nampula, Zambezia, Manica and Niassa. A stronger cultural taboo towards female employment prevails in the central and northern provinces than in the south, reportedly deterring women from pursuing employment and, in some cases, investors from recruiting women for fear of generating social conflicts. This can partly be attributed to a long history of labor migrations in the south, where many rural households are accustomed to working seasonally in, for example, the South African mines.

In regards to types of employment opportunities generated, the most accessible form of employment appears to be casual, comprising 71.2% of the total labor force. Depending on the crop, these employment opportunities typically tend to provide between 3 and 6 months of work; often, for labor intensive and menial seasonal activities (e.g. harvesting and weeding). Casual laborers are generally preferred by investors for most menial tasks since this reduces the costs and administrative burden associated with formal contracting. Although fixed-term contracts are legally required for this type of employment, in practice verbal agreements govern casual labor relations.

Formal employment tends to be available primarily for security, technical, administrative and management positions. This tends to involve full-time permanent contracts, since Mozambican labor law forbids the use of fixed-term contracts for permanent tasks. These types of positions are, however, inaccessible to much of the local population since relevant prior experience tends to be required. Therefore, most formal positions, with the exception of security, are taken by persons from outside nearby communities. Because of their seasonal character, many casual jobs are used to supplement, rather than substitute for, traditional livelihood activities. However, since the most labor-intensive months at plantations typically coincide with the most labor-intensive months on smallholder farmlands, they provide opportunities in particular for underutilized household labor, such as youths.

The relative number of jobs created was found to differ according to the primary crop adopted. For example, investors focusing on horticulture crops on average generated one job for every 0.77 ha planted, including casual jobs (Table 12). Timber, rice and soy investments, on the other hand, which tend to rely heavily on mechanization (see Section 5.3), on average generated one job for every 9.75, 2.98 and 2.29 ha planted, respectively.

Table 12. Labor intensity, by focal commodity type.

Type of commodity	Hectares per formal worker	Hectares per job
Horticulture	2.35	0.77
Maize	3.88	1.44
Sugarcane	3.12	1.46
Soy	5.59	2.29
Rice	6.41	2.98
Timber	17.3	9.75
Average	10.4	5.10

In terms of employment conditions, casual and menial permanent laborers on average earned MZN 2293 (Mozambican metical) and MZN 3187 per month, respectively (Figure 28)⁴. Permanent technical and managerial laborers on average earned MZN 16,358 per month. For permanent jobs, all companies paid at least the statutory minimum wage in the agricultural sector at the time of research of MZN 2500 (this is set annually by the government). For casual labor, the majority of investors paid a daily wage of between MZN 50 and 90, illustrating the high degree of informality associated with such positions. Salaries differ significantly between investors, with northern investors on average paying 73.4% more than investors from other countries (Annex Table A2).

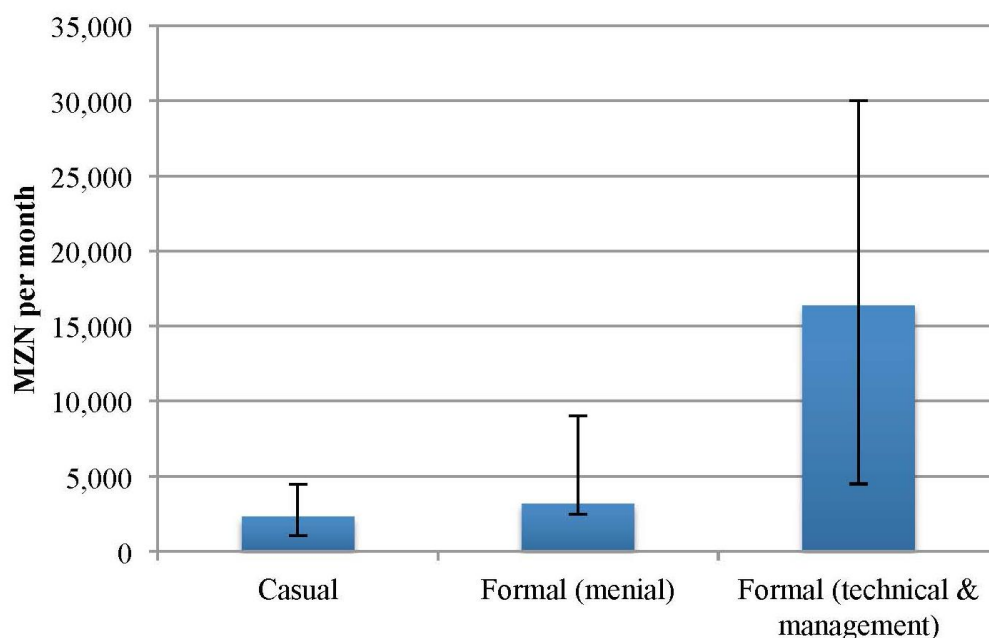


Figure 28. Average monthly wages by job category.

⁴Wages are equivalent to USD 50.7, USD 70.5 and USD 361.9 for casual, menial permanent, and technical and management permanent jobs, respectively (Based on a 15 November 2015 exchange rate of MZN 45.2 per USD 1). For casual laborers, monthly salaries are based on a daily wage multiplied by 21 days of work per month.

Secondary employment benefits are offered only for formal fixed-term and permanent contracts. Besides the mandatory statutory benefits such as annual and maternity leave, severance pay and employment insurance, 68.1% of investors provided discretionary benefits. This consisted, for example, of food, transportation, housing, medical care and medical insurance (Figure 29). Those investors that were generating a profit were inclined to offer more secondary employment benefits than those that were yet to become profitable (Annex Table A2).

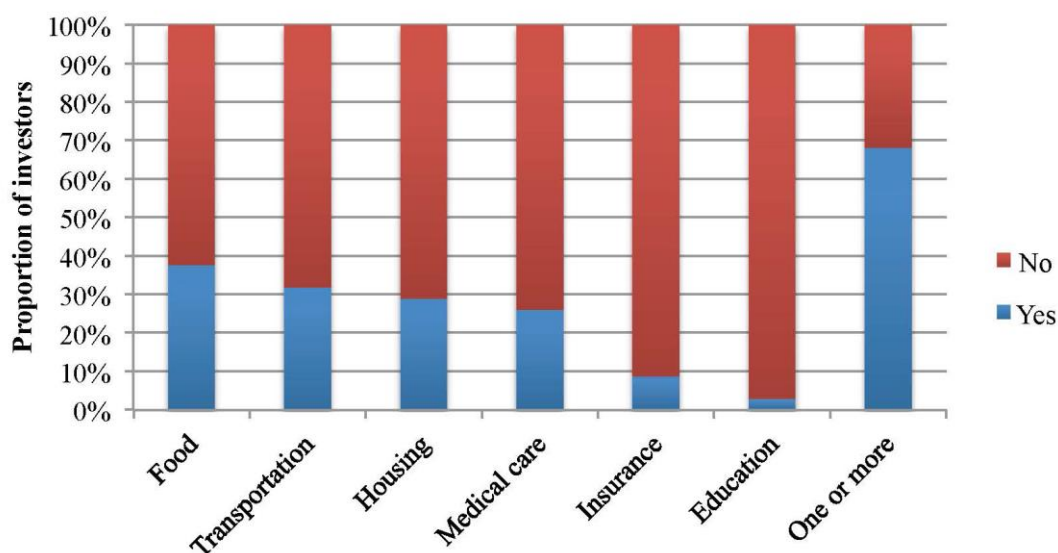


Figure 29. Types of secondary discretionary employment benefits for formal contracts.

The companies that were engaged in contract farming activities collectively contracted at least 137,211 smallholders, equivalent to an average of 8569 contracted smallholders per investor⁵. The difference between these investors in terms of the numbers of smallholders contracted is significant, with the four investors contracting farmers for seed cotton accounting for 84.9% of total contracted smallholders (with an average of 34,302 contracted smallholders per investment). The non-cotton contract farming investors on average contracted 1,724 smallholders. Since cotton contract farming operates through a concession system (see Section 5.4), the risk of default is considerably smaller, thereby enabling such investors to contract significant larger numbers of smallholders (e.g. since transaction costs associated with monitoring is reduced).

⁵One of the 17 contracting farming investors was not able to provide reliable data. Most investors engaged in open market sourcing arrangements did not systematically monitor the number of smallholders that supplied them and were, therefore, unable to provide information.

6.4. Environment

Most of the land accessed by investors was previously used for agricultural purposes (Figure 30). For example, 46.8% characterized the lands they were developing as previously being predominantly forest–farmland or shrub–farmland mosaics, 24.2% as predominantly commercial farmlands and 9.7% as predominantly smallholder farmlands. The mosaic landscapes are typically those where smallholder farmland – primarily through the use rotational cropping system – is interspersed by open and closed woodlands or shrublands and fallowed lands with herbaceous and woody regrowth. These are typically highly heterogeneous landscapes that provide a host of important social and environmental services. Those lands previously used predominantly for commercial agriculture are those developed by investors that acquired existing DUAT titles. Investors developing lands previously used predominantly as smallholder farmland are typically located in areas with comparatively high population densities, where land constraints have led to a transition from land extensive rotational cropping systems to more intensive permanent production. Approximately 17.8% of investors are developing lands without any declared prior agricultural land uses; this being either semi-intact forest or shrubland.

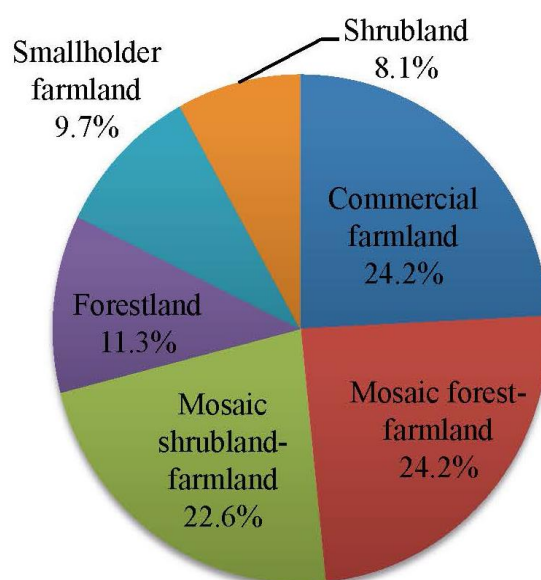


Figure 30. Dominant *ex ante* land use.

In all, 75.1% of investments involved a declared conversion of natural habitat, albeit in the majority of cases subject to some degree of degradation due to the presence of land-extensive smallholder production systems. Only 8.1% of investors claimed that titled lands encompassed only shrublands; the land use category of, arguably, least environmental and social significance. In order to conserve environmentally significant land uses and lands particularly sensitive to degradation, 75.6% of these investors implemented at least one or more conservation measures, in contrast to 33.3% of investors that acquired lands previously used predominantly for commercial or

smallholder agriculture. Typical conservation measures adopted in order of prevalence are the preservation of environmentally significant tree species, the creation of riparian buffer zones, the conservation of high conservation value areas and the avoidance of steep terrain and/or fragile soils (Figure 31). Forestry investments were most inclined to adopt such measures since many are a requirement for certification under the Forest Stewardship Certification (FSC) (see also Section 6.5).

Other environmental management activities undertaken by investors include the adoption of environmental monitoring systems that, for example, monitor pollution and agro-chemical use, application of soil erosion techniques, recycling wastes, adoption of integrated pest management systems and the implementation of mechanisms to control pollution (Figure 31). In total, 77.6% of investors undertook at least two environmental management activities.

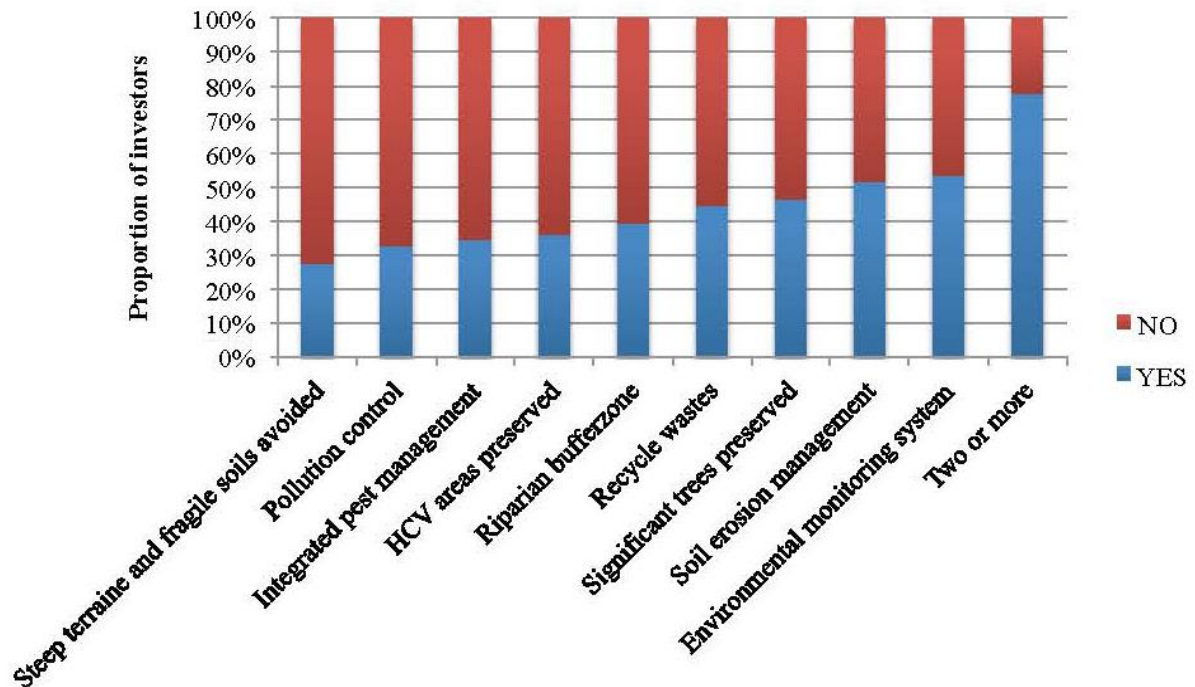


Figure 31. Types of environmental management measures.

Statistical analysis suggests that the number of total environmental management activities adopted is positively correlated with the area of land the investor has developed and whether or not they intended to seek certification under a voluntary certification schemes with environmental and social compliance criteria (Annex Table A2; see also Section 6.4). Although investors that developed lands that formerly encompassed natural habitats and/or adopted FSC are more inclined to adopt conservation measures, no statistically significant difference is discernible when aggregating all environmental management activities. This would suggest that environmental performance is not necessarily a function of *ex-ante* land use, but rather partly one of operational scale since the environmental footprint of investment tends to increase the more land is brought under production. Since this could

adversely impact productivity and have negative community spillover effects, investors are consequently likely more inclined to pay attention to environmental impact mitigation as their scale of operation increases. Moreover, investors that had already certified or were in the process of certifying their operations under a voluntary certification scheme, on average adopted more than twice as many environmental management activities as investors without immediate plans to that effect (5.0 compared to 2.49).

While it could be expected that opportunities created through investments in contract farming and open market sourcing would encourage many smallholders to expand their area under cultivation and thereby create additional land use pressures (e.g. on forests), methods employed in this research do not allow for such an analysis. Nevertheless, it should be noted that in none of the 30 investments involved in sourcing were smallholders required to adopt environmentally responsible production practices.

6.5. Strategic integration of sustainability norms

Although most investors adopt activities to manage the social and environmental impacts of their operations, in only a small proportion of cases are sustainability considerations explicitly integrated into corporate and business strategies. For example, only 13 investors (18.8% of the sample) adopted one or more self-regulatory policies or strategies associated with CSR, impact mitigation and/or occupational health and safety (Table 13).

A total of 23 investments had adopted and/or were in the process of adopting formal product quality and sustainability standards through either internationally recognized standards systems or through customer specific standards. Adoption rates were highest for the FSC and GLOBALGAP voluntary certification schemes. All but one forest plantation investments either had certified or were in the process of certifying their operations under FSC, which requires that investor forest management activities conform to 10 social and environmental criteria and associated indicators. While the domestic market currently does not demand FSC certification, many large northern consumers have begun to source only FSC-certified products. Although many forestry operations are yet to export – and will only do so once domestic markets are saturated – investors do acknowledge that long-term international market access will be strongly shaped by FSC compliance. Most forestry investors also claimed that the Mozambican government demanded that certification be pursued as a condition for approving their investment license.

GLOBALGAP, the most adopted global farm certification scheme – demanded by most major consumers of commodities used for human consumption in Europe – was implemented or being implemented by eight investors. All but one were cultivating botanical fruits, five of which were bananas. Across Europe, in particular, GLOBALGAP is demanded by most large consumers of food crops for human consumption to ensure good agricultural practices are adopted. This pertains, for example, to environmental practices, labor conditions and food safety. All GLOBALGAP producers target export markets, highlighting, like FSC, the

importance of end-markets in driving certification. Most of these producers are currently exporting to South Africa, where the passing of the 2008 Consumer Protection Act has vested in consumers' rights to demand accountability from suppliers for, amongst others, food safety. As a result, major retailers, such as Shoprite and Massmart, have begun to demand proof of compliance with recognized food safety standards. This also applies to the adoption by sampled investors of other food safety standards such as International Food Standard (IFS) and ISO 22000.

In total, 26 or 37.7% of the sampled investors adopted and/or were in the process of adopting one or more soft regulations that govern their production activities. Only three companies adopted self-regulatory strategies without (plans for) formal certification. This suggests that the adoption of self-regulatory initiatives is intimately tied to certification, with self-regulatory strategies typically encapsulating and strategically integrating the demands of certification.

Table 13. Types of voluntary regulatory initiatives adopted.

Scheme	Implemented	Planned	Total
Self-regulatory			
Impact mitigation strategy	2	0	2
Occupational health and safety plan	6	0	6
CSR policy	11	0	11
Companies with one or more	13	0	13
Sustainability & product quality standards			
PEFC	0	1	1
FLO-Cert	0	1	1
IFS	1	1	2
ISO 9001	1	0	1
FSC	1	5	6
FLA	1	0	1
ISO 22000	1	0	2
ISO 14001	2	0	2
GLOBALGAP	2	7	9
Customer specific	3	0	3
Companies with one or more	11	14	23
Total Companies with one or more	17	14	26

The adoption rate of soft regulations does not appear to be influenced to any significant extent by investor origin. As discussed above, the disproportionately high adoption rates among banana and forestry investments instead suggest adoption is more strongly shaped by the commodity and its (planned) end-markets. Therefore, the strategic integration of sustainability norms tends to emanate from commercial rather than philanthropic considerations, as van Westen *et al.* (2013) also observed. For example, of the 26 investors adopting soft regulations, 57.6% claimed that this was primarily motivated by demands of the end-market/major consumers. Another 34.6% claimed that adoption was primarily motivated by corporate strategies to position themselves as responsible investors.

Only one (3.8%) of these investors claimed that adoption was a condition for obtained debt or grant financing.

As also highlighted in Section 6.3, since investors that seek to comply with certification systems tend to adopt a greater number of environmental management practices, certification does appear to play an important role in augmenting corporate environmental performance. However, no statistically significant mean differences could be identified with regards to the social indicators (e.g. secondary employment benefits, investments in social infrastructure, local economic development activities). Rather, the land acquisition process tends to more meaningfully shape social performance than certification. While the cost of complying with certification requirements could deter investors from engaging smallholders that lack compliance capacity, investors pursuing certification were not found to be less inclined to source through smallholders than investors that had no plans for certification.

7. Synthesis

This working paper sought to contribute to a more nuanced debate on commercial agricultural investments in Mozambique by identifying and analyzing agricultural investment trends and characteristics and factors that shape investor social and environmental conduct. This section synthesizes findings on these topics from Section 4, 5 and 6.

7.1. Investment trends and characteristics

Analysis of official investment data illustrates that while the onset of the food and energy price crises in 2007 triggered investor interest in Mozambique's agricultural sector, this did not subside as a result of the global economic downturn in the late 2000s, as has been commonly assumed. Rather, over the 2010s, a steady increase in the number of agricultural investment commitments was observed. While the biofuel sector is widely considered to be a leading driver of agricultural investment in Mozambique, in reality, biofuel investments comprise only a small proportion of total investment approvals, with those investments that were approved experiencing disproportionately high failure rates. Instead, the data shows that the majority of investors are articulated primarily to food end-markets through either grain or horticulture crops. Considering that investors typically sell their products exclusively on the domestic market and many even only within the province they operate, findings highlight the attractiveness of the Mozambican market for most food crop investments since prices on the domestic market systematically exceed those on international markets. Therefore, the assumption that (particularly foreign) investors are primarily responding to opportunities within their home market does not hold up to scrutiny in Mozambique.

These findings suggest that most commercial agricultural investors do contribute to national and sub-national food security. However, survey results show that a number of grain producers have begun to sell their produce to the rapidly growing domestic poultry industry for animal feed. Although the emergence of new profitable end-markets allows investors and smallholders to diversify and expand their customer base, the apparent diversion of nutritious food crops such as soy to other end-markets does partly undermine their potential food security contributions.

Though small in number compared to investments in the agro-food sector, the plantation forestry sector has in recent years also begun to play an important role in Mozambique in terms of both the area of land they occupy and the amount of capital pledged and invested. These investors are currently only targeting the domestic timber market due to the large unfulfilled demand for, for example, building materials and transmission poles. However, export markets and diversification into electricity generation does figure in the long-term business strategies of some once domestic timber markets become saturated.

Contrary to popular perception, the role of BRICS and Gulf State investors is comparatively small in Mozambique, with investors from neighboring countries, such as South Africa and Zimbabwe, and Northern countries, such as Portugal and the UK, accounting for the majority of foreign investment. While analysis of land-titling data from

Nampula and Zambezia (where foreign-owned entities control approximately half of the land area titled for commercial agriculture) shows that foreign investors are increasingly prominent commercial landholders, it also shows that in absolute numbers domestic commercial agricultural investors are considerably more prevalent than official national investment data suggests. This illustrates that increasing agricultural investment in Mozambique is equally attributable to smaller Mozambican investments.

Investment funds are also not involved to the anticipated extent in the sector, nor do foreign banks and non-commercial financiers such as international financial institutions and challenge funds play a prominent role. Rather, most investments are incorporated as privately owned companies without any formal affiliation to any other corporate entities or financing vehicles. Most of these companies raise funds from private individuals, often the investment initiators, who commit their own capital to the venture in exchange for equity shares. Since institutional investors have a negligible stake in the sampled investments, with most investments relying predominantly on self-financing, there are few external investment stakeholders that could influence investment practices.

While the national investment data does not yield insights into the business models employed across Mozambique, the survey data suggests that most investors do focus their production activities around plantations. Nevertheless, with almost half the investments sourcing commodities externally, many investments do provide new market opportunities for smallholders. The majority of these sourcing relationships are organized through formal offtake contracts, though an increasing number of investments are opting for more open market sourcing arrangements. The prevalence of side-selling, partly due to the absence of effective contract enforcement mechanisms, is causing some investors to abandon contract farming and deterring others from experimenting with contract farming schemes altogether. This is especially evident for grains that are traditionally cultivated by smallholders since the risk of side-selling is comparatively high in these markets due to the abundance of alternative offtake opportunities.

For those investors that are producing through their own plantations, most use production inputs, irrigation and machinery. As is illustrated by the comparatively high yields realized by investors for common grain crops, the adoption of intensive production practices does translate into enhanced agricultural productivity in Mozambique. Since the majority of investors engaged in contract farming also provide contracted smallholders with improved seeds, fertilizers and technical support, such investors also contribute to enhanced smallholder access to inputs and therefore productivity.

7.2. Social and environmental conduct

The data suggests that the majority of agricultural investments establish their plantations through the titling of land within the customary land domain. Because the Mozambican land law requires investors to consult and seek the consent of affected communities when community lands are acquired, communities, typically through their traditional representatives, are often able to define land alienation conditions. In most cases, such conditions include the payment of compensation for displacement and the contribution to community economic and social development through, for example, the adoption of preferential hiring policies, the provision of production inputs at concessionary rates and the construction of schools and boreholes. However, investors that access land by, for

example, renting or purchasing lands already titled for commercial agricultural purposes were found to be significantly less inclined to comply with responsible land acquisition procedures or to invest in community development activities. When investors rent land, for example, responsibilities towards host communities tend to lie with the titleholders, while when investors purchase land that is already titled, the Mozambican land law absolves investors from any direct responsibility by rendering land users within the titled lands as illegal occupants. Because investors are absolved from legal responsibility in these situations, they are less compelled to respond to the needs of host communities.

Since investments led by investors originating from Northern countries on average adopt significantly more local economic development initiatives and pay significantly higher wages than investors from other countries, investor origin also appears to shape social conduct. Since Northern investors do not differ significantly from other investors in terms of market orientation, adoption of voluntary certification systems, sources of finance, or amount of capital invested, controlling for mediating commercial variables does not explain differences in social conduct between Northern and other investors. This suggests that Northern investors are intrinsically more inclined to invest in a socially responsible manner than domestic and developing country investors.

Differences in environmental conduct, however, cannot be explained by investor origin, but rather by prior land use, area of land developed, and adoption of voluntary certification schemes. A third of the sample was certified or was in the process of certifying their operations under a voluntary certification scheme; most of which require that investors comply with good environmental management practices. Certification was largely motivated by commercial objectives, with most investors pursuing certification indicating that this was motivated by the requirements of major customers and/or regulations in export markets. Certification did not, however, appear to influence investors' social conduct since the commonly adopted schemes with environmental criteria and indicators, with the exception of FSC, only give minor treatment to social issues. For example, GLOBALGAP requires good labor conditions, but makes no reference to customary land rights or local economic development issues. Only FSC requires that the principles of free, prior and informed consent (FPIC) are followed and that investors invest in social impact mitigation and community development. However, since the FSC procedural requirements are also mandatory in Mozambique, which creates a negotiation space that enables communities to demand the adoption of local development initiatives, most investors that obtain new land titles meet or exceed most FSC criteria (e.g. implying that investors pursuing FSC certification, all of which with new land titles, do not outperform other investors with new land titles). Thus, the Mozambican regulatory regime for new title applications has a stronger effect on social conduct than certification. Albeit not captured in the study's sample, since under many certification schemes legally extinguished claims are rarely treated as legitimate land claims requiring FPIC, certification is unlikely to augment the social performance of investors that acquired previously titled lands.

Social and environmental conduct did not appear to be shaped strongly by external investment stakeholders such as financiers, with only one investor adapting their social and environmental practices in response to the demands of institutional investors or creditors. However, with more than one-fifth of investments obtaining finance from entities with a development mandate, there certainly is a noteworthy contribution of these types of capital sources to the successful establishment of investments that have the potential to make a

substantial development contribution, as is reflected in the significantly higher adoption rates of local economic development activities by such investors. Although such financiers do not appear to have any significant influence over the conduct of investments they finance, by selecting those investments with responsible business plans they do likely contribute to upscaling investments that would otherwise not be attractive to conventional financiers.

Although the investment-centric approach of this study does not permit for a more detailed evaluation of how investor practices and business models translate into impacts on the ground, some insights can be gained from the data. For example, since three-quarters of investments acquired lands that contained natural habitats, with only a small proportion comprising shrublands, even though some investors do adopt conservation measures, most agricultural investments are established through the conversion of some of these habitats. Moreover, since the majority of investments also involve the displacement of smallholder farmlands and CPR, they too often generate negative social impacts. Although many investors provide compensation for loss of access to such resources and adopt mechanisms to develop host communities, many likely lack the necessary capacity and resources to guarantee the full rehabilitation of affected persons. Since few investors support affected persons by offering replacement lands, many displaced persons will seek out new lands elsewhere. In the absence of developed land markets, this tends to involve the conversion of unused lands elsewhere. Not only could this exacerbate the rate of conversion of natural habitats for agricultural production it also threatens to enhance local land scarcity.

The abundance of investments in mosaic landscapes also highlights that the establishment of many plantations simultaneously generates both negative social and environmental impacts, since efficiencies can be realized when plantations are established on contiguous areas of land. Some investments, however, face complicated predicaments in relation to social–environmental trade-offs in such landscapes. For example, for many forestry investments, the FSC does not permit conversion of most natural forests; this then encourages such investments to target non-forestlands for plantation establishment, which tends to lead to disproportionately high rates of displacement of smallholder farmland. Conversely, some investors may seek to minimize compensation payments by instead prioritizing the development of natural habitats.

The negative social impacts are partly offset by employment opportunities on investor plantations. However, since the vast majority of employment was found to be of a highly casual and seasonal nature, most accessible forms of employment are too insecure to adequately substitute for traditional livelihood activities. This is especially the case for forestry and grain investments where labor intensity is comparatively low. Moreover, land under plantation production systems appears to directly support significantly fewer households than under smallholder production systems: for example, the average Mozambican farming household uses 1.8 ha of land, while the sampled investors only generate one formal full-time job for every 10.4 ha planted. Therefore, in Mozambique the conversion of land within most mosaic and smallholder-dominated landscapes to most types of plantations is unlikely to generate sufficient direct local economic gains to offset losses from displacement.

The most important societal gains are arguably generated by investments that productively integrate smallholders. Not only does sourcing from smallholders reduce the need to displace socially and environmentally significant land uses, it enables smallholders to gain

improved access to offtake markets and, when organized through contract farming relations, to production inputs. The data suggests that the average contract farming scheme provides direct opportunities to more than four times the number of smallholders than plantations do through employment generation, without incurring any of the costs associated with smallholder displacement. Moreover, with some contract farming schemes supporting smallholders in titling their lands, such schemes could also provide avenues for increasing land tenure security. Since many smallholders integrate crops sourced by investments into existing farming systems, the environmental footprint of such business models is likely considerably lower. Since increased access to inputs enables smallholders to enhance their productivity, contract farming investments could also hypothetically enable smallholders to enhance their output without having to resort to bringing new land into production or even by enabling the abandonment of inefficient shifting cultivation practices. Conversely, new commercial opportunities may compel smallholders to increase their land under production, especially when household labor constraints can be overcome through increased availability of financial resources to hire labor. These types of land use dynamics have, however, not been thoroughly researched, though deserves more attention by scholars in future.

8. Conclusion

Mozambique has experienced a marked shift in agricultural policy discourse in recent years. The Mozambican government is increasingly departing from the liberal pro-investment policies of the 2000s in recognition that commercial agricultural investments often fail to adequately engender broad-based growth and generate the purported trickle down benefits. Emerging discourse instead acknowledges the need for greater state interventions in the sector in order to overcome the structural market failures that impede smallholder development. Although a more cautious approach to commercial agricultural investment has become apparent as a result, due to the lack of supporting evidence and internal politics there still lacks a unified and coherent vision on how best to capitalize on and ameliorate the risks of investment. This paper has generated a number of important insights in support of a more evidence-based agricultural investment policy.

One important finding is that, contrary to popular perception, most investments target domestic food markets and therefore make meaningful contributions to national food security, internalizing the benefits of increased productivity. This suggests that committing resources to the introduction of fiscal incentives to promote investments in priority sectors and export controls to curb exportation of staple crops is likely unnecessary. Balancing macro- and micro-level policy objectives though remains a challenge. Since most investments involve the development of plantations through the conversion of smallholder farmlands and/or natural habitats, environmental and social costs are high.

From a social perspective, findings suggest that investors are more inclined to invest in impact mitigation and community development when a legitimate space is created to negotiate on establishment conditions (e.g. during the land-titling process). This illustrates that the social responsiveness of investors can be increased if such spaces are further institutionalized and extended to all investment establishments, irrespective of how land is accessed. This could be complemented by the development of community engagement protocols that serve to further reduce the likelihood that investors and local elites exploit differences in bargaining power.

From an environmental perspective, while certification does not appear to enhance social responsiveness, it does play an important role in stimulating the adoption of good environmental management practices. By, for example, making investment license approvals (especially for large investments located in environmentally sensitive areas) conditional on the compliance with certain types of certification schemes, not only would corporate environmental performance be enhanced, it would also privatize compliance monitoring, thereby alleviating the burden on under-resourced Mozambican environmental monitoring agencies.

Ideally, such impact mitigation mechanisms should be made redundant by mechanisms that limit the initial social and environmental risk profile of plantation-based investments. With findings, for example, suggesting that social and environmental land use conflicts rarely figure as investor land selection criteria – as is

also evident by the small number of investments being established in shrubland areas of comparatively low social and environmental significance – measures could be introduced in the land-titling process to ensure that only those lands are titled for commercial agriculture that meet established social and environmental criteria. Although the Mozambican land zoning exercise could contribute to this, such initiatives are often too static and reliant on remote sensing to capture the complex land use dynamics typically observed on the ground. Therefore, employing independent evaluators to determine whether social and environmental criteria are met on a case-by-case basis would more meaningfully contribute to reducing the risk of land use conflicts.

Arguably, the most effective way to minimize the social and environmental risks of agricultural investment and leverage investment in support of Mozambican policy priorities is to more actively promote and provide support to investments in smallholder inclusive business models. Findings, however, show that in practice many investors are abandoning or downscaling contract farming schemes (and thereby their investments in smallholder productivity) because of rampant side-selling by smallholders. Government could more actively aim to restore confidence amongst contract farming investors by, for example, regulating pirate buying practices, promoting codes of conduct for buyers, investing in the sensitization of smallholders and providing more comprehensive contract enforcement support.

However, since many public authorities face capacity constraints and political disincentives to provide this type of support, concessionary systems adopted in the cotton and tobacco sector should be considered for other strategic crops; especially for those that experience a high rate of side-selling, but where substantial productivity gains can still be achieved through improved input access (e.g. maize, rice, soy). For some crops that involve high up-front investments in, for example, irrigation and intensive production practices (e.g. sugarcane, horticulture), investment risks can be reduced by consolidating smallholder farmlands into collectively managed block farms. This could also produce efficiency gains by reducing transaction costs and enhance control over production and offtake by improving vertical coordination.

Nevertheless, for the purpose of policy-making it should be recognized that successful inclusive business models are rarely replicable since these tend to evolve through adaptive learning. Government and donors could through play an important role in facilitating this type of learning by, for example, providing targeted technical support, brokering relations with local stakeholder groups, and enhancing access for responsible investments to patient capital. Patient capital in particular often plays an important role in reducing the need to rapidly outscale a certain business model to meet short-term profit goals at the expense of a more cautious investment approach to ensure that the business model is adequately adapted to market conditions and local environmental and socio-economic realities.

While findings have relevance to agricultural policy-making in Mozambique, they also highlight that global discourse on recent agricultural investment trends tends to be insufficiently nuanced. As is extensively summarized in the synthesis, in Mozambique, China, Brazil, India and the Gulf States, biofuels and export markets have played only a minor role in sector expansion. While many investors do rely on their own plantations, many are also integrating smallholders into their supply chains

through third-party sourcing, suggesting that a considerable more diverse range of business models are represented in practice. Despite this, findings do echo those from the growing body of literature on the adverse social and environmental impacts of plantation production systems and raise questions about whether their direct local benefits adequately outweigh the costs.

However, with findings also showing that many different types of land-use transitions are brought about by plantation establishment and that large variations exist between investors in the types and number of activities adopted to mitigate impacts and contribute to local social and economic development, more attention should be paid in research to the factors that shape and help augment corporate social and environmental conduct. Besides the intrinsic epistemological value, such knowledge would enable policy makers, civil society organizations and donors to more effectively leverage investment capital in support of inclusive green growth objectives. Similarly, the challenges faced by investors adopting contract farming schemes also suggests that research still has an important role to play in identifying conditions and approaches for enhancing the effectiveness, viability and commercial attractiveness of inclusive business and how these can deliver greater impacts at scale.

References

- Aabø E and Kring T. 2012. *The Political Economy of Large-Scale Agricultural Land Acquisitions: Implications for Food Security and Livelihoods/Employment Creation in Mozambique*. Working Paper WP 2012-004. New York: UNDP.
- Anseeuw W, Boche M, Breu T, Giger M, Lay J, Messerli P and Nolte K. 2012. *Transnational land deals for agriculture in the Global South: Analytical report based on the land matrix database*. Rome: International Land Coalition.
- Baxter J. 2011. *Understanding land investment deals in Africa. Country report: Sierra Leone*. Oakland, CA: The Oakland Institute.
- Bergdolt C and Mittal A. 2012. *Betting on world agriculture: US private equity managers eye agricultural returns*. Oakland, CA: The Oakland Institute.
- Borras SM, Franco JC and Wang C. 2013. The challenge of global governance of land grabbing: Changing international agricultural context and competing political views and strategies. *Globalizations* 10(1):161–79.
- Brautigam D and Ekman SM. 2012. Briefing rumours and realities of Chinese agricultural engagement in Mozambique. *African Affairs* 111/444:483–492.
- Buckley L. 2013. Chinese agriculture development cooperation in Africa: Narratives and politics. *IDS Bulletin* 44(4):42–52.
- Buxton A, Campanale M and Cotula L. 2012. *Farms and funds: Investment funds in the global land rush*. London: International Institute for Environment and Development.
- Cabral L, Shankland A, Locke A and Duran J. 2012. Mozambique's agriculture and Brazil's cerrado 'model': Miracle or mirage?. *GREAT Insights* 1:10. Accessed 22 January 2016. <http://ecdpm.org/great-insights/africa-turning-point-mozambique-case/mozambiques-agriculture-brazils-cerrado-model/>
- Carmody P. 2013. A global enclosure: The geo-logics of Indian agro-investments in Africa. *Capitalism Nature Socialism* 24(1):84–103.
- Castel-Branco CN. 2006. Investimento público e privado, crescimento económico e redução da pobreza. II Conferência Económica do Milénio BIM. Maputo
- Castel-Branco CN. 2010. Economia extractiva e desafios de industrialização em Moçambique. *Cadernos IESE* No. 01/2010, Maputo: Instituto de Estudos Sociais e Economicos.
- Chachage C. 2010. *Land Acquisition and Accumulation in Tanzania: The Case of Morogoro, Iringa and Pwani Regions*. Dar es Salaam, Tanzania: PELUM.
- Chigara B, ed. 2012. *Southern African Development Community Land Issues: Towards a New Sustainable Land Relations Policy*. London: Routledge.
- Cotula L. 2012. The international political economy of the global land rush: A critical appraisal of trends, scale, geography and drivers. *The Journal of Peasant Studies* 39(3–4):649–80.
- Cotula L, Vermeulen S, Leonard R and Keeley J. 2009. *Land Grab or Development Opportunity? Agricultural Investment and International Land Deals in Africa*. London, UK, and Rome, Italy: International Institute for Environment and Development, Food and Agriculture Organization and International Fund for Agricultural Development.

- Cunguara B and Hanlon J. 2012. Whose wealth is it anyway? Mozambique's outstanding economic growth with worsening rural poverty. *Development and Change* 43(3):623–47.
- Daniel S. 2012. Situating private equity capital in the land grab debate. *The Journal of Peasant Studies* 39(3–4):703–29.
- Deininger K. 2011. Challenges posed by the new wave of farmland investment. *The Journal of Peasant Studies* 38(2):217–47.
- Deininger K and Byerlee D. 2012. The rise of large farms in land abundant countries: Do they have a future? *World Development* 40(4):701–14.
- Ekman SMS and Macamo CS. 2014. *Brazilian Development Cooperation in Agriculture: A Scoping Study on ProSavana in Mozambique, with Implications for Forests*. Vol. 138. Bogor, Indonesia: CIFOR.
- Fairbairn M. 2013. Indirect dispossession: Domestic power imbalances and foreign access to land in Mozambique. *Development and Change* 44(2):335–56.
- FIAN. 2010. *Land grabbing in Kenya and Mozambique: A report on two research missions – and a human rights analysis of land grabbing*. Heidelberg, Germany: FIAN International Secretariat.
- Friis C. and Reenberg A. 2010. *Land grab in Africa: Emerging land system drivers in a teleconnected world*. GLP Report No. 1. Copenhagen, Denmark: Global Land Project.
- German LA, Schoneveld GC and Mwangi E. 2013. Contemporary processes of large-scale land acquisition in sub-Saharan Africa: Legal failures, or elite capture of the rule of law? *World Development* 48:1–18.
- [GTZ] Gesellschaft für Technische Zusammenarbeit. 2009. *Foreign direct investment in land*. Information Brief. Eschborn, Germany: Gesellschaft für Technische Zusammenarbeit.
- Gordon-Maclean A, Laizer J, Harrison P and Shemdoe R. 2009. *Biofuel industry study, Tanzania: an assessment of the current situation*. Dar es Salaam, Tanzania: World Wide Fund for Nature.
- [GoM] Government of Mozambique. 2011. *Compact for Development of Agriculture Sector in Mozambique in the context of CAADP*. Maputo, Mozambique: Government of Mozambique. Accessed 22 January 2016. <http://caadp.net/sites/default/files/documents/CAADP-Compacts/SADC/Mozambique/Mozambique-Signed-Compact.pdf>
- GRAIN. 2012. *GRAIN releases data set with over 400 global land grabs*. Accessed 22 January 2016. <https://www.grain.org/article/entries/4479-grain-releases-data-set-with-over-400-global-land-grabs>
- Hall R. 2011. Land grabbing in Southern Africa: The many faces of the investor rush. *Review of African Political Economy* 38(128):193–214.
- Hanlon J. 1984. *Mozambique: The Revolution Under Fire*. London: Zed Press.
- Hanlon J and Smart T. 2008. *Há mais bicicletas – mashá desenvolvimento?* Maputo, Mozambique: Missanga Ideias & Projectos Lda.
- HighQuest Partners. 2010. *Private financial sector investment in farmland and agricultural infrastructure*. Working Paper 33. Paris: Organization for Economic Co-operation and Development.
- Horta L. 2008. *The Zambezi Valley: China's First Agricultural Colony?* Washington, DC: Center for Strategic & International Studies. Accessed 22 January 2016. <http://csis.org/publication/zambezi-valley-chinas-first-agricultural-colony>
- IFAD. 2014. *Investing in rural people in Mozambique*. Rome: International Fund for Agricultural Development. Accessed 22 January 2016. http://www.ifad.org/operations/projects/regions/Pf/factsheets/mozambique_e.pdf

- Kaag MMA and Zoomers A. 2014. *The Global Land Grab: Beyond the Hype*. London: Zed Books.
- Landry J. 2009. *Analysis of the potential socio-economic impact of establishing plantation forestry on rural communities in Sanga District, Niassa province, Mozambique*. Thesis submitted in partial fulfilment of the requirements for the degree of Master of Science in Forestry. Stellenbosch, South Africa: Stellenbosch University.
- Locher M. 2011. 'How come that others are selling our land?': Customary land rights, rural livelihoods and foreign land acquisition in the case of a UK-based forestry company in Tanzania. Presentation, International Conference on Global Land Grabbing, 6–8 April, University of Sussex, UK.
- Margulis ME, McKeon N and Borrás S. 2013. Land grabbing and global governance: Critical perspectives. *Globalizations* 10(1):1–23.
- Matavel N, Dolores S and Cabanelas V. 2011. *Lords of the Land: Preliminary Analysis of the Phenomenon of Land Grabbing in Mozambique*. Maputo, Mozambique: JustiçaAmbiental (JA) & União Nacional dos Camponeses (UNAC).
- McMichael P. 2012. The land grab and corporate food regime restructuring. *The Journal of Peasant Studies* 39(3–4):681–701.
- Miller C, Richter S, McNellis P and Mhlanga N. 2010. *Agriculture Investment Funds for Developing Countries*. Rome: Food and Agriculture Organization of the United Nations (FAO).
- Mousseau F and Mittal A. 2011. *Understanding Land Investment Deals in Africa. Country Report: Mozambique*. Oakland, CA: The Oakland Institute.
- Nguiffo S and Schwartz B. 2012. *Herakles' 13th Labour? A Study of SGSOC's Land Concession in South-West Cameroon*. Yaoundé, Cameroon: Centre pour L'Environnement et le Développement.
- Nhantumbo I and Salomão A. 2010. *Biofuels, Land Access and Rural Livelihoods in Mozambique*. London: IIED.
- Norfolk S and Hanlon J. 2012. *Confrontation between peasant producers and investors in northern Zambézia, Mozambique, in the context of profit pressures on European investors*. Presentation, Annual World Bank Conference on Land and Poverty, April 23–26, 2012.
- Oxfam. 2011. *Land and power: The growing scandal surrounding the new wave of investments in land*. International Briefing Paper 51. London: Oxfam.
- Rainforest Foundation. 2013. *Seeds of Destruction: Expansion of Industrial Oil Palm Expansion in the Congo Basin: Potential Impacts on Forests and People*. London: The Rainforest Foundation.
- Rahmato D. 2011. *Land to Investors: Large-scale Land Transfer in Ethiopia*. Addis Ababa, Ethiopia: Forum for Social Studies.
- Ribeiro D and Matavel N. 2009. *Jatropha! A Socio-economic Pitfall for Mozambique*. Maputo, Mozambique: JustiçaAmbiental (JA) and União Nacional de Camponeses (UNAC).
- Schoneveld GC. 2013. *The Governance of Large-Scale Farmland Investments in Sub-Saharan Africa. A Comparative Analysis of the Challenges for Sustainability*. Delft, The Netherlands: Eburon.
- Schoneveld GC. 2014a. The geographic and sectoral patterns of large-scale farmland investments in sub-Saharan Africa. *Food Policy* 48:34–50.
- Schoneveld GC. 2014b. The politics of the forest frontier: Negotiating between conservation, development, and indigenous rights in Cross River State, Nigeria. *Land Use Policy* 38:147–62.

- Schmidhuber J, Bruinsma J and Boedeker G. 2009. *Capital requirements for agriculture in developing countries to 2050*. FAO Expert Meeting on “How to Feed the World in 2050. Rome: Food and Agriculture Organization of the United Nations (FAO).
- Shete M. 2013. *Impact of Large Scale Agricultural Investment on Income and Food Security in Oromiya Region, Ethiopia*. Presentation, Annual World Bank Conference On Land And Poverty, April 8–11. Washington, DC: World Bank.
- Shete M, Rutten M, Schoneveld GC and Zewude E. 2015. Land-use changes by large-scale plantations and their effects on soil organic carbon, micronutrients and bulk density: Empirical evidence from Ethiopia. *Agriculture and Human Values* 1–16.
- Theting H and Brekke E. 2010. *Land Investments or Land Grab. A Critical View From Tanzania and Mozambique*. Oslo, Norway: Spire.
- Toulmin C, Bindraban P, Borrás SM, Mwangi E and Sauer S. 2011. *Land tenure and international investments in agriculture*. Report prepared for the High Level Panel of Experts on Food Security and Nutrition. Committee on World Food Security, Rome, Italy.
- Tsikata D and Yaro J. 2011. *Land market liberalization and trans-national commercial land deals in Ghana since the 1990s*. Presentation, International Conference of Global Land Grabbing, 6–8 April 2011, University of Sussex, UK.
- [UNAC] União Nacional de Camponeses. 2012. *Land Grabbing for Agribusiness in Mozambique: UNAC Statement on the ProSavana Programme*. Accessed 23 January 2016. <http://www.unac.org.mz/english/index.php/our-position-documents/8-unac-s-statement-on-the-prosavana-programme>
- [UNDP] United Nations Development Programme. 2008. *Creating Value for All: Strategies for Doing Business with the Poor*. New York: UNDP.
- [UNDP] United Nations Development Programme. 2014. *Sustaining human progress: reducing vulnerabilities and building resilience*. Human Development Report 2014. New York: UNDP.
- Van Westen G, Van Noorloos F and Di Matteo F. 2013. CSR in Mozambique: High potential in a difficult business environment. In Van Westen G. *et al.*, *Corporate Social Responsibility in the Agro-food Sector: The Contribution of Dutch and European Agro-entrepreneurs to Sustainable Development and Food Security in Africa*. 62–77, Utrecht, The Netherlands: IDS Utrecht University. <http://landgovernance.org/system/files/CSR%20in%20the%20agro-food%20sector.pdf>
- Väth SJ. 2012. *Gaining neighbours or disruptive factors: What happened when large-scale land-based investment in the Ghanaian oil palm sector met the local population on the ground?*. Presentation, International Conference on Global Land Grabbing II, October 17–19, Cornell University, USA.
- Vermeulen S and Cotula L. 2010. *Making the Most of Agricultural Investment: A Survey of Business Models that Provide Opportunities for Smallholders*. London/Rome/Bern: IIED/FAO/IFAD/SDC.
- Von Braun J and Meinzen-Dick R. 2009. *Land grabbing by foreign investors in developing countries: risks and opportunities*. Policy brief. Washington, DC: International Food Policy Research Institute.
- Wach E. 2012. *Measuring the ‘inclusivity’ of inclusive business*. Practice Paper 2012, No. 9. Brighton, UK: Institute of Development Studies,
- Waterhouse R, Lauriciano G and Norfolk S. 2010. *Social analysis of selected projects: issues note and case studies. Large-scale land acquisition for agricultural production: Mozambique*. Draft. Washington, DC: World Bank.

- Woertz E. 2013. The governance of Gulf agro-investments. *Globalizations* 10(1):87–104.
- World Bank. 2011. *Rising Global Interest in Farmland. Can it yield sustainable and equitable benefits?* Washington, DC: World Bank.
- Zacarias, A. 2013. *Farmers in Mozambique Fear Brazilian-Style Agriculture*. Inter Press Service. Accessed 23 January 2016. <http://www.ipsnews.net/2013/12/farmers-mozambique-fear-brazilian-model/>

Annexes

Table A1. Government organizations interviewed and types of data collected.

Ministry	Institution	Location	Data collected
MINAG (national)	CENACARTA Forestry department Land department CEPAGRI	Maputo city	Data on DUAT allocations Land cover maps Data on forestry investments Data on registered agricultural investments 2002-2013
MICOA	National Directorate for Environmental Impact Assessments (DNAIA)	Maputo city	Environmental Impact Assessment data and reports
MPD	CPI	Maputo city	Data on registered agricultural investments 2002-2013
MINAG (provincial)	CEPAGRI Provincial Directorate of Agriculture (PDA)	Gaza, Zambezia, Nampula, and Manica*	Data on active and closed down projects Data on DUAT allocations and cadastral maps
MINAG (district)	District MINAG offices	22 district in Maputo, Gaza, Manica, Zambezia, Nampula and Niassa province	Data on DUAT allocations and cadastral maps Registered investment data

* The PDAs in Gaza and Maputo were contacted, but interview requests were not granted.

Table A2. One-way ANOVA results.

Dependent variables	Local development	Social infrastructure	Employment benefits	Environment	Wage
Origin	8.215***	0.995	1.419	1.267	7.214***
Profit	1.696	1.567	3.232*	0.038	0.108
Displacement	4.251**	25.517***	2.194	0.172	0.288
Business model	5.24***	1.72	0.269	0.613	1.975
Title type	10.207***	9.583***	0.644	0.033	2.808
Grant	5.433**	1.603	1.022	0.127	1.813
Capital	4.497**	2.8	0.014	0.295	0.306
Area of land owned	9.684***	1.58	0.512	1.392	0.418
Current market orientation	0.239	0.752	0.321	0.303	0.815
Area of land developed	0.1	8.222***	0.636	3.531***	0.015
Age of investment	1.989	1.212	0.453	1.625	0.045
Adoption of self- and co-regulatory initiatives	1.632	0.481	1.765	19.391***	0.687

Note: The F-values are provided in the table, with the statistical significance denoted by * (0.1), ** (0.05), and *** (0.01)

DOI: 10.17528/cifor/005958

CIFOR Working Papers contain preliminary or advance research results on tropical forest issues that need to be published in a timely manner to inform and promote discussion. This content has been internally reviewed but has not undergone external peer review.

The recent influx of agricultural investment to Africa is increasingly equated with land grabbing by investors from emerging and Northern economies seeking to produce commodities to serve the needs of their own food and energy markets. This paper reflects on this discourse by unpacking agricultural investments in Mozambique – one of the largest recipients of agricultural investment in Africa. By drawing on official investment data and structured interviews conducted with 69 agricultural investors in Mozambique, this paper analyzes agricultural investment trends, characteristics and the factors that shape investors' social and environmental conduct. It illustrates that, contrary to popular depiction, regional investors, domestic food end-markets, and private finance are the primary drivers of investment. Moreover, this paper shows that investors differ significantly in the types of strategies, business models and practices they adopt. The findings highlight a lack of nuance in the global agricultural investment discourse and the need for more evidence-based policy intervention in order to adequately leverage the potential of agricultural investments to contribute to inclusive green growth.



RESEARCH
PROGRAM ON
Forests, Trees and
Agroforestry

This research was carried out by CIFOR as part of the CGIAR Research Program on Forests, Trees and Agroforestry (CRP-FTA). This collaborative program aims to enhance the management and use of forests, agroforestry and tree genetic resources across the landscape from forests to farms. CIFOR leads CRP-FTA in partnership with Bioversity International, CATIE, CIRAD, the International Center for Tropical Agriculture and the World Agroforestry Centre.



Fund



cifor.org | blog.cifor.org



Center for International Forestry Research (CIFOR)

CIFOR advances human well-being, environmental conservation and equity by conducting research to help shape policies and practices that affect forests in developing countries. CIFOR is a member of the CGIAR Consortium. Our headquarters are in Bogor, Indonesia, with offices in Asia, Africa and Latin America.

