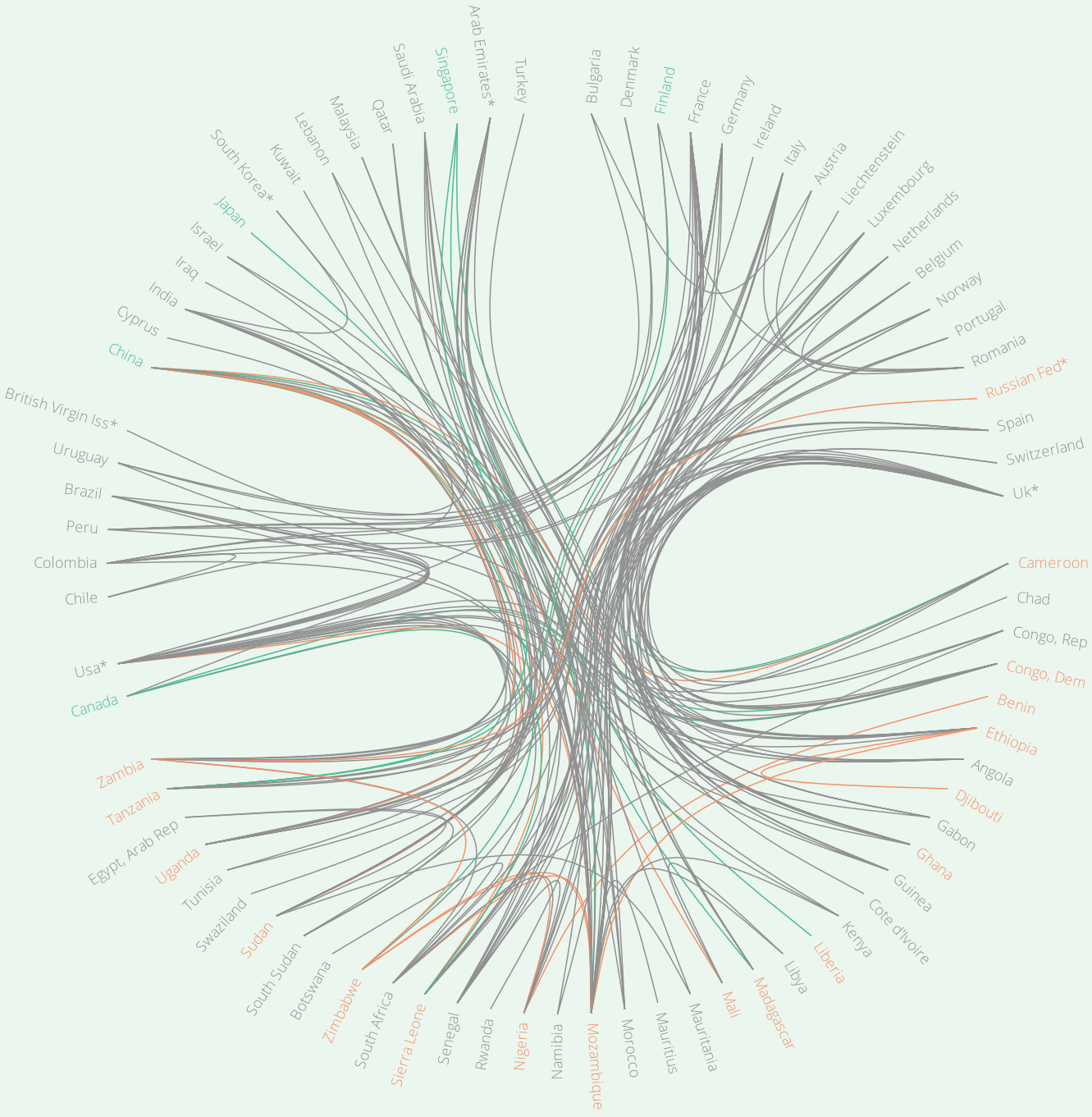
LAND MATRIX

# International Land Deals for Agriculture

## Fresh insights from the Land Matrix: Analytical Report II

Kerstin Nolte, Wytske Chamberlain, Markus Giger



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# Acronyms and Abbreviations

| | |
|---|---|
| ADM | Archer Daniels Midland |
| AFA | Asian Farmers' Association for Sustainable Rural Development |
| AU | African Union |
| BMBF | German Federal Ministry of Education and Research |
| BMZ | German Federal Ministry for Economic Cooperation and Development |
| CDE | Centre for Development and Environment |
| CFS | Committee on World Food Security |
| CIRAD | Centre de Coopération Internationale en Recherche Agronomique pour le Développement |
| CSO | Civil society organisation |
| CSR | Corporate social responsibility |
| EC | European Commission |
| EU | European Union |
| FAO | Food and Agriculture Organization of the United Nations |
| FPIC | Free, prior and informed consent |
| FUNDAPAZ | Fundación para el Desarrollo en Justicia y Paz |
| GDP | Gross domestic product |
| GHI | Global Hunger Index |
| GIGA | German Institute of Global and Area Studies |
| GIS | Geographic information system |
| GIZ | Deutsche Gesellschaft für Internationale Zusammenarbeit |
| ICC | Indicative Crop Classification (FAO) |
| ILC | International Land Coalition |
| LM | Land Matrix |
| LMI | Land Matrix Initiative |
| MoU | Memorandum of understanding |
| NGO | Non-governmental organisation |
| RSB | Roundtable on Sustainable Biomaterials |
| SDC | Swiss Agency for Cooperation and Development |
| SDGs | Sustainable Development Goals |
| UNCTAD | United Nations Conference on Trade and Development |
| VRG | Vietnam Rubber Group |
| WWF | World Wide Fund for Nature |

# Foreword

The beta version of the Global Observatory was launched by the Land Matrix in April 2012 with the aim of creating a reliable source of data to feed debate and provoke informed action on large-scale land deals. The Land Matrix has since become an important reference point and its website has received over 165,000 visits since 2013, with the database being downloaded 20,000 times. It is widely quoted in research papers and in the press, and is increasingly being used by national organisations – including those representing land users themselves – to inform strategic planning and to open up policy dialogue.

The Sustainable Development Goals have renewed the demand for good data that can inform action and measure progress towards their achievement. The Land Matrix is a contribution to this effort, producing a wealth of data to complement official statistics and geographical information on land deals and their impacts.

Transparency is embraced by the International Land Coalition (ILC)'s 207 members as one of the 10 critical ingredients in achieving "people-centred land governance" – i.e. land governance that first and foremost meets the needs, and responds to the priorities, of the women, men and communities who live off the land.

We are beginning to observe private and governmental investors becoming more open to sharing their investment projects, realising that it is in their interests to do so. Nevertheless, transparency is still not the norm, and there remains a challenge in complementing global data with local data, particularly regarding the impact of land deals.

This report is being launched in the same year that over 400 organisations have come together behind a Global Call to Action on Community and Indigenous Land Rights, drawing attention to the massive gap between the area of land globally that is claimed by the world's indigenous peoples and local communities (65%) and the proportion of these claims that are actually recognised by governments (10%) – which means that the livelihoods of up to 2.5 billion women and men worldwide are rendered precarious. This is land where the utmost caution must be exercised in considering any form of large-scale land-based investment. The authors of this report find that about one-third of agricultural deals recorded in the Land Matrix involve land formerly used by smallholder farmers. This gap in recognition, which is fuelling large-scale dispossessions, is one of the key issues on which urgent joint action is needed.

ILC is glad that the Land Matrix Initiative is becoming more and more relevant as a data source for communities, activists, indigenous peoples, researchers, governments and the private sector alike to make informed decisions on global and local land governance.

**Annalisa Mauro**
**International Land Coalition**

# Summary

## Land acquisitions continue to be an important trend

Large-scale land acquisitions continue to be an important issue for governments, development organisations, NGOs and farmers' organisations all over the world; this remains the case even in times of global economic slowdown, recession and crisis. The scale of this trend and its significant impacts on rural transformation and livelihoods make it necessary to further monitor, observe and positively influence such deals wherever possible.

The Land Matrix Initiative (LMI) is a global partnership which aims to improve transparency around large-scale land acquisitions. It collects and provides data and information through a network of global and regional partners. In April 2012 it published its first Analytical Report (Anseeuw et al., 2012), which provided a comprehensive overview of the phenomenon, which at that time was newly emerging.

## A new and updated report is needed

Since the 2012 report, large-scale land acquisitions have continued to take place and further insight has been obtained. Over this period the LMI has undergone a number of changes: it has incorporated regional partners in the global South; the database and platform have undergone major developments which enable it to present continuously updated information, with individual deals being tracked over time; and data gathering has been improved, drawing on multiple source types for each deal. While our understanding of large-scale land acquisitions is increasing, levels of transparency remain low. Hence the motivation of the LMI to support informed, equitable decision-making remains relevant.

This report aims to contribute to the body of knowledge available on land acquisitions in low- and middle-income countries by presenting an up-to-date analysis of the data contained in the Land Matrix database and providing complementary evidence based on case studies. It provides a concise overview of general trends and developments, as well as regional and local insights. In particular, the report gives an update on recent developments, zooms in to focus on the key target regions, investigates who acquires land and discusses emerging evidence on the impacts of large-scale land acquisitions. Additionally, through a number of case studies provided by our network partners, it provides insights into realities on the ground.

## Focus on international land acquisitions for agriculture

The scope of this report is limited to large-scale transnational deals in the agricultural sector, as this is where the Land Matrix can claim to identify global trends. The Land Matrix and its partners are clearly aware of the importance of domestic deals, however, and this data gap will be partly overcome by the establishment of local observatories in the near future.

Deals in sectors such as mining, forestry and energy are equally central to the impact of and debate around land acquisitions. A short overview of deals for non-agricultural purposes is included in this report.

## Data limitations

Although data collection by the LMI is unlikely to result in a complete inventory of all large-scale land acquisitions worldwide, the data provides a sample that is large and representative enough for empirical analysis. Data limitations mean that aggregate figures should be interpreted with care. Earlier estimates of global land acquisitions, as published in our previous report, were often higher because they included intended deals that were subsequently downsized or failed to materialise. This is why the Land Matrix data now explicitly captures the dynamics of land deals. We trace deals from their initial announcement through the negotiation process, conclusion of contract and implementation, and also their potential failure.

## Agricultural land acquisitions are increasingly becoming operational

Overall, the Land Matrix has captured 1,204 concluded deals (for all intentions), which cover over 42.2 million hectares of land. Intended deals target 20 million hectares and failed deals 7.2 million hectares. Overall, concluded deals are smaller in size than their original intention and the average size is smaller than intended and failed projects. The large majority of deals are for farming purposes: there are 1,004 concluded large-scale agricultural land acquisitions covering 26.7 million hectares under contract.

For about 70% of these agricultural land acquisitions activities have started, and most of these are in operation. In the 2012 Analytical Report only 323 deals had seen operations begin, but this number has nearly doubled to 604 and the area under production has increased from 1.7 million hectares to 6.4 million hectares. Implementation is typically quite fast: most deals enter the production phase in less than three years.

## Food crops dominate

Food crops continue to play the major role, both in terms of number of deals (553) and area (9.2 million hectares), followed by unspecified agricultural intentions – mostly involving oil palm (263 deals on 5.6 million hectares) and agrofuels (221 deals on 5.1 million hectares). The crops planted most often are oil seeds, including oil palm and jatropha, cereals such as corn and wheat, and sugar crops. Most of these crops can also be used for fuel or renewable energy, and this is captured in the database where applicable.

## Africa is the most targeted continent, but the main target countries are elsewhere

Africa remains the most significant target area, with deals concluded in many countries across the continent. It accounts for 422 concluded agricultural deals (42% of all deals) and 10

million hectares (37%). It also has the highest number of intended deals (147 deals; 13.2 million hectares). Land acquisitions are concentrated along major rivers and in East Africa. The second most important region is Eastern Europe, which accounts for 96 deals and 5.1 million hectares of concluded deals.

The top five individual target countries (Indonesia, Ukraine, Russia, Papua New Guinea and Brazil) account for 46% of the total area of all concluded agricultural deals and 25% in terms of the number of deals.

## Large diversity in origin of investors

The top five investor countries are Malaysia, the USA, the UK, Singapore and Saudi Arabia. Together these account for 45% of the land under contract and 37% of all deals. Western European investors (the top five being the UK, the Netherlands, France, Jersey and Cyprus) are involved in 315 concluded deals, covering nearly 7.3 million hectares, which makes this the biggest investor region, followed by South-East Asia. Recently, the pace of investments from the USA has slowed, while investments from tax haven countries such as Cyprus and the British Virgin Island have increased by comparison.

## Strong regional trends

Investors from the global South show a preference for investing in their own regions – most significantly, Malaysian investors targeting Indonesia and Argentinian investors acquiring land in Brazil. Similarly, investors from high-income countries tend to target land on the same continent, such as North American investors active in South America and East Asian investors acquiring land in other Asian countries. European and Middle Eastern investors are mostly active in Africa.

## The private sector dominates

Private (non-listed) companies drive most of the deals: over 40% of all concluded deals, covering more than 45% of the land under contract. This type of investor mainly targets land in Africa and Central and South America. Stock exchange-listed firms account for a further 30% of deals (32% of area); these deals are concentrated more in Asia and Eastern Europe. While many private companies are involved in a small number of deals, stock exchange-listed companies often engage in multiple land deals focusing on a single geographic region.

## Indirect drive by investment funds and state-owned entities

Investment funds and state-owned entities together account for around 15% of large-scale land acquisitions and as such are not major drivers. However, their involvement reaches further through indirect engagement, as they are often part of highly complex investor chains. Both investor types are shareholders in stock exchange-listed companies, and thus provide financing to these investors. Furthermore, government policies can stimulate private capital to invest in foreign land acquisition.

## Food is the main purpose, but some investors focus on other intentions

Most investors from the top 10 investor countries are involved in food crop production. Exceptions are the dominance of oil palm and rubber in Asian investments and the relative dominance of fuel crops in the case of UK and Indian investors. In particular investment funds, and to a lesser extent state-owned entities, appear to acquire land for food crops, according to Land Matrix data. This underlines the drive by governments to ensure food security for their own populations.

## Most acquisitions do not include a domestic shareholder

In 155 concluded deals, or just 15.4% of the total, equity is shared between international and domestic investors. This indicates that these investments have a low level of inclusion of domestic stakeholders, limiting the impact of foreign land acquisitions on local development. The cases with domestic shareholdings are mostly in Africa, typically with the target government as a joint venture partner, and the Americas. Deals involving domestic shareholders are comparatively more focused on fuel production.

## Land acquisitions often target relatively highly populated areas dominated by croplands

Agricultural land deals take place in three distinct socio-ecological contexts. On more than 50% of the area, the previous, the previous land cover was already cropland. In areas dominated by croplands, population densities are relatively high. This inevitably leads to increased competition for land, and can entail an increased incidence of conflict and loss of livelihood opportunities for local communities. A substantial number of land acquisitions involve forested land, which has low population densities though land is often used by local communities. The ecological impacts are significant, and communities are affected when forest ecosystems are displaced by commercial plantations. A third distinct context is moderately populated areas, often shrub- and grasslands that are considered by outsiders to be "marginal" areas. While many different climate zones are affected, tropical savannah and tropical rainforest are disproportionately targeted for land acquisition. The land targeted in Asia is mostly located in tropical rainforests. In Central and West Africa, most deals are concluded in tropical savannah and along major rivers outside tropical rainforests.

## Local communities are often bypassed in negotiations

The exclusion of local communities during the negotiation phase means that they frequently oppose foreign investors (in 60% of the 180 deals where information is available). In about 14% of cases, a process of free, prior and informed consent (FPIC) has been conducted, while in 43% of cases some limited form of consultation has taken place. It is important to note that simply knowing that some form of consultation has taken place is not sufficient in itself to judge the quality of the consultation process, which can be selective and which can bypass important groups affected by a land deal.

## Limited information on displacement and compensation

Almost half of the area targeted was formerly owned by communities, and this is therefore likely to lead to voluntary or forced displacements of local populations. Deals where displacement occurs generally involve a large number of people. Compensation is paid to people or communities who lose access to land in one-third of cases.

## Projects in operation have significant socio-economic and ecological impacts

Typically during the start-up phase, when farms are being established, there is high labour demand for construction work and infrastructure development, but for a short period of time only. However, the implications of mature operational projects have yet to be researched in detail. Many projects have not yet reached maturity and at this stage the Land Matrix data can provide only limited evidence on their impacts. Many projects promise improved social infrastructure, and Land Matrix data suggests that education and health facilities are frequently established. A particularly interesting aspect is the potential creation of employment through land acquisitions. We find very low intensities of labour, suggesting the prevalence of capital-intensive production methods and therefore limited capacity to create rural employment. Large-scale farms are often located in proximity to smallholder farms and hence it is likely that spillovers to smallholder farmers will materialise. Contract farming models are one option to include local smallholders, and Land Matrix data shows that a substantial proportion of deals use such models. However, these schemes are not automatically beneficial to participants (or to non-participants), and a high degree of involvement by investors is necessary to make contract farming work. The environmental effects of operational farms depend largely on the mode of production and the mitigation measures taken. One key concern is an increase in water scarcity.

Further need for monitoring

As operational activities increase, the long-term effects on communities will become clearer. It remains important to gain a better understanding of the overall benefits and costs of large-scale land acquisitions for local communities, rural development and the achievement of national development goals (if any). The trade-offs between socio-economic and environmental aims need to be further monitored, and the impact of large-scale land acquisitions needs to be assessed in the context of achieving the Sustainable Development Goals (SDGs) set by the international community.

## Further need for monitoring

In the years to come the Land Matrix Initiative will continue to collect data on land acquisitions, and will aim to forge even closer connections with its regional partners and networks. We also plan to develop a number of national land observatories and to work more closely with existing multi-stakeholder platforms of various types, helping them to further investigate the scale and impact of land acquisitions and to contribute to policy, development, research and advocacy activities. Eventually, we aim to use this information to contribute to more equitable decision-making, by supporting stakeholders with a weaker voice in negotiating and decision-making on land acquisitions.

# 1. Introduction

## 1.1. Background and objectives of this report

Strong demand for land continues to be a major challenge that highlights the interconnectedness of the global South and the global North: investors from all over the world are acquiring land for agriculture and resource extraction, much of it in the global South. This phenomenon has been dubbed the "rush for land" and has captured much attention from policy-makers, researchers, the media and the public. A peak was reached around 2009 during the triple crises of finance, food and fuel (McMichael, 2012), when a series of large-scale land deals was announced by governments and investors or reported by researchers, non-governmental organisations (NGOs) or farming organisations. This raised hopes for some of a faster road to rural development, but concerns were also voiced about potential negative effects on food security, access to land and the future of small-scale farmers in the South by global institutions such as the Committee on World Food Security (CFS), the UN Food and Agriculture Organization (FAO), the United Nations Conference on Trade and Development (UNCTAD), the World Bank, bilateral donors and the African Union (AU).

One problem that was widely perceived by policy-makers, researchers and the public was the scarcity of robust data. Due to their controversial context and potential for creating conflict, land acquisitions often take place behind closed doors. A lack of transparency and the marginalisation of local stakeholders weaken the bargaining position of smallholder farmers and pastoralists, including indigenous peoples.

The Land Matrix Initiative (LMI), a partnership consisting of global and regional partners, was established in 2009 with the aim of addressing the lack of robust data on land acquisitions. Since then, the Land Matrix (LM) database has recorded intended, concluded and failed land acquisitions since the year 2000. By providing open access to its database, the Land Matrix strives to contribute to the overall debate by providing better information on planned and implemented large-scale land acquisitions and to stimulate a more transparent and inclusive debate on the trends and impacts of such acquisitions.

The first Analytical Report (Anseeuw et al., 2012) summarised the results of Land Matrix data collection to that date and presented a number of important findings, based on the data available at that time. Many of these findings have since been confirmed by other studies.

The LMI has received much feedback and numerous contributions over time, which have resulted in a number of changes to the structure of the database and its data collection methods since the first Analytical Report was published. First, the classification system for information has been systematised, and the classification of information as "reliable" or "not reliable" has been dropped. The Land Matrix now provides information on the nature of data sources and the sources themselves, allowing users to judge the quality of information. Second, a classification has been developed which allows the evolution of deals to be tracked. This classification makes a distinction between negotiation status, which captures intended, concluded and failed deals, and implementation status, which describes activity on the ground for deals that have been concluded. Third, the Land Matrix has engaged regional partners and decentralised its data collection, and has strengthened internal quality assurance. These efforts have helped to improve both the quality and quantity of data and are reflected in continuous updates of the Land Matrix website. Four years after the publication of the first Analytical Report, this second report aims to present an updated and consolidated overview of large-scale land acquisitions, presenting new insights based on the improved data.

**Box 1:** How does this report differ from the 2012 Analytical Report?

Some of the differences between the data presented in this report and that in the first Analytical Report (Anseeuw et al., 2012) seem quite striking at first sight. These differences can be explained largely by four separate factors: an improvement in the quality of data through a process of feedback and data cleaning; changes in the methodology used to categorise data; expansion of the LMI's network of contributors; and finally changes in the process of land acquisitions on the ground.

**Methodological changes:** We have introduced different statuses for negotiation and now distinguish between the intended size of a deal and the size of the contract (see also Box 3). This has reduced the land area subject to deals considerably, as we now only consider areas that are under contract in our aggregate figures. We have also developed "minimum requirements" for a deal to be shown on the public interface of the Land Matrix. This means that many of the deals from the first report are still held in the database but are not included in this analysis, as we lack crucial information: for instance, we need to know at least the country of the potential acquisition.

**Data cleaning and feedback:** The first report and the Land Matrix website have helped to generate a large amount of feedback. Based on this, we have corrected erroneous information on deals and have deleted duplications (for instance, deals with names of different investors that have proved to be the same investment).

**Expansion of the contributor network:** Bringing more regional partners on board has contributed to strengthening the coverage of certain regions. This is particularly the case for Asia and Latin America, which now feature more prominently in the database than they did in 2012.

**Changes in the extent of land acquisitions:** A total of 276 new deals have been concluded since 2012.

These changes explain, for instance, the following differences from the first Analytical Report.

**Overall numbers:** Anseeuw et al. (2012) reported 1,217 agricultural deals covering 83.2 million hectares of land, while this report focuses on 1,004 concluded agricultural deals covering 26.7 million hectares. However, Anseeuw et al. included many deals that did not have a contract; they only reported 403 deals with a contract, affecting 26.2 million hectares. Their 1,217 deals hence also included "intended" and "failed" deals, which we now exclude for the main part of this analysis. Additionally, this total included deals for which data was not rated "reliable"; the total area given for deals denoted "reliable" was 32 million hectares.
Regional trends: Looking at the regional overview of target countries (see Table 9), a regional shift can be observed: a lower number and smaller size of deals in Asia and Africa, but an increased number of deals in the Americas, Eastern Europe and Oceania. In the first report, Africa accounted for 754 deals (62% of the total) and 56.2 million hectares (67%). In the present report, Africa accounts for 422 concluded deals (42% of all deals) and 10 million hectares (37%) – though Africa remains the most heavily targeted continent.

**Top target countries:** The top 20 target countries (Figure 11) have also changed: some countries remain on the list (e.g. Sudan, Mozambique, Ethiopia, Ghana), while others have dropped off it (e.g. Tanzania, DR Congo, Senegal, Nigeria). Some, such as Ukraine and Papua New Guinea, are new, while others have become more important (Indonesia and Russia). Much of this can be explained by the new focus on concluded projects and by considering the contract size.

"The Land Matrix strives to contribute to the overall debate by providing better information on planned and implemented large-scale land acquisitions and to stimulate a more transparent and inclusive debate."

Since the publication of the first Analytical Report, more research has been conducted on land deals and more empirical results have become available; hence both the quantity and quality of data have increased. Together with the strengthening of the LMI network, this has led to the addition of land deals that had not been reported previously, and also to corrections of incomplete or erroneous data entries.

The status of large-scale land acquisitions has continued to develop since 2012. New deals have been signed and more deals have begun production, while others have failed in their implementation. In general, implementation of a substantial proportion of deals is now starting to take place, which puts new emphasis on the impacts of operational projects.

The present report therefore aims to fulfil two objectives: first, to provide an updated overview and interpretation of the data contained in the Land Matrix as of April 2016, which may serve as a comprehensive source of this aggregated information; and second, to capture the dynamics involved in the process of land acquisition. We do this by providing an interpretation of the data, illustrated by insights gathered directly from the field and through cases studies provided by Land Matrix regional partners and other authors linked to the LMI.

The report is structured into five main chapters. This chapter serves as an introduction and describes the background and objectives of the report. Chapter 2 provides an overview and insights on regional and national trends in large-scale agricultural land acquisitions. Chapter 3 offers an analysis of investors; Chapter 4 looks in detail at the type of land that is targeted; and Chapter 5 focuses on the implications of land acquisitions for affected local communities in target countries.

## 1.2. The LMI: providing data and supporting more equitable governance of land deals

The Land Matrix Initiative is a global initiative to collect, provide and analyse data on land acquisitions. Its goal is to improve transparency on land deals, thereby contributing to strengthening the positions of weaker stakeholders in the political and administrative processes that govern access to land. The Global Observatory of the LMI, the Land Matrix database[1] (www.landmatrix.org), is an open tool for collecting and visualising information on large-scale land acquisitions. The LMI is coordinated by the Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), the Centre for Development and Environment (CDE) at the University of Bern, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the German Institute of Global and Area Studies (GIGA) and the International Land Coalition (ILC). In the context of decentralisation, four regional focal points support the LMI with regional-level data collection, research, advocacy, networking and communication. These focal points are the Asian

[1] We use the term "Land Matrix Initiative (LMI)" whenever we refer to the partnership as an institution, while we use "Land Matrix" to refer to the data collected by the LMI.

Farmers' Association for Sustainable Rural Development (AFA), covering South-East, East, South and Central Asia; the Mongolian NGO Jasil, covering Mongolia, Kazakhstan and Kyrgyzstan; the Argentinian civil society organization (CSO) Fundación para el Desarrollo en Justicia y Paz (FUNDAPAZ), covering Latin America; and the University of Pretoria, covering Africa. The LMI is currently funded by the German Federal Ministry for Economic Cooperation and Development (BMZ), the European Commission (EC),[2] the Swiss Agency for Development and Cooperation (SDC) and the French Ministry of Foreign Affairs, as well as through co-funding by the participating institutions.

The Global Observatory collects data on intended, concluded and failed attempts to acquire land through purchase, lease or concession for agricultural production, timber extraction, carbon trading, industry, renewable energy production, conservation and tourism in low- and middle-income countries. Deals must meet the following criteria:

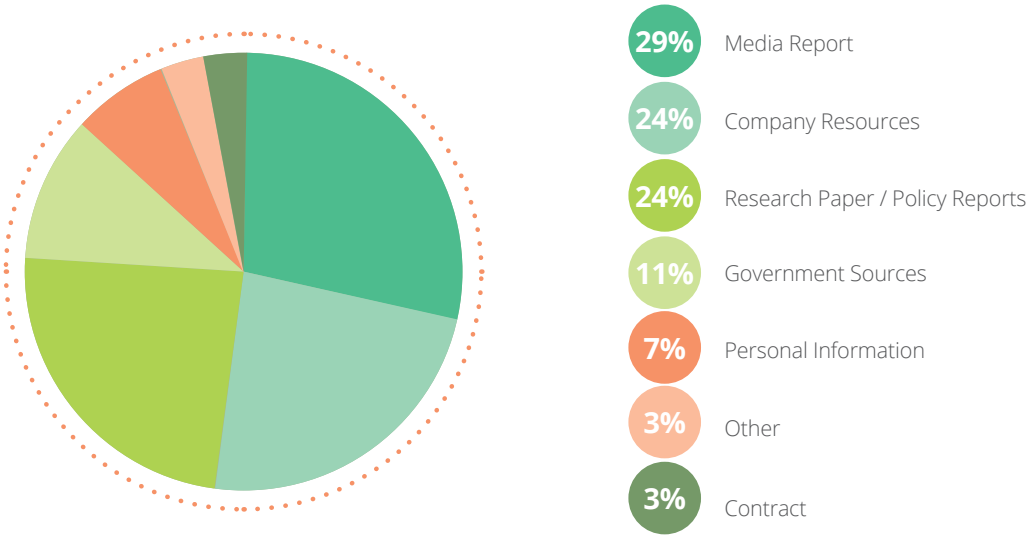
- Entail a transfer of rights to use, control or own land through sale, lease or concession;
- Have been initiated since the year 2000;
- Cover an area of 200 hectares or more;
- Imply the potential conversion of land from smallholder production, local community use or important ecosystem service provision to commercial use.

Through the process of decentralisation and the establishment of regional focal points, the Land Matrix is increasingly capturing information on domestic and smaller deals. In many countries, the distinction between purely domestic and international deals is blurred, as ownership and control through complex structures link national and international capital and companies in a multi-faceted way. Although these smaller and domestic deals have a similar impact to that of large-scale and internationally driven projects, they fall outside the current scope of the Land Matrix. Thus in this report we focus on deals where at least one international investor holds equity (except where we refer to a deal for specific reasons).

## 1.3. Data sources and reliability: making use of the best available data

Data in the Land Matrix is collected from a variety of sources. Company sources include, for example, annual reports, corporate presentations and media releases about stock exchange listings. Due to disclosure requirements, this latter category is a particularly useful data source for stock exchange-listed investors. A number of governments have attempted to increase the transparency of the large-scale land acquisitions they are involved in and have published contracts and other information online – for instance, Ethiopia and Liberia. In addition, other initiatives exist that aim to promote transparency: for example, the Land Matrix has partnered with Open Land Contracts (http://www.openlandcontracts.org), which contains a repository of contracts. However, while these contracts contain detailed information, they often fail to incorporate crucial information, such as specific locational data. Reliable and up-to-date information is found in research papers and policy reports, which are often based on on-the-ground experience. Authors of these reports regularly provide additional information to the Land Matrix when contacted by the regional focal points. As such, they form part of an ever growing local network of country informants providing updates on existing deals and new developments. The Land Matrix also uses media publications, which serve as a starting point to gather further information on reported deals. Crowdsourcing is a new tool on the Land Matrix website, but this is not yet used frequently. Figure 1 shows the frequency of each data source as a percentage of the total.

**Figure 1:** All sources in the Land Matrix




Note: N (deals) = 2,155, N (sources) = 5,056. For most deals several sources are given; double-counting is included.
Source: Authors' calculation based on Land Matrix data, April 2016.

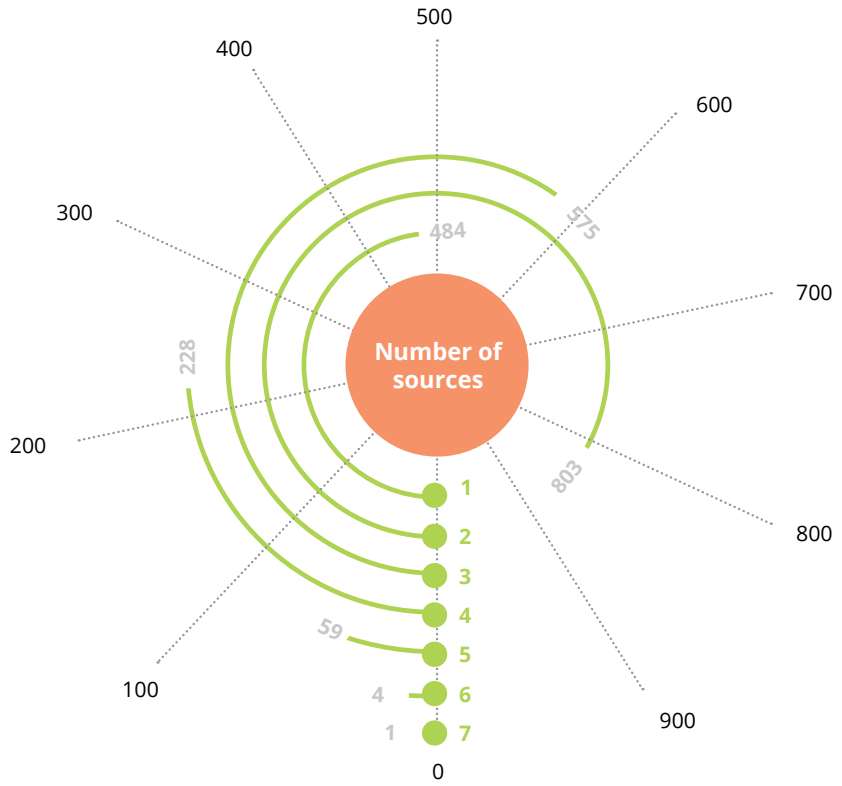
[2] The EC contribution is administered through France's technical cooperation agency, Expertise France.

The quality of data has improved markedly since the 2012 report. About 29% of data sources are media reports, followed by research papers and company sources with about 24% each. Only 6% of all deals (127 out of 2,155) are based solely on media reports without being backed up by any other source.

The sourcing strategy can be described as "snowball sourcing": one source serves as a starting point for further investigation. Thus, almost 80% of the deals reported are based on two or more sources, and 40% have between three and seven sources. This information increasingly allows for the "triangulation" of data, where using a variety of sources can significantly improve data quality (Figure 2).

In this context, investing in decentralised data collection has proved to be successful. The core partners and the regional focal points have successfully established a broad network in the different regions to obtain information and to have it cross-checked by experts, individuals working in government, the private sector, CSOs and interested members of the public on the ground.

**Figure 2:** Number of sources per deal (multiple entries)




Source: Authors' calculation based on Land Matrix data, April 2016.

"The opaque nature of land acquisitions imposes certain limits on the data-gathering process."

Despite all efforts, however, the dataset remains incomplete. Verification of basic data (such as deal size, location, investors involved, terms of the lease agreement or contract) can be challenging, with different sources providing conflicting information. In fact, even the very existence of a deal is sometimes difficult to prove. The opaque nature of land acquisitions imposes certain limits on the data-gathering process. For instance, in several countries there are no procedures for decision-making on land deals, and negotiations and decisions do not take place in the public realm. Furthermore, a range of government agencies and levels of government are usually responsible for approving land deals. Therefore even official data sources in the same country can vary, and none may actually reflect reality on the ground. Once a deal has been concluded, the attention paid to it often diminishes, and so its actual development on the ground remains uncertain to the LM team. Decisions are often changed, and changes may or may not be communicated publicly. Lastly, whereas intentions might be published, often nothing is announced if these intentions are abandoned. These limitations also introduce a number of biases to the dataset:

- Different levels of transparency regarding land acquisitions across the world. In some countries it is easier to obtain information than in others;
- Different levels of media and research interest in certain regions (e.g. Africa), in certain investors (e.g. emerging investor countries) and in certain sectors (e.g. agriculture and specifically biofuels).

The strength of the networks forged by Land Matrix partners in different regions has an impact on the quantity and quality of the data collected. For instance, LM partners have a stronger network in Africa than in Central Asia.

Another challenge is the quality of sources. Data errors may arise if the information provided by the source is inaccurate, which can be the case for both official and unofficial sources (for an example, see Box 2). Furthermore, information may be out of date, as deals can change rapidly. Hence, the data presented in this report is not to be taken as a complete representation of reality, but rather as indicative of general trends.

Despite these limitations, the Land Matrix data represents in our view the best available dataset on international land acquisitions.

The difficulties described above are common to any large-scale data collection initiative. However, the sample is now sufficiently large to reveal key patterns and trends. Given the relatively large amount of data, and the fact that we are communicating aggregated data, we believe that our findings are fairly robust. As a global database, the Land Matrix data hence does a good job in describing general trends, though it does not give detailed and balanced insights into the processes or impacts of large-scale land acquisitions (discussed further in Chapter 5). However, even for the analysis of processes and implications it can serve as a good starting point, as:

- Spatial data is (slowly) improving and allowing some land acquisitions to be put into the local context and to be combined with data on land use and land cover;
- There are a number of variables in the Land Matrix that touch upon impacts, though these are often only available for a few deals; and
- A wealth of individual cases is included in the Land Matrix, which can be used for further investigation.

Given these challenges, we welcome further feedback that will help us to contribute to further strengthening the Land Matrix database.

**Box 2:** The pitfalls of data collection – reflections from Sierra Leone

Over the past decade, Sierra Leone has experienced an increase in large-scale land investments, predominantly in resource extraction and commercial agriculture. In various reports available in the public domain, these investments are framed either in terms of promise (as drivers of development, often in reports produced by policy-makers) or of problems (as posing new challenges to local communities, usually in reports produced by NGOs). In all reports, positions appear to be straightforward and the facts appear to speak for themselves. However, reports on large-scale investments need to be treated carefully, as data is collected in highly complex social fields. This case study focuses on reports highlighting the problem perspective, as these often enter research debates as objective sources. In addition, the Land Matrix data draws (at least to a certain extent) on these reports and hence often deals with conflicting and biased information.

Sierra Leone is one of the poorest countries in the world, and so expectations of the benefits that large-scale investments might bring are, not surprisingly, extremely high. Indeed, there is ample evidence that many people gain from investments: this is visible, for example, in the growth and development of towns located near large-scale investment projects, increased job opportunities and improved living standards, including access to material goods. However, the effects vary across different groups of people and, although expectations are always high, they are not always met. This creates a fragmented social field, charged with a desire to break with a poor past and/or frustrations over the slow pace of development. Reports dealing with, for example, "broken promises" by a particular investor often fail to scrutinise this complex field of expectations. If a car was expected but a bicycle the result, the tendency is to declare life worse than before and promises broken, even though previously there may have been no mode of transport at all. "What was before" is thus very important, yet this is difficult to research. Moreover, expectations are fuelled by promises made by politicians and by companies trying to establish their projects, and by demands imposed on companies by NGOs.

Opinions on large-scale investments thus have a particular historical, social, economic and political context and people have strategic interests when formulating their concerns and desires. Furthermore, these can be framed differently according to the interlocutor. In his work "Cultivating Development" (2005), David Mosse shows how people carefully formulate their problems and needs taking into account what the conversation partner is able to deliver. This does not render these problems illegitimate, but it does highlight that the background and perspectives of data collectors and the framing of questions can influence results. Moreover, the fact that in the global North funds are available to scrutinise and make critical claims about large-scale investments in the global South may pose further challenges in the collection of data, as there is a pre-defined interest in a particular outcome. As a result, findings may be skewed and the risk is that the results will correspond with assumptions.

Short research periods for data collection contribute to these concerns. A short period is not enough to study evolving dynamics, let alone to contextualise statements and observations in a longer social history. Moreover, the timing of interviews and the people selected are key factors: discussions held during the day might be dominated by particular groups, such as the unemployed, for example. Using proper research methods and careful planning is thus essential, but this is often constrained by short time spans. It is therefore even more important to work with researchers who have an in-depth understanding of a particular place – which unfortunately is not always the case with commissioned studies.

These are just a few reflections on the complexities of collecting material in local contexts of large-scale investments, difficulties that are frequently not acknowledged or properly understood. They are not intended to discredit any of the work that has already been done, but to encourage anyone to treat reports on large-scale investments with caution (paying attention to the research background and methods used and the acknowledgement/ understanding of social complexities), and not as undisputed truths.

Source: Based on field research in Sierra Leone in 2013/2014.
Case study provided by Robert J. Pijpers, PhD fellow at the University of Oslo and guest researcher at GIGA.

## 1.4. Scope of this report

The Land Matrix database includes deals for agricultural production, timber extraction, carbon trading, industry, renewable energy production, conservation and tourism in low- and middle-income countries. However, due to limited coverage of certain sectors and in order to reduce biases in the dataset, we have used only a sub-set of the whole database for our global analysis, and have concentrated on those types of land acquisition where the currently available data is most complete. In particular, we only consider:

- Transnational deals: the Land Matrix focuses primarily on transnational deals. Although contributions from regional partners are leading to an increase in data on domestic deals, this sub-set of data is not yet sufficiently rich to provide a meaningful picture.
- Agricultural deals: The bulk of the source reports used by the LM team focus on agricultural deals. However, in Chapter 2 we also present a summary of forestry, tourism, conservation and industry projects. This corresponds to the deals currently visible on the public website of the Land Matrix.
- Concluded deals are defined as deals where we have credible reports about an oral agreement or a signed contract. Intended and failed deals are inherently difficult to verify. Although they have an impact on communities, it is extremely difficult to provide information in such cases. Nevertheless, in certain parts of the report we refer to other stages of the negotiation process (intended and failed deals) and present the corresponding data.

This report is based on a snapshot of the database taken on 25 April 2016. Since the database is continuously updated, the exact numbers in this report will differ from the information available on the website currently.

In addition, the case studies are intended to broaden the perspective and provide contextual information. Case studies hence can also include deals that are excluded from the overall analysis: for instance, we report on a mining company in Mongolia and its impacts on local people (Box 14).

# 2. Overview and Trends in Large-Scale Agricultural Land Acquisitions

This chapter provides an overview of the data collected in the Global Observatory of the Land Matrix. It first gives an overview of all the data contained in the database and then focuses on agricultural deals, where the Land Matrix has datasets that are sufficiently solid to allow for further, more detailed analysis of regional trends and trends in implementation.

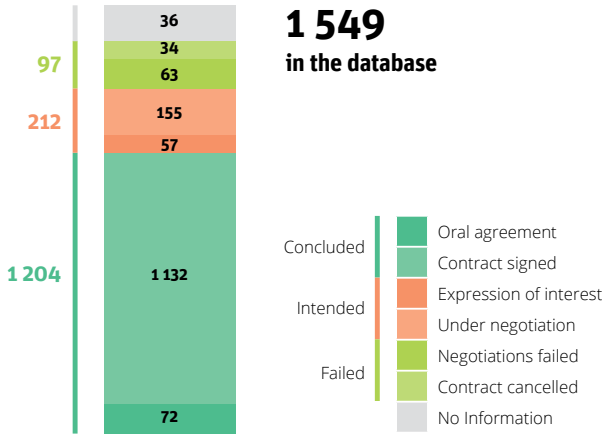
## 2.1. Overview of all deals

### 2.1.1. Database contains 1 549 deals in total

One important feature of the Land Matrix is the methodology it uses to differentiate key stages in the negotiation process of land deals. As land acquisitions are dynamic processes, it is important to report on the evolution of deals, from their announcement to the conclusion of a contract and the project's implementation, or even its failure. Sometimes cases also evolve further over time, e.g. a deal can be cancelled but is later renegotiated by other investors. The Land Matrix tracks deals that have a concluded contract but also deals that are not yet concluded (intended deals) and deals that have failed.[3]

As shown in Figure 3, the Land Matrix currently has details of 1,549 land acquisitions in which at least one foreign investor is involved, across all the different negotiation statuses. Table 1 provides an overview of these deals, also showing their size (differentiating between the intended size and the contract size; for more on this, see Box 3).

**Figure 3:** Data overview




Source: Authors' calculation based on Land Matrix data, April 2016.

**Table 1:** All international land acquisitions recorded in the Land Matrix database

| NEGOTIATION STATUS | NUMBER OF DEALS | SIZE INTENDED (MILLION HECTARES) | CONTRACT SIZE (MILLION HECTARES) |
|---|---|---|---|
| Oral agreement | 72 | 4.6 | 2.2 |
| Contract signed | 1 132 | 52.6 | 40.3 |
| Concluded deals | 1 204 | 57.2 | 42.4 |
| Expression of interest | 57 | 8.3 | n/a |
| Under negotiation | 155 | 12.0 | n/a |
| Intended deals | 212 | 20.2 | n/a |
| Negotiations failed | 63 | 6.0 | n/a |
| Contract cancelled | 34 | 1.2 | 0.9 |
| Failed deals | 97 | 7.2 | 0.9 |
| No information | 36 | 0.9 | 0.2 |
| **Total number of deals in the Land Matrix** | **1 549** | **85.5** | **43.6** |

Note: "n/a" stands for "not applicable".
Source: Authors' calculation based on Land Matrix data, April 2016.

[3] For a more detailed explanation of the methodoly, please refer to http://landmatrix.org/en/about/.

Intended deals can be considered an indication of future interest in land. Table 1 takes stock of 212 intended deals, targeting a total of 20.2 million hectares; hence we assume that interest in land remains high. However, looking more closely at sources, out of 169 deals for which we have this information, 125 (74%) have sources dating from before 2012. For these cases, it seems that implementation is uncertain or even unlikely; however, it is important to note that such deals can still have an impact on the target regions even though they are not operational – for instance, they could become a barrier to other development activities or investments by current land users.

**Box 3:** Size variables and conflicting information on the size of deals

The size of a deal is an important aspect that has caused some confusion amongst Land Matrix users in the past. The LM records three different size variables to give an accurate and realistic picture. The first time a deal is mentioned, for instance in a media report, we often find out only the intended size. This is frequently the size mentioned during the negotiation phase. Typically, this size exceeds the contract size (see Table 1) when the deal is formally agreed. The size that is actually under production (production size) is the most difficult to ascertain, as it keeps changing during the implementation stage when the farm expands its agricultural area. In cases where the production size is known but not the contract size, we use the production size as a proxy for the contract size.

In general terms, a broad range of figures quantifying the extent of land acquisitions can be found in online sources. Often, however, these figures differ significantly, for a number of reasons: for instance, the definition of the term "large-scale land acquisition", the timeframe and the size and logic used for aggregation.

The 97 failed deals show that not every expression of interest in land leads to a contract (negotiations fail), and also that some deals fail even after agreement is reached, resulting in the cancellation of a concluded contract. However, even though a contract might be cancelled, the initial acquisition may continue to have impacts on the target region as the land is often not returned to the original owners.

Looking at the 1,204 deals that have been concluded (oral agreement and contract signed), it can further be seen that the size of land that has come under contract is well below the size that was initially intended (see below). Still, to put this into perspective, the 42.4 million hectares of land that have come under contract represent about 0.8% of the world's total agricultural area and are equivalent to more than the total area of Germany (35.7 million hectares).

### 2.1.2. Size of deals

Looking at the intended size of deals in terms of the different negotiation statuses (see Table 2), Land Matrix data shows that deals that have been concluded are considerably smaller in size than deals that have failed and those that are intended. This indicates that projects of an exceptionally large scale might face a number of issues that can only be dealt with on a smaller scale. For example, managerial and technical difficulties may arise during the implementation phase, especially in challenging ecological, political and socio-economic environments.

**Table 2:** Intended size of deals according to different negotiation statuses

| NEGOTIATION STATUS | MINIMUM (HECTARES) | MAXIMUM (HECTARES) | MEDIAN (HECTARES)[4] | MEAN (HECTARES) | NUMBER OF DEALS | TOTAL SIZE INTENDED (MILLION HECTARES) |
|---|---|---|---|---|---|---|
| Failed | 200 | 1 000 000 | 20 000 | 74 406 | 97 | 7.2 |
| Intended | 400 | 1 500 000 | 19 000 | 95 511 | 212 | 20.3 |
| Concluded | 221 | 619 759 | 10 000 | 47 484 | 1 204 | 57.2 |

Source: Authors' calculation based on Land Matrix data, April 2016.

"Deals that have been concluded are considerably smaller in size than deals that have failed and those that are intended."

[4] The median is the "middle value": half of the data sample is below and half of the data sample is above this value. Compared with the mean, the median shows if data is skewed by very high or very low values. Here, the median is much lower than the mean, indicating that some very high values are skewing the mean.

State-owned companies and governments are particularly noticeable for the large average size of their deals in the intended phase but a smaller than average deal size when a contract is concluded. It should be noted that state-owned entities also have the lowest rate of concluded deals as a percentage of all deals (63.9% for government-related investors compared with 78% for all investor types – "other" and "no information" categories excluded) and have the highest percentage of failed deals (15% versus 7% overall).

Investigating the size of land under contract for the 1,204 concluded deals (57.2 million hectares), we see from a mean of 35,756 hectares and a median of 8,650 hectares that some very large deals are driving these results. Table 3 shows the number of deals according to different size classes, which confirms that almost three-quarter of deals are for less than 20,000 hectares, while only 13% of deals are for more than 50,000 hectares.

**Table 3:** Number of concluded deals according to contract size

| SIZE UNDER CONTRACT (HECTARES) | NUMBER OF DEALS | % |
|---|---|---|
| 200 to 2 000 | 233 | 19% |
| 2 001 to 5 000 | 185 | 15% |
| 5 001 to 10 000 | 280 | 23% |
| 10 001 to 20 000 | 161 | 13% |
| 20 000 to 50 000 | 165 | 14% |
| 50 000 to 200 000 | 112 | 9% |
| More than 200 000 | 45 | 4% |
| No information | 23 | 2% |

Source: Authors' calculation based on Land Matrix data, April 2016.

### 2.1.3. Choice of contracts shows a clear regional pattern

Table 4 shows the different types of contract recorded in the Land Matrix according to target continent. It can be seen that deals in Africa, Asia and Oceania almost exclusively use leases or concessions, while deals in the Americas focus on outright purchases. For deals in Eastern Europe, both options seem to be used frequently. Note that a concession implies user rights (and not a transfer of property rights); this type of contractual agreement is commonly used for forestry and mining projects.

**Table 4:** Nature of deals, by continent

| TARGET CONTINENT | LEASE/CONCESSION (NUMBER OF DEALS/%) | | OUTRIGHT PURCHASE (NUMBER OF DEALS/%) | | TOTAL (NUMBER OF DEALS) |
|---|---|---|---|---|---|
| Africa | 376 | 94% | 22 | 6% | 398 |
| Americas | 20 | 10% | 176 | 90% | 196 |
| Asia | 207 | 96% | 8 | 4% | 215 |
| Eastern Europe | 38 | 72% | 15 | 28% | 53 |
| Oceania | 40 | 98% | 1 | 2% | 41 |
| **Total** | **681** | **75%** | **222** | **25%** | **903** |

Source: Authors' calculation based on Land Matrix data, April 2016

These clear regional patterns can be explained by national laws: many countries, particularly in Africa, Asia and Oceania, do not allow the outright purchase of land, and in these cases land is often transacted between the government and an investor. Other countries, such as Brazil, allow land ownership by foreign companies and persons but impose limitations. In Latin America, land is often transacted between private entities. Lease contracts typically have a long duration. For 327 deals with lease contracts for which information is available, the duration of the lease ranges from three years to 99 years, and 94% of these leases run for at least 20 years. Again, the data shows that national legislation plays a major role in lease contracts: for example, 56 Cambodian deals have a duration of 70 years, 31 deals in Papua New Guinea last for 99 years and Zambia only allows leases of 99 years. Investors might also be averse to investing directly in land ownership and may prefer lease constructions.

## 2.2. Investment intention: focus on agriculture

Table 5 reports the investment intention of all concluded deals in the database, as given in the sources.[5] For the majority of deals – both in terms of the number of times an intention is mentioned (many deals report more than one intention) and the respective size – agriculture is the predominant intention.

**Table 5:** Intention of land acquisitions

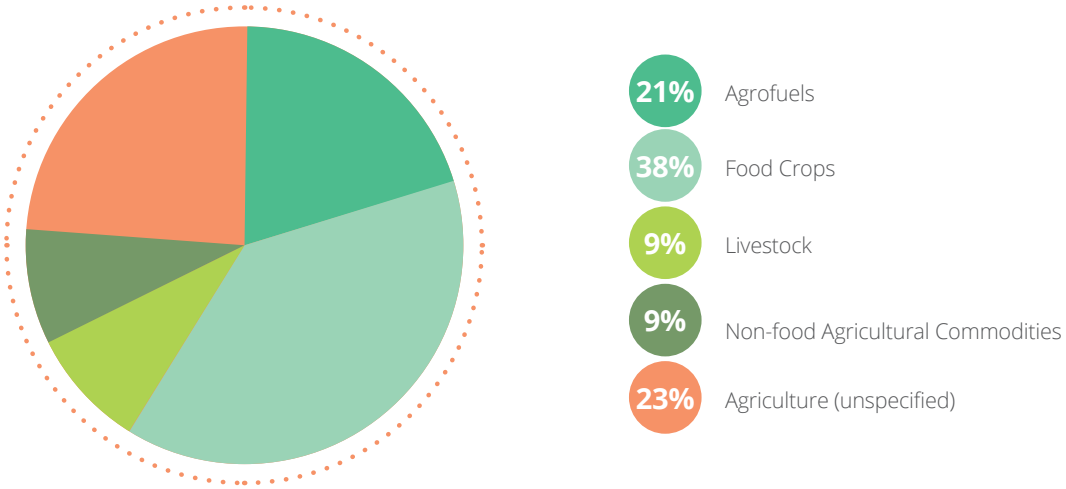
| INTENTION | NUMBER OF TIMES INTENTION IS MENTIONED | TOTAL CONTRACT SIZE (MILLION HECTARES) |
|---|---|---|
| Agriculture | 1 403 | 24.1 |
| – Agrofuels | 221 | 5.1 |
| – Food crops | 553 | 9.2 |
| – Livestock | 130 | 2.0 |
| – Non-food agricultural commodities | 236 | 2.3 |
| – Agriculture (unspecified) | 263 | 5.6 |
| Forestry | 187 | 12.0 |
| Tourism | 25 | 1.7 |
| Industry | 33 | 0.4 |
| Conservation | 20 | 1.4 |
| Renewable energy | 57 | 0.9 |
| Other intention | 28 | 1.0 |
| No information | 30 | 1.0 |
| **Total** | **1 783** | |

Note: Individual deals can have up to five different intentions listed. The Land Matrix does not provide information on the share of area for each intention; hence for this report we have divided the area under contract and attributed equal shares to each intention. We count the number of times an intention is mentioned and for N (deals) = 1,204, we report N (intentions) = 1,783.
Source: Authors' calculation based on Land Matrix data, April 2016.

Figure 4 shows the agricultural intentions of concluded deals, as recorded in the sources. Food crops continue to play the major role, both in terms of numbers of deals and total area, followed by agrofuels. The large proportion of deals (23% by area) that do not specify the intention of agriculture any further can largely be attributed to flex crops[6] for which the end use is not known. Oil palm is the largest of these crops, with multiple usages including food, fuel and cosmetics.

Looking solely at recent deals concluded since 2012, the category "agriculture unspecified" is even larger, accounting for 32% of the area, while agrofuels (18%) and food crops (36%) have a slightly smaller share.

**Figure 4:** Agricultural intentions of land acquisition (% of area)




Note: Individual deals can have up to five different intentions listed. The Land Matrix does not provide information on the share of area for each intention; hence for this report we have divided the area under contract and attributed equal shares to each intention.
Source: Authors' calculation based on Land Matrix data, April 2016.

[5] The variable "intention" in the database records what the sources state on the intention of the investment and is not automatically derived from the crops involved.
[6] Flex crops have multiple end uses, for example as food, animal feed, fuels or industrial materials.

As illustrated in Table 6, there are some quite noticeable regional differences in agricultural intentions: for instance, agrofuels are the largest intended crops in Africa and on the American continent and are also significant in Asia and Oceania, but are negligible in Europe. Food crops are important everywhere but are particularly significant in Europe and the Americas, where they occupy almost half of the acquired area. Livestock deals play hardly any role in Africa or Asia, but are quite important in Europe and the Americas.

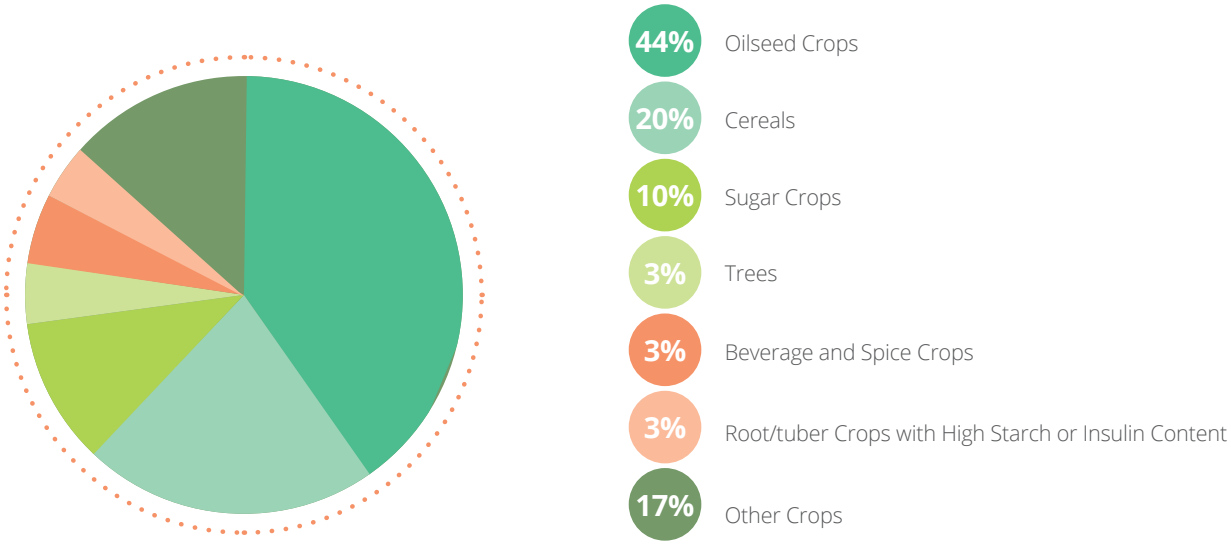
**Table 6:** Agricultural intentions across regions (% of area)

| | AFRICA | EUROPE | AMERICAS | ASIA | OCEANIA | GLOBAL |
|---|---|---|---|---|---|---|
| Agrofuels | 32% | 1% | 29% | 16% | 16% | 21% |
| Food crops | 39% | 45% | 50% | 21% | 30% | 38% |
| Livestock | 3% | 17% | 16% | 1% | 11% | 8% |
| Non-food agricultural commodities | 9% | 1% | 1% | 29% | 3% | 9% |
| Agriculture (unspecified) | 17% | 37% | 4% | 33% | 40% | 23% |

Note: Individual deals can have up to five different intentions listed. The Land Matrix does not provide information on the share of area for each intention; hence for this report we have divided the area under contract and attributed equal shares to each intention.
Source: Authors' calculation based on Land Matrix data, April 2016.

Land Matrix data also allows investigation of the crops that investors grow: we have information on individual crops for a subset of 930 concluded deals. Figure 5 shows different categories of crop according to FAO's Indicative Crop Classification (ICC). The majority fall into the categories of oilseed crops, including oil palm and jatropha (44%), and cereals (20%), followed by sugar crops (10%).

**Figure 5:** Crops cultivated (% of area)




Note: Based on FAO's ICC classification, in percentage of area under contract. Individual deals list up to seven different crops. The Land Matrix does not provide information on the share of area for each crop; hence for this report we have divided the area under contract and attributed equal shares to each crop. We have counted the number of times a crop is mentioned and for N (deals) = 930, we report N (crops) = 2,007.
Source: Authors' calculation based on Land Matrix data, April 2016.

"Most significant are projects for oil palm cultivation, followed by jatropha and sugar cane."

"Looking at the most significant crops in more recent deals (since 2012), jatropha loses importance."

Figure 6 looks further into individual crops and shows the most important ones according to the size of land under contract. Most significant, with almost 6 million hectares (220 deals), are projects for oil palm cultivation, followed by jatropha (2.4 million hectares, 92 deals[7]) and sugar cane (1.9 million hectares, 92 deals). The average size of deal varies considerably, as can be seen from the number of times a crop is mentioned and the size of area for each crop. Looking at the most significant crops in more recent deals (since 2012), jatropha – which is most commonly cultivated as a biofuel – loses importance, with only four new deals in the last four years. Also, many jatropha deals are being abandoned: of 97 failed deals, 20 involve jatropha.

**Figure 6:** Leading crops according to area under contract

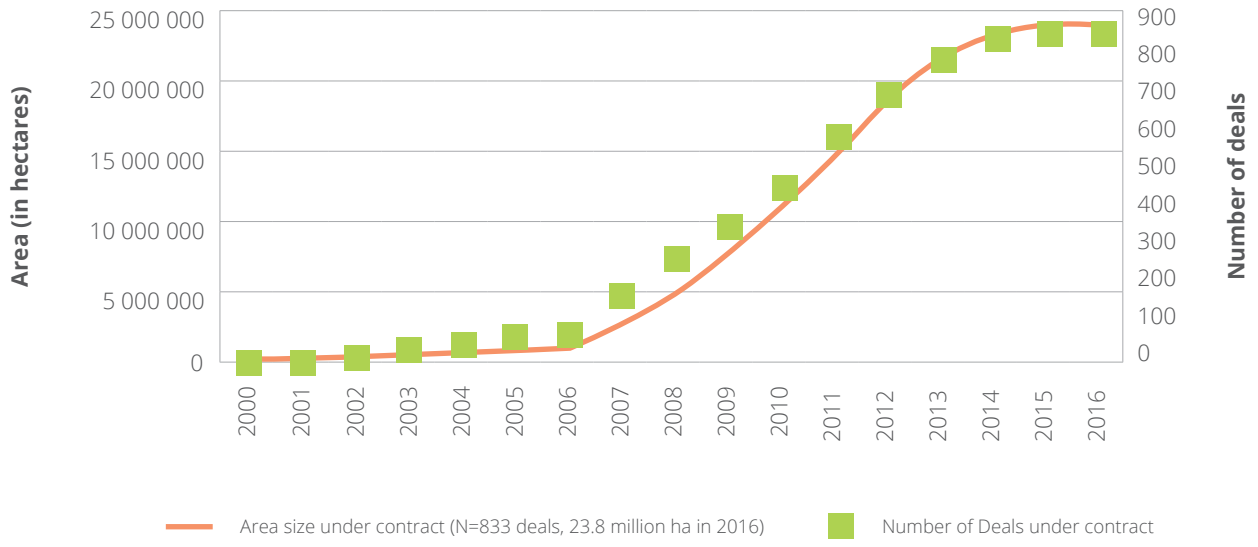

Note: Individual deals list up to seven different crops. The Land Matrix does not provide information on the share of area for each crop; hence for this report we have divided the area under contract and attributed equal shares to each crop.
Source: Authors' calculation based on Land Matrix data, April 2016.

## 2.3. The "rush for land" is moving towards the implementation phase

Figure 7 shows the trend in reports of concluded agricultural deals contained in the Land Matrix from 2000 to 2016. There was a steep increase in deals around 2005, and a levelling out around 2012. The slower growth in recent years does not necessarily mean that fewer deals are being concluded: it might also be caused by a time lag in the availability of information, since it often takes some years before a land acquisition becomes known publicly. Reasons that would explain a real slowdown – meaning a decrease in the rate of land acquisitions – could include the financial crisis, a decrease in commodity prices or social unrest. At present we are not able to distinguish whether the levelling out is due to a reporting bias or to a real decrease in land acquisitions. However, it is worth noting that the same trend of levelling off was seen for 2010 in the previous Analytical Report and that this has now disappeared – an indication that reporting bias plays an important role.

[7] Although many jatropha deals have failed, the Land Matrix still contains details of 92 jatropha deals with a concluded contract. Of those, 17 are in the start-up phase and 33 are in operation. Of the remainder, five have not started, 22 have been abandoned and for 15 the implementation status is unknown.

**Figure 7:** Transnational agricultural deals with a concluded contract, 2000–2016




Note: Figures for size and number of deals are cumulative. For 171 concluded deals, the year in which the deal was concluded is unknown.
Source: Authors' calculation based on Land Matrix data, April 2016.

Once a contract is concluded, we can see whether deals are implemented or not. There can be many reasons for a failure to develop the land, including financial constraints, management problems or land price speculation (see Box 4).

**Box 4:** Large-scale projects forced to scale down by target governments

In 2009 Herakles Capital, a US venture capital firm, signed a 99-year memorandum of understanding (MoU) with the Government of Cameroon for 73,086 hectares of land (Case #1159 in the Land Matrix).[8] The lease was signed in 2013; however, the government allocated the company only 19,843 hectares for oil palm production. The lease was for three years, with an option to extend to 99 years depending on the initial investment. However, operations were suspended in 2013 after fierce criticism and protests from the local population and civil society. By 2015 the company was in a dire financial situation and, in order to address this, began exporting timber to China. Evidence came to light of a range of breaches of regulations in the plantation's licensing and operation; however, it came under new leadership late in 2015 and land clearing has continued – indeed, its pace has accelerated. The company appears to have focused its efforts on salvaging land for oil palm production near the town of Nguti, while forsaking its other sites near the towns of Mundemba and Toko.

In Ethiopia an Indian investor, Karuturi Global Limited, obtained an MoU for 300,000 hectares in 2008 for a period of 99 years (Case #1205). In 2010 the federal government reduced the size of the agreement to 100,000 hectares for 50 years, as 300,000 hectares was deemed excessive and beyond the company's capacity for development. The full 100,000 hectares was meant to be cultivated within two years from the date the contract was signed, and the government gave the company two written warnings that the land would be taken away unless it was brought into full production. Subsequently, the land under contract was further reduced from 100,000 hectares to 1,200 hectares in 2015. Karuturi is challenging the government over this; it has obtained a court order protecting the lease and is prepared to seek international arbitration.

Meanwhile in Zambia, Wuhan Kaidi, a Chinese company, wanted to acquire 300,000 hectares of land for biofuel production and signed an MoU for 80,700 hectares (Case #3739). However, when it signed the lease agreement in 2011 the size was reduced to 4,000 hectares. This followed a change of government; the new President said that only 4,000 hectares would be granted, with an increase if the company performed well. The investor abandoned the project, stating that the land offered was inadequate to justify the $450 million project.

Source: Land Matrix, 2016.
Case study provided by Angela Harding, University of Pretoria, Regional Focal Point Africa.

[8] You will note that some of the boxes mention specific deals that have ID numbers. These ID numbers correspond to the Land Matrix ID so that you can look them up on the Land Matrix homepage (www.landmatrix.org).

In order to account for the dynamics of implementation, the Land Matrix not only distinguishes between the different negotiation statuses with different size variables (as discussed above) but also defines four different stages of implementation applicable only to concluded deals. These implementation statuses are:

- Project not started: no activity is taking place on the land.
- Start-up phase: there is activity on the ground but no production is yet taking place. For example, the ground has been cleared or a nursery for tree crops has been established.
- In operation: projects are actually producing.
- Abandoned: projects have come to a halt after a contract has been concluded. These projects may stop only temporarily due to financial constraints or other problems, but move to the "failed" category when there is no chance that they will restart operations. It is important to note that for abandoned projects the land still belongs to the investor, whereas in failed deals the investor has relinquished ownership of the land (lease or purchase).

Information on the implementation of deals is particularly difficult to obtain, as this information can change rapidly and might not be reported as prominently as the acquisition itself.

Table 7 compares recent figures on implementation status with figures published in the Land Matrix Newsletter in June 2013.[9] From this comparison, two major trends emerge. First, our database is growing: we can see that all of the different implementation statuses have more cases today compared with June 2013. Second, the data quality is improving, as indicated by fewer deals in the "no information" category. Third and most interestingly, deals are now actually being implemented. The biggest increases in numbers of deals are in the categories of "start-up phase" (+54%) and "in operation" (+87%): we now have 710 deals that have at least started implementation, on a contracted land size of 18.5 million hectares (about half the size of Germany). It remains difficult to track the area under production, though currently the Land Matrix records 6.4 million hectares that are reported to be under production, almost quadruple the area in June 2013. The data on implementation status strongly suggests that the rush for land has now entered its implementation phase, though we are yet to see the full impacts of these deals.

"Slower growth in recent years does not necessarily mean that fewer deals are being concluded: it might also be caused by a time lag in the availability of information."

**Table 7:** Implementation status of agricultural deals

| IMPLEMENTATION STATUS | NUMBER OF CONCLUDED DEALS | | CONTRACT SIZE (MILLION HECTARES) | | SIZE IN PRODUCTION (MILLION HECTARES) | |
|---|---|---|---|---|---|---|
| | April 2016 | June 2013 | April 2016 | June 2013 | April 2016 | June 2013 |
| Project not started | 63 | 49 | 2.8 | 3.4 | n/a | n/a |
| Start-up phase (no production) | 106 | 69 | 2.0 | 2.4 | n/a | n/a |
| In operation (production) | 604 | 323 | 16.5 | 12.0 | 6.4 | 1.7 |
| Project abandoned | 37 | 35 | 1.1 | 2.1 | n/a | n/a |
| No information | 194 | 279 | 4.3 | 12.4 | n/a | n/a |
| **Total** | **1 004** | **755** | **26.7** | **32.3** | **6.4** | **1.7** |

Note: "n/a" stands for "not applicable".
Source: Authors' calculation based on Land Matrix data, April 2016.

However, it is unclear whether the figures presented in Table 7 show the dynamics on the ground or rather the dynamics of the LM database. For a small sub-set of deals, the Land Matrix data has more detailed information; below we present three such data sub-sets that allow us to understand the underlying dynamics of implementation. In these cases, Land Matrix data reflects the development of deals over time and not the development of our data collection efforts.

[9] The newsletter can be accessed here: http://landmatrix.org/media/filer_public/2013/06/10/lm_newsletter_june_2013.pdf

First, Figure 8 shows the sub-set of deals for which we know the size under production (N = 330). We compare how the area under contract and the area under production have developed between 2000 and 2016. As in Figure 7, we see a steep rise in the area under contract between 2005 and 2014. The area under production has developed only very slowly alongside land acquisitions, but has been on a steep growth curve since 2010. Today, 55% of the area under contract has been brought into production for this sub-set of deals. This clearly shows that for those deals that are being implemented, investors are bringing land under production at a growing rate.

**Figure 8:** Development of land size under contract and size under operation


Source: Authors' calculation based on Land Matrix data, April 2016.

Table 8 shows a sub-set of deals for which we know more than one implementation status (N = 117)[10] and hence can follow the implementation of an individual deal. We see that the majority of these deals have changed from "start-up phase" to "in operation" (82), while 20 deals have been abandoned.

Table 8 gives only the most recent status but contains information on intermediate statuses in the footnotes.

**Table 8:** Transition from first reported implementation status to current implementation status

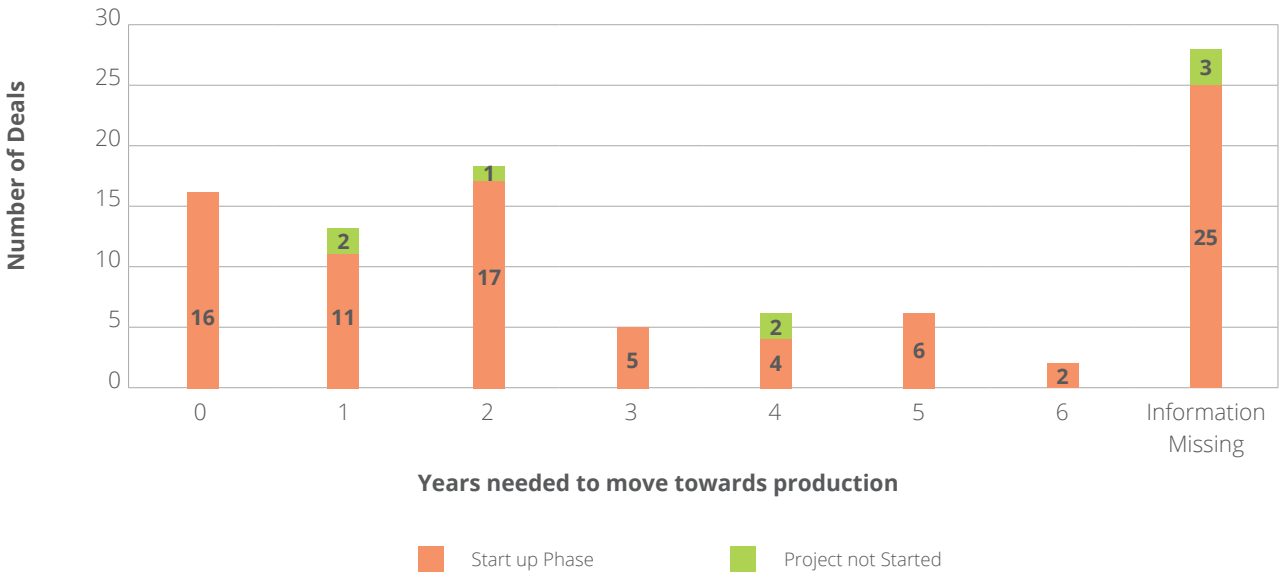
| | CURRENT IMPLEMENTATION STATUS | | | | |
|---|---|---|---|---|---|
| **FIRST REPORTED IMPLEMENTATION STATUS** | **PROJECT NOT STARTED** | **START-UP PHASE (NO PRODUCTION)** | **IN OPERATION (PRODUCTION)** | **PROJECT ABANDONED** | **TOTAL** |
| Project not started | | | 8 | | **8** |
| Start-up phase (no production) | 1[11] | 4 | 82 | 12[12] | **98** |
| In operation (production) | | | | 8 | **9** |
| Project abandoned | | 1[13] | | 1 | **2** |
| **Total** | **1** | **5** | **91** | **20** | **117** |

Note: "n/a" stands for "not applicable".
Source: Authors' calculation based on Land Matrix data, April 2016.

[10] Most of these deals have information on two implementation statuses; four deals have three different statuses.
[11] This is Case #1872, where the investor established a nursery in 2008. In 2012 activities were halted due to financial problems, but in 2014 the company began production – so this deal is now under production.
[12] Four of these deals have three different implementation statuses: they have moved from "start-up phase" to "in operation," and are marked as "project abandoned" in the most recent stage.
[13] Abandoned projects may be abandoned only temporarily, as shown by one deal that has moved from the "abandoned" to the "start-up phase" category. This is Case #1498, the Markala sugar project in Mali: the project faced political and financial challenges, but the stakeholders have been able to partly revive it.

Figure 9 shows the time that deals need to transit from either the implementation status "project not started" (N = 8, displayed in green) or "start-up phase" (N = 86, displayed in orange) to an implementation status of "in operation." Most deals enter the production phase in less than three years and more than half in less than two years.

**Figure 9:** Years needed for projects to move to production phase




Note: N = 94 projects transiting from "project not started" and "start-up phase" to production.
Source: Authors' calculation based on Land Matrix data, April 2016.

## 2.4. Regional trends and top target countries

### 2.4.1. Africa remains the most targeted continent

Africa remains by far the most targeted continent, with 422 concluded agricultural deals involving a total area of almost 10 million hectares (Table 9), according to Land Matrix data. Asia has the second largest number of deals, with 305 deals involving 4.9 million hectares. Eastern Europe has only 96 deals but in terms of total size accounts for more than 5 million hectares, while Latin America is represented with 146 deals and 4.5 million hectares. Oceania, which in the context of the Land Matrix includes only Papua New Guinea and the Pacific islands, is the least targeted region, with 35 deals on 2.2 million hectares; however, overall, the average deal size is largest in this region.

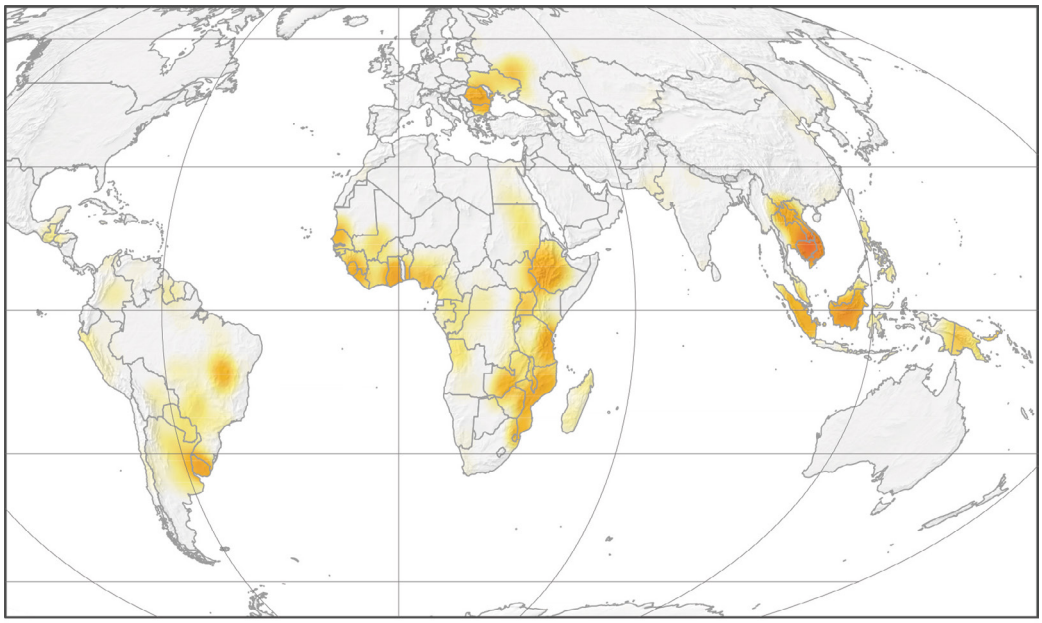
**Table 9:** Continental breakdown of target regions for agricultural deals

| REGION | NUMBER OF CONCLUDED DEALS | TOTAL SIZE OF CONCLUDED DEALS (MILLION HECTARES) |
|---|---|---|
| Africa | 422 | 10.0 |
| Eastern Europe | 96 | 5.1 |
| Asia | 305 | 4.9 |
| Latin America | 146 | 4.5 |
| Oceania | 35 | 2.2 |
| **Total** | **1 004** | **26.7** |

Source: Authors' calculation based on Land Matrix data, April 2016.

Figure 10 depicts the 943 geo-referenced agricultural deals contained in the Land Matrix in a heat map, with the concentrations of land deals highlighted in intensity from yellow to orange.

**Figure 10:** Global heat map of land deals contained in the Land Matrix



Projection: Mollweide
Map: Manuel Abebe

Note: In this heat map, high densities of 943 concluded agricultural deals at different levels of geospatial accuracy are shown in orange, transitioning into yellow for lower densities. The map was created using the Kernel Density tool in ArcGIS 10.3 mapping software, with a search radius of 5 decimal degrees.
Source: Land Matrix, 2016.

Looking at Africa, the map shows a concentration of land acquisitions in West Africa and in Eastern Africa, stretching from Sudan to Mozambique. It not only shows which countries have been targeted, but more importantly it highlights the patterns of concentration of land deals within the target regions and countries. This gives an indication of the factors that may influence the choice of location for a land deal. For example, the area along the River Nile is visible, indicating that in a dry area agricultural land deals are concentrated where water is available. This effect can also be observed in northern Senegal, where a large number of land deals have been completed along the Senegal River, and in Mali along the Niger.

Within large countries, some areas of higher concentration are clearly highlighted – for instance, in the southwestern corner of Russia. In Eastern Europe, Bulgaria and Romania also have many reported deals.

Land Matrix records on deals in Asia originate mainly from a few countries in South-East Asia, including Cambodia, Laos, Indonesia and the Philippines. An example of where data is missing in this region is Myanmar, a country that is not well represented in the database, despite reports of a high incidence of land acquisitions in that country (Global Witness, 2015).

### 2.4.2. Top target countries

Beyond this global overview, a more detailed analysis of the Land Matrix data reveals a considerable concentration of deals in a small number of countries. Figure 11 shows the top 20 target countries, with concluded deals according to the size under contract. Together they account for 21.9 million hectares for 675 concluded deals (82% of the total size of all concluded agricultural deals and 67% of the total number).

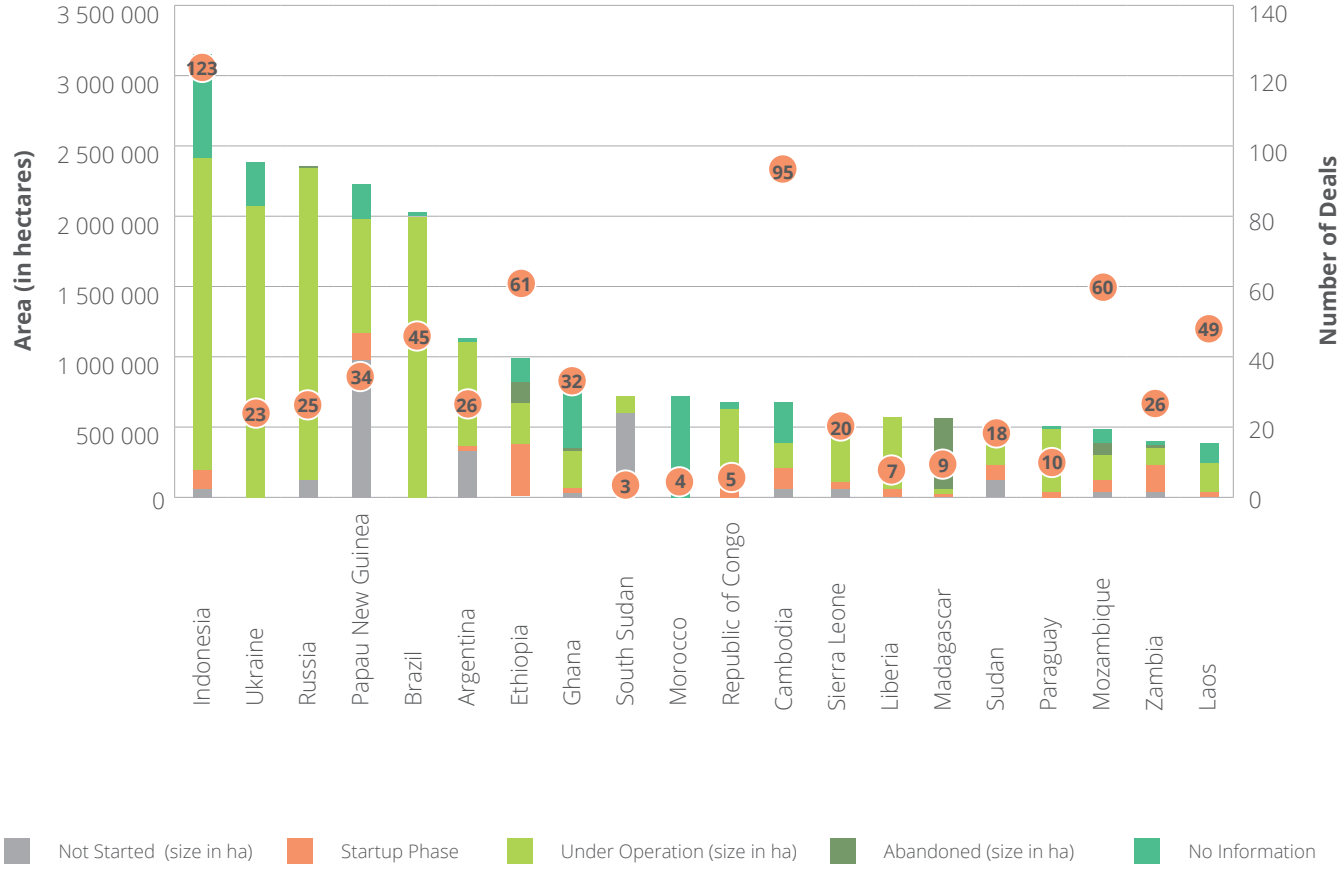
The top five target countries alone, where the international acquisition of agricultural land is most concentrated, account for 46% of the total size of all concluded agricultural deals (25% of the total number). These countries are Indonesia, Ukraine, Russia, Papua New Guinea and Brazil. With the exception of Papua New Guinea, these countries are also characterised by large areas of acquired land that are already in operation (9.4 million hectares out of 12.2 million hectares in these five countries).

The percentage of land that is already under operation, however, varies greatly between countries. The different colours in Figure 11 show the different implementation statuses of deals. In some countries, large areas have been taken under contract but large parts of these areas are not yet in production, e.g. in Papua New Guinea, Argentina and South Sudan. In other countries, large areas are in the start-up phase and so further development

can be expected in the years to come, e.g. in Ethiopia, Cambodia and Zambia. Some countries are very far advanced with implementation. For instance, all deals in Paraguay are in operation, as are the majority of deals in Russia, Indonesia, Ukraine and Brazil. In other countries abandoned projects account for quite large areas, for instance Madagascar. In some countries, we do not have any information on implementation status, for instance Morocco, Indonesia and Cambodia. These figures can be significantly affected by one large deal or by a bigger number of small deals.

The dots represent the number of deals in these top target countries. Some countries have only a very few deals but they are large (e.g. Ukraine, Morocco or the Republic of Congo), while others have many deals but a relatively small total area (e.g. Cambodia and Mozambique). The top target country, Indonesia, has the most deals in terms of both size and numbers. If the list of top target countries were determined by the number of concluded deals, we would lose countries with only a few deals (South Sudan, Morocco, Congo, Liberia, Madagascar and Paraguay), and instead have Romania (44 deals), Uruguay (32), Tanzania (31), Nigeria (20), Senegal (14), the Philippines and Uganda (14 each) in the top 20.

**Figure 11:** Top 20 target countries according to size of concluded deals (showing different implementation statuses)

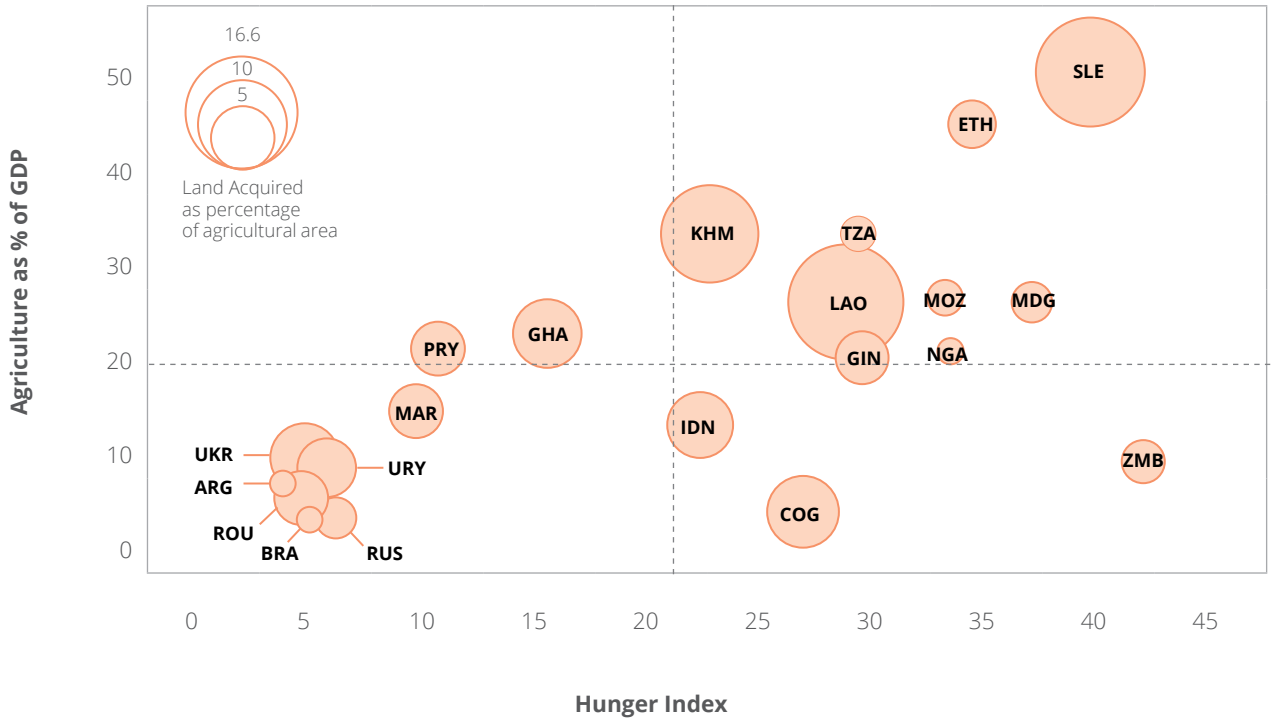



Note: dots indicate the number of deals (right y-axis), bars indicate the size of land (left y-axis).
Source: Authors' calculation based on Land Matrix data, April 2016.

### 2.4.3. Many deals take place in a context of poverty and food insecurity

To understand the environment in which large-scale land acquisitions take place and hence the potential impact on the target country, and also to understand the context that is likely to attract investors, this section provides a perspective on the socio-economic indicators of the most targeted countries.

**Figure 12:** Typology of land acquisitions according to the Global Hunger Index 2015 and agricultural GDP




The size of the bubble represents the area of acquired land relative to the available agricultural area in any given country

Note: This figure shows 21 of the 25 top target countries with the largest areas of reported land acquisitions; due to a lack of data, Papua New Guinea, Sudan, South Sudan and Liberia have been omitted. In comparison with the top 20 target countries presented above in Figure 11, this figure adds the next five most targeted, namely Uruguay (URY), Romania (ROU), Guinea (GIN), Tanzania (TZA) and Nigeria (NGA). Due to a lack of data, the figure for Zambia on agriculture's percentage of GDP is not from 2014 but from 2013. Country abbreviations are based on the ISO 3166-1 alpha-3 standard: UKR (Ukraine); ARG (Argentina); RUS (Russia); BRA (Brazil); MAR (Morocco); PRY (Paraguay); GHA (Ghana); IDN (Indonesia); COG (Congo, Republic of); ZMB (Zimbabwe); KHM (Cambodia); LAO (Laos); MOZ (Mozambique); MDG (Madagascar); ETH (Ethiopia); SLE (Sierra Leone). The x-axis indicates the Global Hunger Index (GHI): the higher the number the more severe is hunger, as measured by a multi-dimensional index (http://www.ifpri.org/topic/global-hunger-index). The y-axis gives the percentage of agricultural GDP of the total GDP. The size of the bubbles indicates the percentage of the contracted area related to the agricultural area. The dotted lines show the corresponding mean value for the countries depicted.
Data: Land Matrix 2016, World Bank 2014, FAO 2016, IFPRI 2015.

Figure 12 depicts the top target countries in a matrix representing them in terms of the incidence of hunger and the contribution of agriculture to their gross domestic product (GDP). In order to put the area of acquired land into perspective, the figure represents the share of land acquired as a percentage of the total agricultural land in a given country.[14] This representation shows that there are two main target groups of countries. The first group consists of countries with a high GHI and a high dependence on their agricultural sectors. These countries can be seen in the upper right corner of the graphic, and include Laos, Cambodia and Sierra Leone. On the one hand, this result is in line with economic arguments that support land acquisitions as a means of attracting investments in agriculture, with the aim of producing more food and creating jobs. If these investments create substantial numbers of jobs and produce food for domestic markets, then they might contribute to eradicating hunger and poverty in those countries, according to this line of reasoning. On the other hand, these potential benefits need to be weighed against the potential loss of land to small-scale producers and indigenous peoples, who are often highly dependent on land for their own food security and have few alternatives for income generation. If the land acquired is used for the production of biofuels or food destined for export markets, then such benefits are even less obvious, although the potential contribution to rural development still needs to be factored in.

Countries such as Russia, Ukraine, Brazil and Uruguay represent the second group, clustered in the lower left corner. Countries in this group have a much lower GHI and agriculture is proportionally less important to their national economies. In this group, the context and hence the process is very different from those in the first group. For instance, in Eastern Europe land acquisitions take place in the context of a transition from centrally planned state economies to more capitalist and free market economies, which has involved unique challenges (see Box 5). In South America, unlike other continents, land acquisitions mostly involve the purchase of land in transactions between private land-owners, without the involvement of the state as an intermediary (see Chapter 3).

[14] When interpreting these results, it must be taken into account that the comparison is made with agricultural areas as defined by FAO, i.e. they include arable land, permanent crops and grazing land, and that some of the land acquired is land that was previously used as pastures or forests, and not only arable land.

**Box 5:** Eastern Europe – a special history in the development of land ownership

The post-socialist countries in Eastern Europe have distinctive conditions that highlight the influence of local economic and political circumstances and of policy frameworks on the specificities of large-scale land investments. Belarus, Ukraine, Romania, Russia and Bulgaria (the countries in this region featured in the Land Matrix) have all experienced a similar course of development of land ownership and use, which ultimately has seen collective farms replaced by large-scale agricultural enterprises.

After the collapse of the USSR, these countries reorganised land ownership by distributing land plots amongst the population, to be used for their own production. The assets of collective farms were fragmented and small parcels of land (of about 0.4 hectares) were granted to citizens – either to "those who work it", as in Ukraine (OSW, 2014) or to the "original" owners, as in Bulgaria (TNI, 2013) – and to newly created non-state businesses. In most cases the new land-owners were not issued with title deeds. As a result, large areas of agricultural land in Eastern European remain (nominally at least) in the hands of a vast number of landholders, (semi-)subsistence farmers and smallholder producers.

Despite this recent history, Eastern Europe today stands out as a region where extraordinarily large areas are being acquired by large-scale investors, both international and local; some of these investors started life as newly created non-state businesses in the immediate post-socialist period. Such investments, which often involve collaboration between local companies and foreign investors, have seen deals involving areas of up to 654,000 hectares, as in the case of UkrLandFarming's operations in Ukraine. Usually, the land used by these companies is acquired through leaseholds, joint ventures or the merger and acquisition of smaller players (as is often the case in Ukraine, for instance).

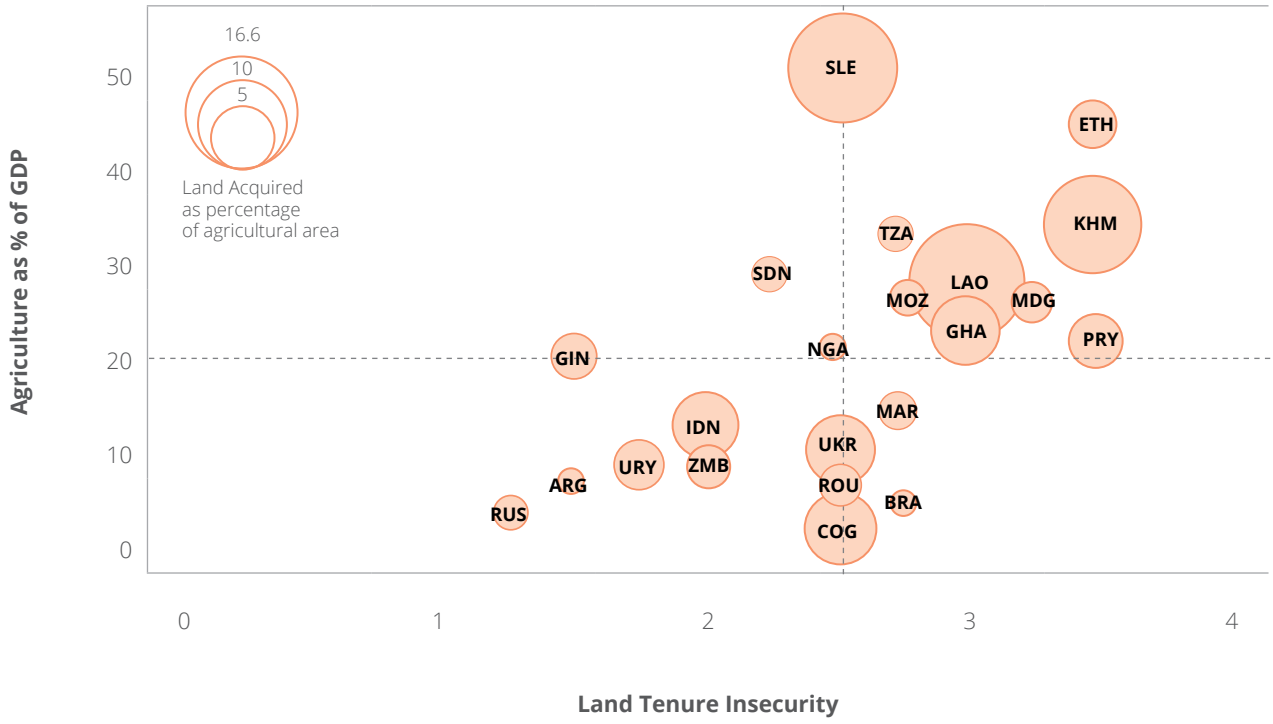
The growing concentration of farmland in Eastern Europe in the hands of financially strong investors is encouraged by fertile soil and cheap land prices, but it is reinforced by national and international policies: both domestic governments and the European Union (EU) support large-scale, export-oriented agricultural projects. Moreover, many land-owners in Eastern Europe have abandoned their plots due to a lack of income opportunities and financial and technical resources, as well as a lack of experience in agriculture. These abandoned plots have fuelled demand from commercial farmers in search of land.

Sources: Eco Ruralis (2014); European Parliament (2015); OSW (2014); Schivatcheva (2014); Spoor and Visser (2011); TNI (2013).
Case study provided by Anne Hoss and Afia Afenah, GIGA.

### 2.4.4. Tenure insecurity as a driver of land acquisitions

An important question and issue for debate is whether and to what extent security of land tenure can be considered a driver of land acquisitions (Dwyer, 2013). It is possible that a high degree of land tenure security is a factor that attracts investors, as stable and clear conditions regarding tenure are important for the long term? On the other hand, low levels of tenure security could also encourage land acquisitions, as such conditions might create opportunities for investors to acquire quick access to large tracts of lands within legal systems that give little scope for local populations to defend their own rights to land. Figure 13 shows that a number of countries that are significant targets of land acquisitions (such as Cambodia, Ethiopia, Madagascar, Laos and Ghana) are characterised by weak land tenure security, despite agriculture being a very important sector in their national economies. The figure implies a strong correlation between weak tenure security and land acquisition, a correlation already shown by others (Deininger, 2013; Anseeuw 2012). The implementation of deals in countries where land tenure security is low could also imply a difficult future for some of these projects, as conflict over land might hinder the further development of some deals, preventing the potential economic benefits of such investments from being realised.

**Figure 13:** Typology of land acquisitions: land tenure insecurity and agricultural GDP




The size of the bubble represents the area of acquired land relative to the available agricultural area in any given country

Note: This figure shows 22 of the 25 countries with the largest areas of reported land acquisitions. Due to a lack of data, Papua New Guinea, South Sudan and Liberia have been omitted. Also due to a lack of data, agriculture's percentage of GDP for Zambia is not from 2014 but from 2013. See Figure 12 for the list of names of countries corresponding to the ISO 3166-1 alpha-3 standard.
Data: Land Matrix 2016, World Bank 2014, FAO 2016, CEPIL 2012.

## 2.5. Synthesis

The Land Matrix currently reports on a total of 1,204 concluded land acquisitions on 42.4 million hectares of land. It also takes account of 212 intended deals, most of which have been dormant for a number of years, and 97 failed deals that may still continue to impact upon target regions. Three-quarters of concluded deals are for less than 20,000 hectares, but there are also some very large deals: 45 are larger than 200,000 hectares. Agriculture continues to be the main intention recorded in the Land Matrix, followed by forestry. Within agricultural intentions (totalling 26 million hectares), food crops play the major role, followed by agrofuels. There is also a huge and growing area being used for unspecified agricultural deals. These are typically crops that can be used for multiple purposes, such as oil palm. This is reflected in the fact that 44% of all deals produce oil seeds, though recently there has been a decline in the importance of jatropha deals.

The Land Matrix shows a growing trend of implementation: many deals have concluded contracts and these are bringing land under production at a growing rate. Usually, implementation is quite rapid: most deals moving into the implementation stage do so in less than three years.

Africa continues to be the most targeted region, followed by Asia, Eastern Europe and the Americas. There are a number of significant target countries in West and Eastern Africa. Within countries, in drier areas acquisitions are particularly concentrated along important rivers such as the Nile. The Land Matrix also shows a wide diversity of countries affected; those with a high Global Hunger Index, those where the agricultural sector is a particularly important part of the economy and those where tenure security is low are amongst those most strongly targeted.

# 3 The Investors: Who, Where and Why?

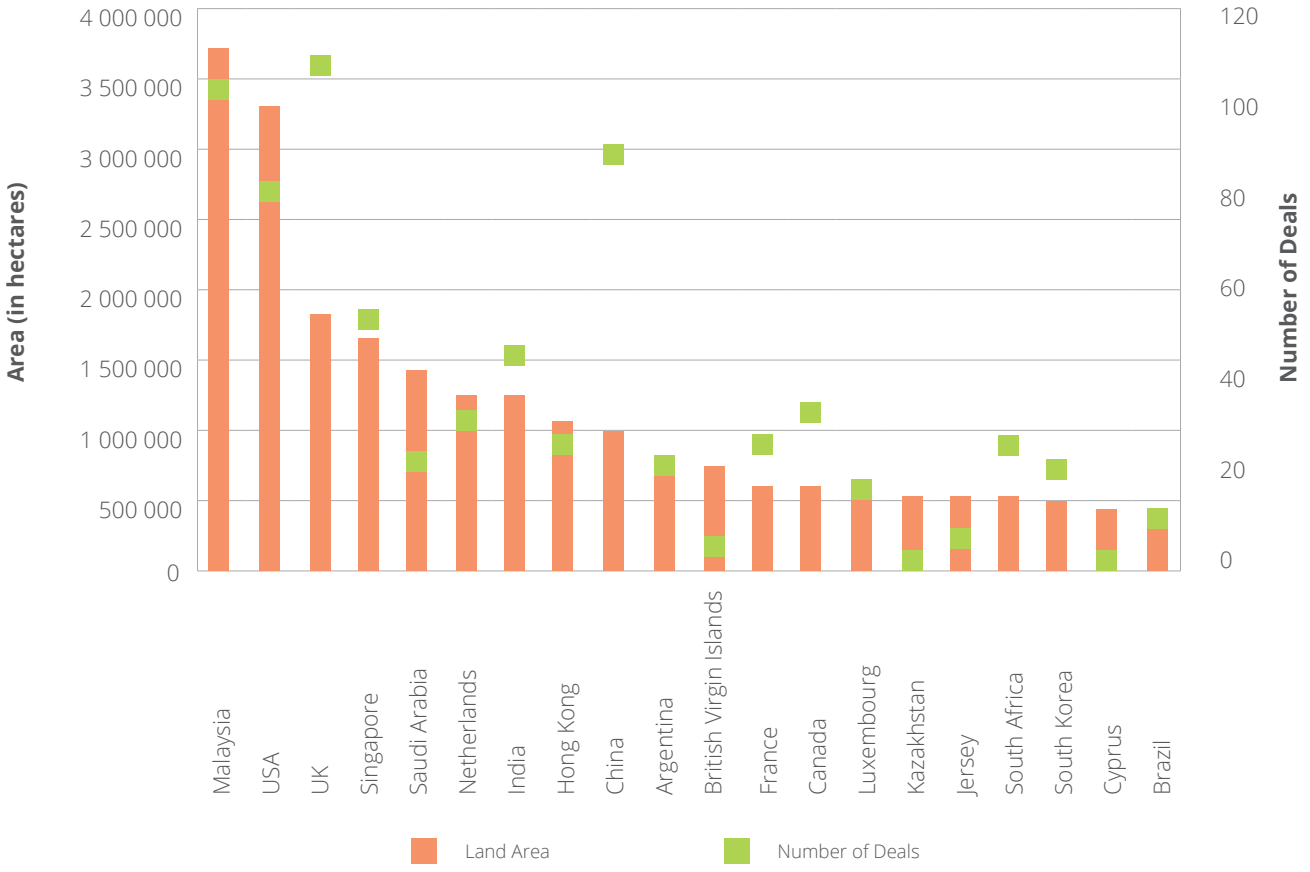
This chapter looks in greater depth at who is involved in large-scale land acquisitions. It answers questions such as where investors come from, what types of investors are involved, what their motives are and how they involve domestic partners. It provides background on the investors who are driving the findings presented in the previous chapter and gives insight into their behaviour. This helps to provide a better understanding of the impacts of large-scale land deals, which are analysed in more detail in Chapter 5.

## 3.1. Origin of investors

Determining the geographical origin of investors might be straightforward in the case of governments and small private firms. However, it is not so clear when it comes to larger firms and in particular stock exchange-listed companies. The ownership structures of many larger companies are difficult to determine and a unique 'origin' for such firms is often impossible to identify. The Land Matrix uses the location of an investor's headquarters to determine its country of origin, rather than the location(s) of stock exchange listings or main owners. Using the location of a company's HQ also partly circumvents the potential for misinformation due to companies establishing subsidiaries in tax havens (Cotula and Berger, 2015). Nevertheless, the opaque structure of investor chains means that the Land Matrix is unable to consistently identify the origin of each investor, with numerous deals showing intermediary companies registered in tax havens and not the origin of the capital.

A second issue arises when dealing with investments in which multiple investors are engaged. For these cases, the full size of the deal is attributed to the country of origin of each of the international investors involved, to indicate the countries' total involvement in large-scale land acquisitions. This results in a degree of double-counting and thus a higher number of deals and a larger area than the total of unique deals. Overall, 77 deals in the database have two or more investors, resulting in a total of 1,128 deals covering 28.5 million hectares (versus 1,004 unique deals covering 26.7 million hectares).

**Figure 14:** Top 20 investor countries for concluded deals with agricultural intention




Source: Authors' calculation based on Land Matrix data, April 2016.

Figure 14 shows the top 20 countries for investor involvement with regard to the area under contract, according to the Land Matrix. It shows that investors are spread widely. Among Asian investors, Malaysian companies stand out with engagement in more than 3.7 million hectares. Investors from high-income countries such as the USA and countries in Western Europe are also prominent, with the United Kingdom the country with the most deals. Overall, investors from high-income European countries are involved in 315 concluded deals (31.4% of all such deals) covering nearly 7.3 million hectares (27.2% of all land), which makes this region the biggest investor region, followed by South-East Asia. The remaining investors are based in the Middle East, South America and the tax haven of the British Virgin Islands. One investor from Kazakhstan is involved in a single very large deal in neighbouring Russia. Combined, the top 20 investor countries account for 67% of all concluded deals, covering over 81% of all the land under contract.

Over the past four years the top 10 investor countries have changed, as can be seen from Table 10. The countries indicated in green feature in both time periods (2000–2011 and 2012–2016). The scale of investments from the USA has diminished, while investments from tax haven countries such as Cyprus and the British Virgin Islands have increased by comparison. Asian investors have also become more dominant in recent years.

**Table 10:** Top 10 investor countries for contracts concluded in 2000–2011 and 2012–2016

| 2000–2016 | TOTAL SIZE (1 000 HECTARES) 2000–2016 | 2000–2011 | TOTAL SIZE (1 000 HECTARES) 2000–2011 | 2012–2016 | TOTAL SIZE (1 000 HECTARES) 2012–2016 |
|---|---|---|---|---|---|
| Malaysia | 3 737 | United States | 3 112 | Malaysia | 934 |
| USA | 3 314 | Malaysia | 2 803 | Singapore | 712 |
| UK | 1 838 | UK | 1 416 | Cyprus | 445 |
| Singapore | 1 679 | Saudi Arabia | 1 414 | UK | 422 |
| Saudi Arabia | 1 438 | India | 1 140 | China | 296 |
| Netherlands | 1 263 | Hong Kong | 1 082 | Netherlands | 264 |
| India | 1 245 | Netherlands | 1 000 | Virgin Islands | 204 |
| Hong Kong | 1 082 | Singapore | 967 | USA | 203 |
| China | 1 006 | China | 709 | France | 195 |
| Argentina | 744 | Argentina | 602 | South Africa | 191 |

Source: Authors' calculation based on Land Matrix data, April 2016.

"Investors from the global South show a preference for investing in their own region ."

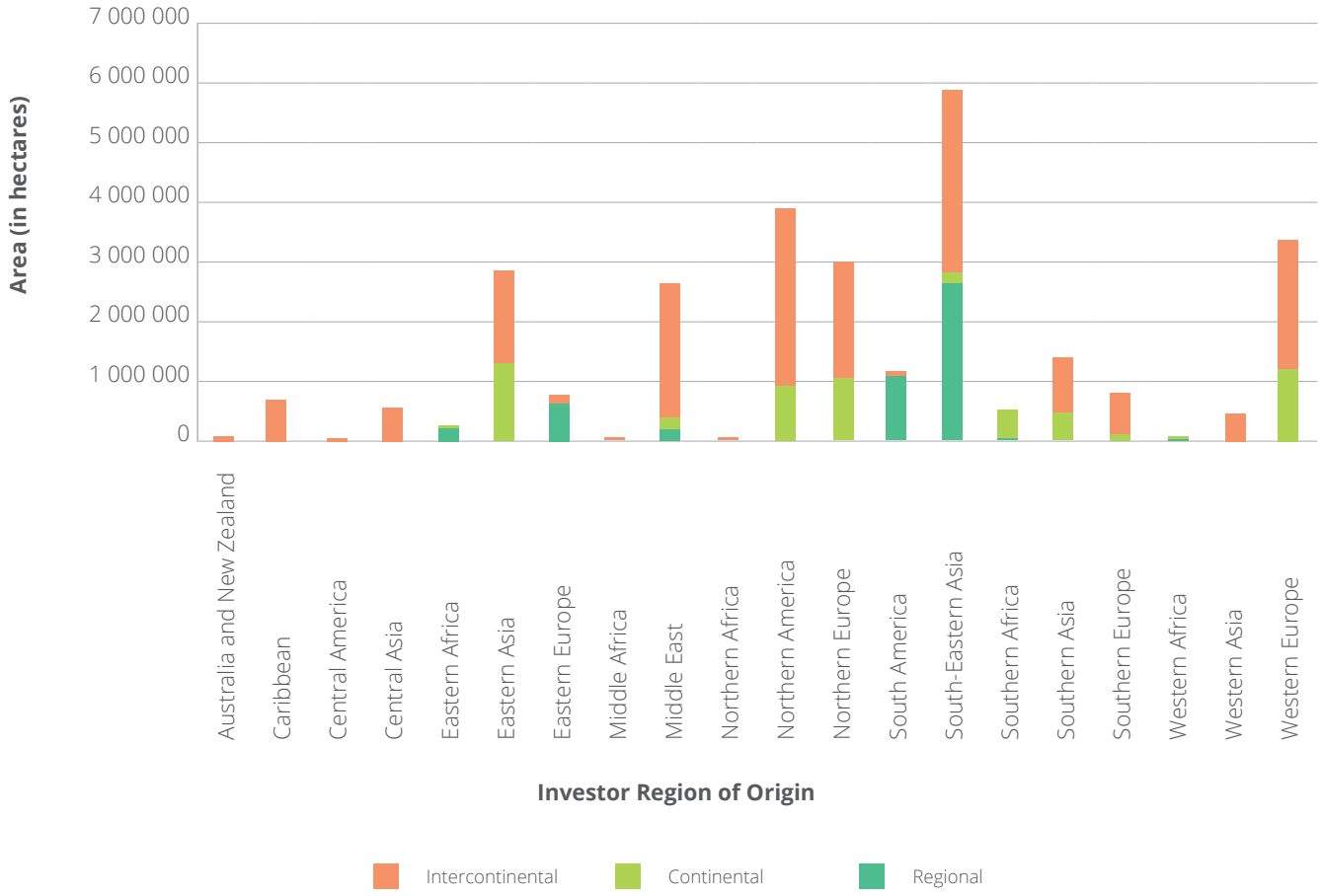
## 3.2. Strong regional patterns

The Land Matrix applies a classification based on continents, which are sub-divided into regions,[15] thus allowing for analysis of geographical patterns. This analysis shows that investors from the global South show a preference for investing in their own region (see Figure 15). The percentage of intra-regional investment is highest for South American investors, who remain within their own region in 85% of the deals they are involved in. This figure is 67% for South-East Asian investors, while African investors remain within their own region in 45% of deals.

A similar pattern can be seen for investors from high-income countries. Of deals concluded by investors from Eastern Asia, 57% are on the Asian continent, and nearly 50% of deals involving North American investors are on the American continent. European investors are mostly active in Africa. Investors from the Middle East mostly acquire land in North and East Africa, and thus are still relatively close geographically. The regional trend is similar when looking at the area of deals, as illustrated in Figure 15.

[15] The Land Matrix follows the United Nations' regional classification (http://unstats.un.org/unsd/methods/m49/m49regin.htm), which is based on continents that are sub-divided into regions. The continents, with their regions, are: Africa: Central (Middle), Eastern, Northern, Southern and Western; Americas: Caribbean, Central, North and South; Asia: Central, Eastern, South, South-East and the Middle East (Western Asia); Europe: Eastern, Northern, Southern, Western; Oceania: Australia and New Zealand, Melanesia.

**Figure 15:** Geographical investment patterns by investor region for area under contract




Source: Authors' calculation based on Land Matrix data, April 2016.

In South-East Asia, intra-regional engagement is driven mainly by Malaysian (and to a lesser extent Singaporean) palm oil producers, who are expanding their production activities into Indonesia. Vietnamese investors, mainly rubber producers, are increasingly expanding their activities into neighbouring Cambodia and Laos. On the other hand, Singaporean (mostly leading investor Olam) and Indian companies are heavily involved in Africa. Like Brautigam (2015), the Land Matrix does not show any evidence of a large-scale "land grab" by Chinese investors in Africa (see Box 6).

**Box 6:** Chinese investment in African agriculture

China has had a longstanding and complex involvement in African agriculture. Chinese engagement began in the 1960s with the acquisition of large, previously state-owned farms. This was followed by a push to set up demonstration farms and to provide extension support for smallholders in the 1970s. In the 1980s the focus shifted to making economic relations with Africa more sustainable and mutually beneficial, through various consolidation and experimentation projects. These projects led to a substantial change in aid policy in 1995, with a bigger focus on aid that would generate "mutual benefit". By 2007 a significant backlash had taken place, because large-scale Chinese land acquisitions in Africa were perceived as land grabs intended to produce crops for export back to China.

However, China's involvement in African agriculture is often overstated. African agriculture is not among China's geographical priorities. In fact, Land Matrix data shows that most Chinese investors in Africa are individual farmers operating on a relatively small scale, supplying mainly food crops to the domestic market. A second category of involvement is through agriculture technology demonstration centres, such as those in South Africa (fisheries) and Uganda. These demonstration centres, each covering less than 200 hectares, tend to function as an anchor for commercially oriented investment. An intended 10,000-hectare rice farm in Cameroon (Case #1140) was started on the site of a derelict aid project, but never moved beyond its initial 100 hectares.

Another observation is the failure of large intended deals by Chinese investors. For example, the Land Matrix records a project by Kaidi Biomass Zambia Limited (Case #3739), a Chinese-owned company that intended to acquire 300,000 hectares in Zambia for biofuels, but in the end acquired only 4,000 hectares and subsequently abandoned the project. A plan by another company, ZTE, to obtain 100,000 hectares in the Democratic Republic of Congo (DRC) also failed to get off the ground (Case #1984). The company obtained only 865 hectares, and abandoned this land after a few years. On the African continent, Chinese investors are concentrating their efforts in other sectors, such as mining and infrastructure development, rather than agriculture.

Sources: Brautigam (2015); Brautigam and Tang (2009); Jiang et al. (2016); Gabas (2014).
Case study provided by Angela Harding, University of Pretoria, Regional Focal Point Africa.

"Land acquisitions, project implementation and operation of activities often involve complex investment chains that are characterised by multi-layered shareholding and financing structures."

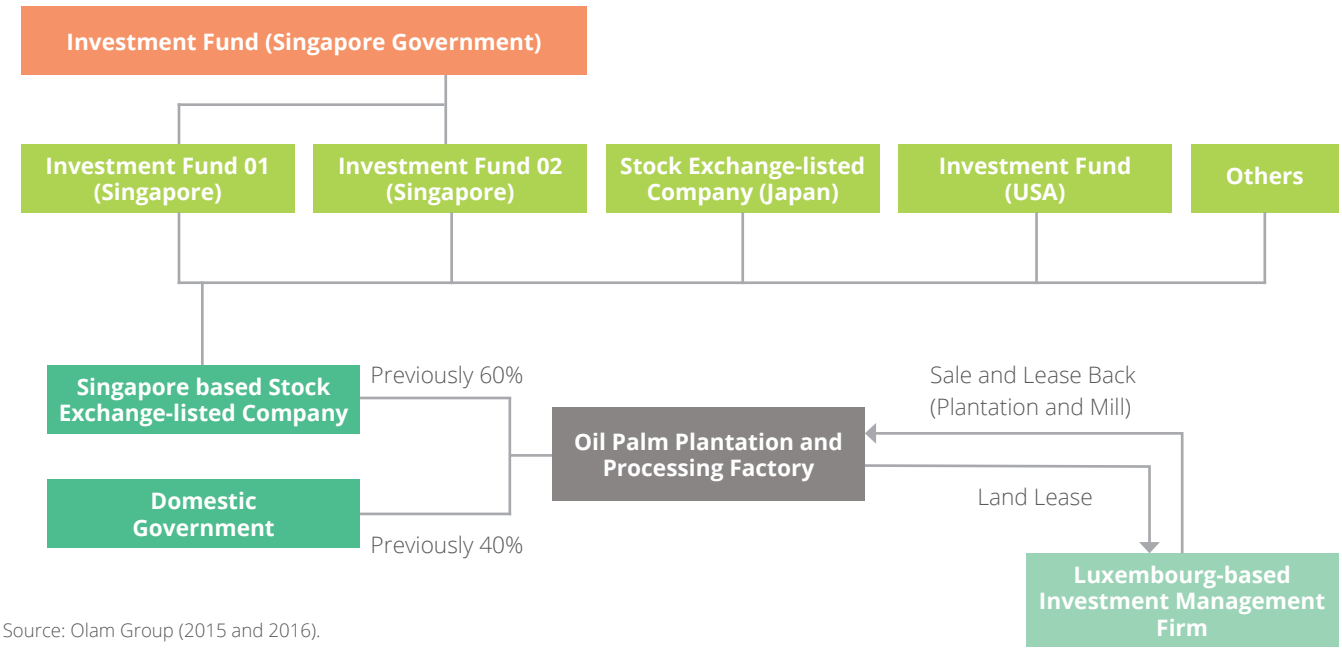
In South America, intra-regional deals often involve large Argentinian companies such as Cresud S.A., El Tejar and Bellamar Estancias S.A., which have large investments in Brazil, Uruguay, Paraguay and Bolivia. According to their websites, these companies apply a business model focused on the acquisition of large tracts of high-potential land, which are then used for grain production (including soybeans and wheat) and rearing livestock (cattle and sheep) (Cresud, 2014; El Tejar, 2014; Bellamar Estancias SA, nd). North American investors also demonstrate a preference for investment in South America.

## 3.3. Investor types and their networks

The Land Matrix distinguishes between several different types of investor. *Private companies* are privately held by one or more owners of private equity. Shares may be exchanged privately but cannot be offered to the public, and companies are thus not listed. Private companies vary greatly in size and scope, ranging from relatively small investors who engage in a single small project to large companies that have obtained multiple land areas of considerable size. *Stock exchange-listed companies* have shares that can be traded freely through an official stock exchange. Some shares of a listed company might be reserved for dedicated shareholders, such as a founding family. Investment funds, which can also be publicly traded, are not included in this category but have a separate category in the Land Matrix. The category of investment funds encompasses entities which pool and invest funds provided by their clients. Some investment funds are open to general clients, while others are owned solely by one entity, e.g. a university, pension fund or government. Thus *investment funds* can be used by both private investors and public investors. If an investment fund is solely owned by a government, it is included in the category of *state-owned entities*, which includes all companies owned by different state institutions (e.g. national or regional governments). Companies with a majority government shareholding combined with other shareholders are captured under *semi state-owned companies* in the Land Matrix database. Only a few investors have been assigned this category, however, and therefore in this report they have been subsumed under state-owned entities. Further investor types are *individual entrepreneurs* (unincorporated firms) and all other types, such as NGOs, which are captured under *Other*.

It should be noted that land acquisitions, project implementation and operation of activities often involve complex investment chains that are characterised by multi-layered shareholding and financing structures. Another reason for composite investment chains is to benefit from preferential tax laws and possible protection through investment treaties (Cotula and Blackmore, 2014). These structures often show low levels of transparency and their components are thus difficult to trace.

**Figure 16:** Example of a multi-layered investment chain




Source: Olam Group (2015 and 2016).

Figure 16 illustrates an example of the complexity of investor chains involved in large-scale land acquisitions. In this case[16], the majority shareholder in an oil palm plantation is a subsidiary of a stock exchange-listed company from Singapore, with the remaining shares being held by the government of the target country. Furthermore, a plethora of tertiary shareholders is involved, including government-related investors, another stock exchange-listed company and a number of investment funds and banks. To make this case even more complex, the domestic joint venture company has engaged an investment management fund in a long-term lease of the land and a sale and lease-back agreement for the plantation and processing mill. However, financing partners such as banks and other lending institutions that do not have direct equity and tertiary investors are not (as yet) captured in the Land Matrix. Therefore, it is likely that the role of stakeholders such as investment funds and pension funds is underestimated in this analysis.

Though the Land Matrix does not currently fully reflect this multi-level ownership, it does allow for multiple owners. A distinction is made between the primary investor (the company registered in the target country) and secondary investors (the owners or shareholders of this primary investor). A primary investor can have a single investor behind it or multiple secondary investors. In the latter case, the Land Matrix attributes the full size of the deal to each of the shareholders as an indication of their total involvement in large-scale land acquisitions, and thus double-counts these cases, resulting in an overall total of 1,161 cases versus 1,004 unique cases.

Table 11 lists the different investor types active in large-scale land acquisitions in the global South for agricultural purposes. Private companies are the main investors, followed by stock exchange-listed companies and investment funds. The key player is clearly the private sector, and not "foreign" governments. A significant number of land acquisitions involve investors for which the Land Matrix has insufficient information.

**Table 11:** Land acquisitions by investor type

| INVESTOR TYPE | AREA (1 000 HECTARES) | % OF TOTAL AREA | DEALS | % OF TOTAL DEALS |
|---|---|---|---|---|
| Private company | 12 087 | 45% | 407 | 41% |
| Stock exchange-listed company | 8 485 | 32% | 299 | 30% |
| Investment fund | 2 521 | 9% | 89 | 9% |
| State-owned entity | 926 | 4% | 62 | 6% |
| Individual entrepreneur | 648 | 2% | 31 | 3% |
| Other | 74 | 0.3% | 8 | 1% |
| No information | 3 202 | 12% | 165 | 16% |

Note: N = 1,061
Source: Authors' calculation based on Land Matrix data, April 2016.

[16] Case #2236 in the Land Matrix.

Table 12 shows investor types by region. This illustrates the strong involvement of stock exchange-listed companies in South-East Asia, indicating the importance of this investor type in Asia. Private companies from Latin America, such as El Tejar, are responsible for a large number of deals in the Americas.

**Table 12:** Land acquisitions by investor type and target region

| INVESTOR TYPE | AFRICA | AMERICAS | ASIA | EUROPE | OCEANIA |
|---|---|---|---|---|---|
| | AREA IN 1 000 HECTARES | | | | |
| Private company | 4 571 | 2 139 | 1 247 | 2 224 | 1 907 |
| Stock exchange-listed company | 1 683 | 1 334 | 3 152 | 2 257 | 60 |
| Investment fund | 1 254 | 809 | 6 | 452 | 0 |
| State-owned entity | 422 | 190 | 277 | 36 | 0 |
| Individual entrepreneur | 223 | 314 | 6 | 106 | 0 |
| Other | 67 | 0 | 0 | 7 | 0 |
| No information | 2 332 | 31 | 522 | 55 | 263 |

Note: N = 819
Source: Authors' calculation based on Land Matrix data, April 2016.

### 3.3.1. Private companies

Most concluded land acquisitions in the Land Matrix – over 40% – and the largest share of acquired land area involve a private company, around half of which are of European or South-East Asian origin. Many private companies are involved in a small number of deals, but private companies can be considerable in size. An example of a large private company engaged in large-scale land acquisitions is Louis Dreyfus Company, a leading commodities trader and processor. This company has established a subsidiary based in Argentina called Calyx Agro, which focuses on agricultural land rental, acquisition and development across South America (Louis Dreyfus Commodities, 2008). Additional funding for these land-based activities was sourced from private equity financing, resulting in investment companies obtaining equity in Calyx Agro (Ibid.).

**Box 7:** The ABCD group in Latin America

The global market for grains and other agricultural products is controlled by a small number of companies. Four of them – Archer Daniels Midland (ADM), Bunge, Cargill and Louis Dreyfus – are known as the ABCD group. These companies engage not only in trading, but have recently begun a gradual diversification process that includes the production and marketing of agro-industrial products. As a result, they now have a direct impact along the entire value chain: from primary production through trade to storage, distribution, processing and marketing across numerous countries in South America. Based on the information provided on corporate websites, Cargill operates in the most countries, followed by Dreyfus, Bunge and ADM.

The companies of the ABCD group do not necessarily acquire land to carry out their commercial activities. In fact, most of their business is based on agreements with major regional producers. Yet the direct acquisition of agricultural land still plays a role in the business model of some of these companies. Access to land for production purposes does not always imply a direct purchase but can take different forms: contracts, agreements, leases, production by third parties or any combination of these. Even when land is effectively acquired, its actual use is often exercised through financial subsidiaries or by leasing the land to other business groups and investors. Acquisitions are heavily dependent on the political, economic and legal framework of each target country.

The websites of the ABCD companies report on their commercial activities, but not much information is provided about the amount of land they actually own or the legal aspects of their production systems. In fact, the Land Matrix database for Latin America contains land deals for only three of these companies (ADM, Cargill and Louis Dreyfus). ADM has acquired a relatively small amount of land in Brazil for palm oil production in a deal signed in 2012. Cargill's acquisitions are concentrated in Colombia (about 140,000 hectares in two land deals from 2010 and 2012). These deals were heavily criticised by the media and by environmental and social organisations because they were made through local subsidiaries in order to sidestep a law that restricts the purchase of land by foreign companies. Louis Dreyfus (through subsidiaries Calyx Agro and Louis Dreyfus Company) has acquired land in Argentina, Brazil, Paraguay and Uruguay (approximately 70,000 hectares in 12 deals signed between 2005 and 2009). These deals are devoted mostly to food crops and cattle ranching, sometimes in combination with nature conservation projects.

Although the ABCD companies have acquired relatively small amounts of agricultural land in Latin America, their increasing control of the entire supply chain is likely to affect the food and economic sovereignty of some countries in the region. Directly or indirectly, these companies are also contributing to the processes of deforestation and land use change taking place in a number of Latin American countries.

Sources: Archer Daniel Midlands Company (2016); Bunge (2016); Cargill (2016); Louis Dreyfus Company (2016)
Case study provided by Lucas Seghezzo and Cristian Venencia, FUNDAPAZ, Regional Focal Point Latin America.

Private companies account for nearly half of the concluded deals in Africa and the Americas contained in the Land Matrix (see Table 12). Because of the importance of stock exchange-listed companies in the South-East Asian palm oil sector, however, their share is lower in Asia and Oceania.

All African private companies engage solely in Africa. Asian private companies, on the other hand, often operate outside Asia, with more deals concluded in Africa than in their own region. These investors are mainly Indian companies investing in East Africa. Malaysian private companies target land in their own region, including Papua New Guinea. Intra-continental private company investment in the Americas originates from the USA, with the large agricultural processor Cargill among the investors.

### 3.3.2. Stock exchange-listed companies

The Land Matrix data shows that the second largest investor type engaged in large-scale land acquisitions is stock exchange-listed companies. These companies often invest in multiple deals. The largest investor globally is Olam, a Singapore-based company active in both the production and trading of crops such as rice, nuts, coffee and cotton and which recently has also expanded into forestry activities. The Land Matrix has identified 20 deals concluded by Olam, involving land acquisitions across Asia, Africa and the Americas. The largest group of stock exchange-listed companies is based in South and South-East Asia (see Box 8); these companies are active in the region in oil palm production on large-scale plantations, sometimes combined with rubber production.

**Box 8:** South-East Asian dominance and expansion of oil palm plantations

Palm oil is widely used in everyday living, from household items such as cooking oil and food, cleaning and cosmetic products to industrial uses like lubricants and biofuels. Oil palm is a high-yielding crop that compares favourably with other oil crops such as rapeseed and soy. Demand for vegetable oils and biofuels has pushed up demand for palm oil since the 1980s. This is reflected in the Land Matrix, with oil palm being the single largest crop mentioned in concluded land deals.

The main players in the oil palm sector are based in South-East Asia. Several of these companies, such as Carson Cumberbatch, M.P. Evans and Sime Darby, have a long history dating back to the arrival of the British in East Asia, where they started operating in the rubber and tea sectors. These companies switched to oil palm plantations, mostly in Malaysia, in the 1960s. Malaysian domestic entities, such as the Genting Group, TSH Resources and the government-owned FELDA, also entered the oil palm sector at that time. The production of palm oil by these companies continues today, but the rise in demand has encouraged them to increase their production and expand their plantations overseas.

For example, Felda Global Ventures Holdings Berhad (now stock exchange-listed, with FELDA the major shareholder) currently has activities in Indonesia, Thailand, Cambodia and Pakistan. Sime Darby has expanded its operations to Indonesia, has acquired plantations owned by New Britain Palm Oil Limited (NBPOL) in Papua New Guinea and has established itself in Africa with plantations in Liberia and Cameroon. Overall, the company controls a land bank of almost 1 million hectares globally. Carson Cumberbatch and M.P. Evans Group, which are not based in Malaysia, have made strategic decisions to divest from the country and move their focus to Indonesia. All these companies have grown through mergers and acquisitions and operate through a complex network of domestic subsidiaries, either with full control or with majority or minority shareholdings. Overall, the number of companies that have palm oil plantations in Indonesia and Malaysia is not surprising; according to the World Wide Fund for Nature (WWF), more than half of the world's total plantation area of palm oil is found in these two countries.

Sources: Carson Cumberbatch (n.d.); Cramb and Curry (2012); Felda Global Ventures (nd); Genting Plantations (2014); M.P. Evans Group (2016); Nelson et al. (2014); Sime Darby (2016); TSH (2016); WWF, 2004.
Case study provided by Lorraine Ablan, Asian Farmers Union, Regional Focal Point Asia.

In South America, Cresud S.A., an Argentinian company, exemplifies the trend of expansion into neighbouring countries such as Brazil and Bolivia. This company follows a similar business strategy to that of the privately owned Calyx Agro, namely "acquisition, development and exploitation of agricultural properties having attractive prospects for agricultural production and/or value appreciation and the selective sale of such properties where appreciation has been realized" (Cresud S.A., 2014). Rather than acting independently, Cresud S.A. has obtained a 39.76% share in BrasilAgro.

European stock exchange-listed investors in the Land Matrix include Agrokultura AB[17] (Sweden), Black Earth Farming (Jersey-registered, with mostly Scandinavian-based institutional investor shareholding) and DUI Holding A/S (Denmark), all of which manage numerous farms in Eastern Europe (in Russia, Romania and Ukraine).

On the African continent the main investors besides Olam, according to the Land Matrix, are Socfin and Amatheon Agri. Socfin (Luxembourg) traces its origins back to 1890, and since then it has established a large network of subsidiary companies in which it holds majority or full ownership, through which it manages rubber and oil palm plantations across Africa (Socfin, 2015) and which it continues to expand. A number of its plantations were previously government-owned companies that have been privatised. Since 2000, Socfin has acquired seven new land areas, according to the Land Matrix. In contrast, Amatheon Agri is a relatively new company from Germany, which focuses on the development of large-scale commercial farming operations in sub-Saharan Africa (Amatheon Agri, 2016). Since 2013, the company has established operations in Zambia, Uganda and Zimbabwe. Its recent land acquisitions have contributed to the increasing focus of stock exchange-listed companies on food crops, which has become relatively more significant since 2012.

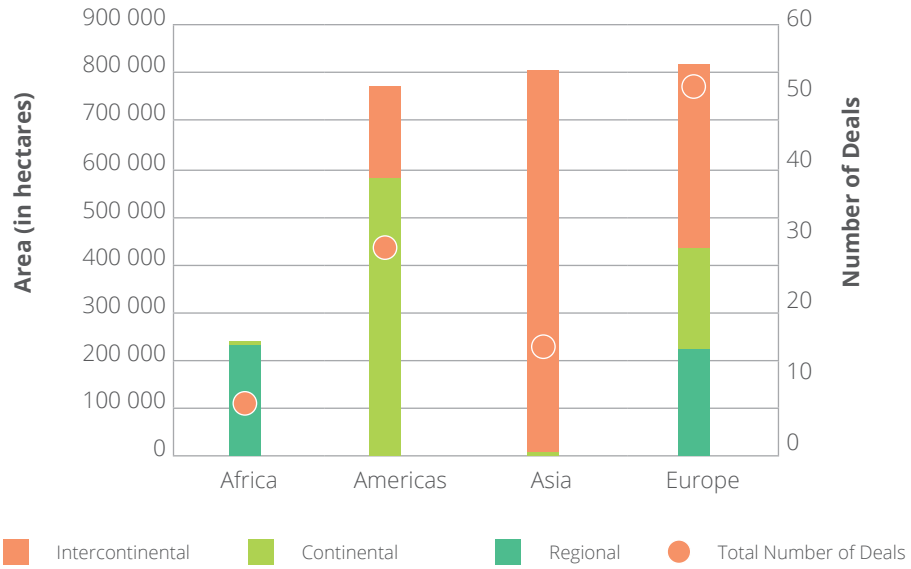
[17] Agrokultura AB, previously Alpcot Agro, was recently delisted from the Nasdaq First North stock exchange after a takeover by Steenord, an investment company based in the British Virgin Islands (a tertiary investor). See: http://news.cision.com/agrokultura/r/agrokultura-s-application-for-delisting-approved,c9700899; and http://www.businesswire.com/news/home/20141121005098/en/Steenord-Corp.-Announces-Final-Outcome-Mandatory-Public.

These examples illustrate the fact that stock exchange-listed companies often engage in multiple land deals focusing on a single geographic area.

### 3.3.3. Investment funds

Investment funds engage with the agricultural sector in different ways. As illustrated in the investment chain concept presented by Cotula and Blackmore (2014), some investment funds opt to obtain equity in agribusinesses, limiting the risk for the investor as capital is not invested in fixed and socially sensitive land assets (Anseeuw et al., 2011). This engagement, as a shareholder in an agribusiness, is not visible in the Land Matrix. Other investment funds instead choose to speculate directly on rising commodity and/or land prices through land acquisition, which is recorded in the Land Matrix. For example, the investment company EmVest states on its website: "As sub-Saharan farming becomes modernized, crop yields should start to rise and the value of land, whether freehold or leasehold, will appreciate" (EmVest, 2012). Investment funds following the strategy of direct land acquisition have an interest in 8.9% of all land in concluded deals recorded in the Land Matrix (see Table 11 above).

**Figure 17:** Regional trends of concluded deals by investment funds




Source: Authors' calculation based on Land Matrix data, April 2016.

Whereas private and stock exchange-listed companies show a relatively high degree of investment in their own regions, this is less the case for investment funds (see Figure 17). Only a few African- and European-based investment funds engage in regional land acquisitions. Asia does not appear as either an origin of or a target for investment funds, according to the Land Matrix, with the few deals in which Asian investment funds are involved targeting land outside the Asian continent. The shareholding of Pacific Century Group (Hong Kong) in Calyx Agro accounts for 10 of the 17 Asian deals in the Land Matrix. These investments are, however, of a larger than average size, with the area under contract nearly equalling that of the many investment funds based in Europe.

### 3.3.4. State-owned entities

State-owned entities are involved directly in large-scale land acquisitions through four types of actor: fully state-owned companies; semi state-owned companies whose equity is partly owned by the state; investment vehicles with the state as the sole stakeholder; and government departments themselves. The Land Matrix has a separate category for semi state-owned companies, but this report combines this investor type with the state-/government-owned category to capture all state involvement. Overall, deals involving state-owned entities account for 6.2% of concluded deals, covering 3.5% of the area under contract in the Land Matrix (see Table 11 above).

One of the drivers for governments to acquire land is food security (Luyt et al., 2013); governments with limited natural resources in their own countries aim to achieve food security partly through direct investment by the government-/state-owned entities. The target government agrees to provide land for the government searching for land, which then invites its domestic companies to operate the land in the target country. (Both Jordan and Egypt have tried to implement this strategy, although neither has been successful.) Alternatively, governments operate through sovereign wealth funds, in essence government-owned investment funds, which engage directly in agricultural deals with the aim of producing food for the investor country. However, these intentions often remain on the drawing board, with relatively few projects being implemented.

A second concern for governments appears to be providing farming opportunities for domestic farmers, especially for highly populated countries such as India and China. Examples in the Land Matrix include Chinese provincial governments that have secured land leases or have assisted in this process in Kazakhstan, for Chinese citizens to farm. Similarly, the Indian states of Punjab and Andhra Pradesh have outlined plans to acquire land in order to send Indian farmers to Ghana and Kenya respectively.[18] This strategy is targeted more towards individual farmers than large agri-businesses.

The highest number of concluded deals originates from state-owned entities in Vietnam and China. The Land Matrix captures the largest number of deals for the Vietnam Rubber Group (VRG), which controls 112,000 hectares of rubber plantations extending over 17 concessions in Cambodia and Laos. The company operates these concessions under a complex network of local companies (Slocomb, 2011). Chinese investments are more diverse, including the land in Kazakhstan acquired for individual farmers but also state-owned companies engaging in large commercial farming operations, such as sugar production in Mali and the involvement of the agricultural department of the Guangxi Zhuang Autonomous Region in a large-scale biofuel deal in the Philippines.

### 3.3.5. Beyond direct investment

Investment funds and governments play a relatively small role as secondary investors in large-scale land acquisitions, but their involvement stretches further through indirect engagement. Investment funds play an important role in the financing of stock exchange-listed companies. Pension funds, insurance companies, endowments and universities are organisations with large financial resources available. These institutions mostly look to a large diversity of investments to spread their risk. Agricultural investments are considered attractive for a number of reasons: land values are likely to appreciate, land is a hedge against inflation, it has a low correlation to other types of asset, and a long-term upwards trend can be expected in food and fuel prices (Luyt et al., 2013; TIAA Global Asset Management, 2016). Accordingly, pension funds from the USA, Scandinavia and the Netherlands, among other countries, are shareholders in numerous companies with deals recorded in the Land Matrix. Another impact of investment funds is through debt financing. In this scenario, the investment fund provides capital to an agricultural operation without taking equity in it. Since the Land Matrix captures only stakeholders with ownership, these investment funds are not included in this analysis.

State-owned entities from high-income countries do not appear, at first sight, to be engaged in large-scale land acquisitions. Their role rather seems to lie in the financing of investors, for example by holding equity in stock exchange-listed companies or providing loan and/or grant financing to private companies.

Government policy can also play a stimulating role for businesses to expand overseas. A clear example is the policy adopted by the Saudi government to reduce primary agricultural activities in its own country in order to preserve scarce water resources. As part of this policy, the government has ordered a halt to domestic wheat production as of 2016 (Blas, 2015). As a result, companies such as Almarai, MIDROC and the Al Rajhi group have acquired land outside Saudi Arabia to supply the Saudi market.

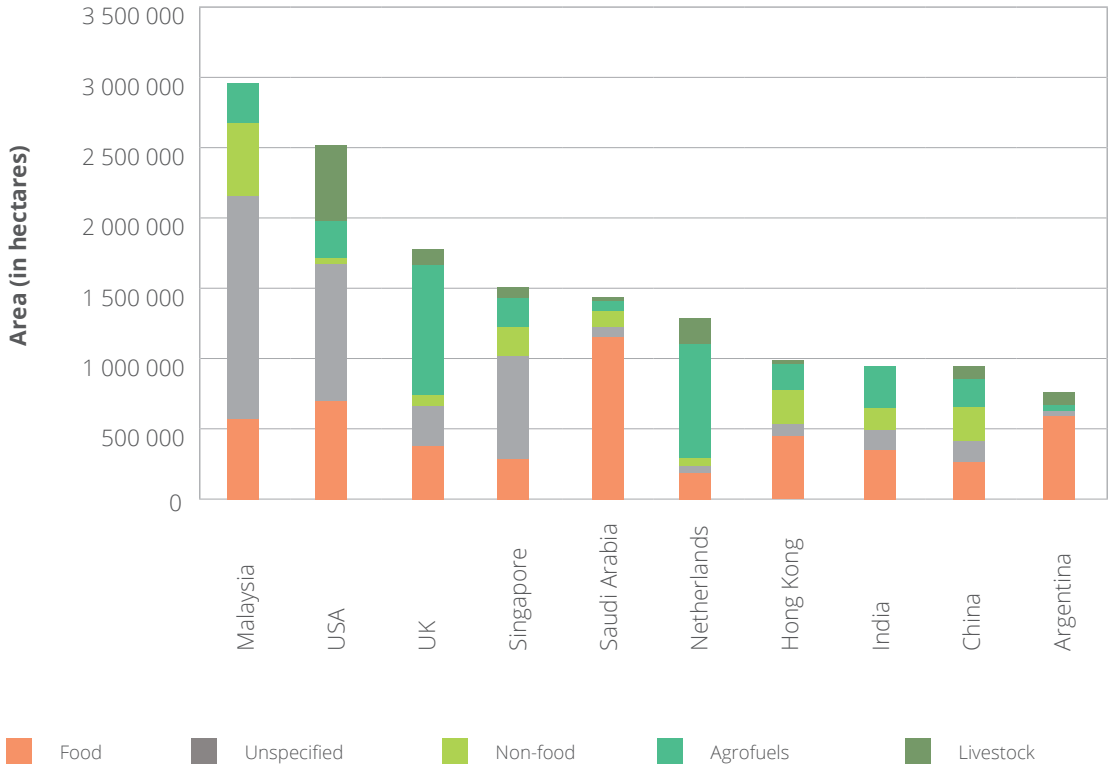
"Investment funds and governments play a relatively small role as secondary investors in large-scale land acquisitions, but their involvement stretches further through indirect engagement."

## 3.4. Intention

The agricultural intentions of the top 10 investor countries are illustrated in Figure 18. Most investors from these countries are involved in food crop production, in line with the general findings in Chapter 2. This is specifically the case for Saudi Arabian and Argentinian investors. A few exceptions to investments for food crops can be noted, however. Firstly, Malaysian investors mostly target land for oil palm plantations, regularly combined with rubber production, and hence they score high in the categories of unspecified agriculture and non-food commodities. Dutch investors engage in a relatively large number of projects involving agrofuel crops, with UK investors also active in this segment (although numerous projects have been abandoned by investors, especially the larger deals). Lastly, livestock investors seem to be concentrated in the USA, with little to no activity in this sector by Asian investors.

[18] Cases #202, #3361 and #4431.

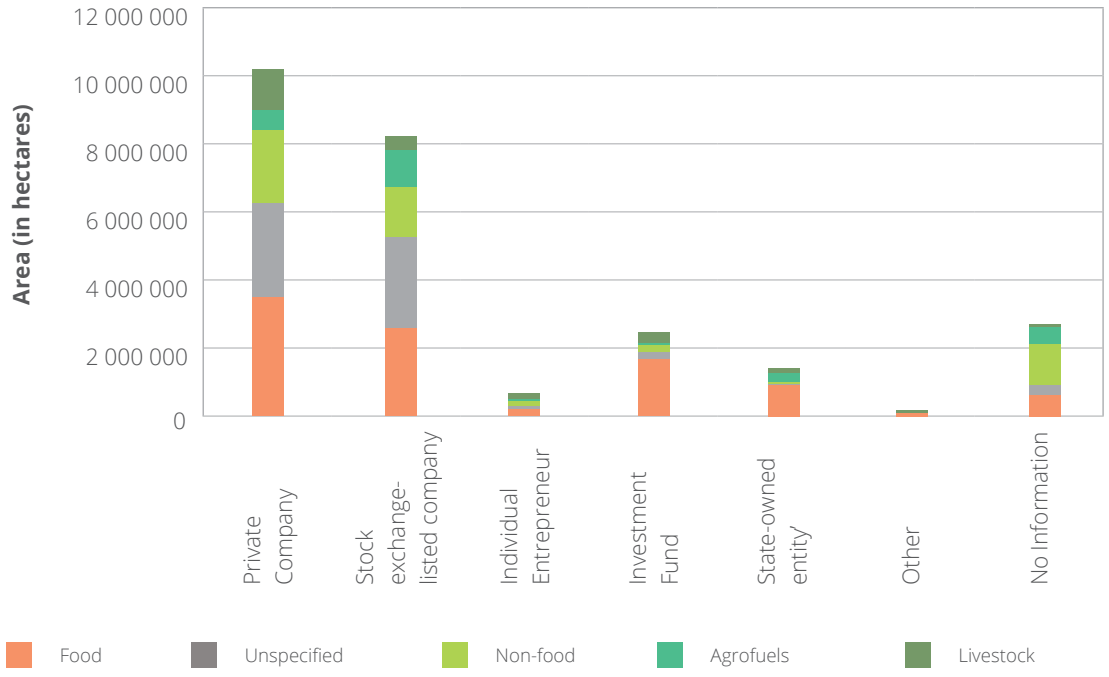
**Figure 18:** Intentions of top 10 investor countries




Note: N (deals) = 546; N (intentions) = 820
Source: Authors' calculation based on Land Matrix data, April 2016.

All investor types are involved in food production, as shown in Figure 19. Investment funds in particular, and to a lesser extent state-owned entities, appear to invest in land for food crops, according to the data. This underlines the driver for governments of ensuring food security for their own populations. As can be expected from the previous finding on the large involvement of stock exchange-listed companies in the oil palm sector, this investor type targets a relatively large area for unspecified use crops. Livestock projects are largely owned by private companies.

**Figure 19:** Intention of agricultural deals by investor type




Note: N (deals) = 1,004; N (intentions) = 1,493
Source: Authors' calculation based on Land Matrix data, April 2016.

In general, private companies engage in a large range of crops but mostly produce sugar cane, rice, oil palm, rubber and jatropha. Stock exchange-listed companies, on the other hand, show a much larger preference for oil palm production, with more than a third of the deals targeting this crop. Investment funds, like private and public companies, are mostly engaged in food production, predominantly soy and wheat but also corn, rice and sugar. This type of investor is often engaged in projects combining food production with extensive livestock activities.

## 3.5. Partnerships with domestic shareholders

Domestic investors such as private companies, individuals and governments do not often participate in partnerships with international investors. A total of just 155 concluded deals, or 15.4%, have shared equity between international and domestic investors. This indicates that these investments have a low level of inclusion of domestic stakeholders, limiting the impact of foreign land acquisitions on local development (Chamberlain and Anseeuw, 2016). These deals are slightly larger than average, however, covering 18% of the area under contract (Table 13). Note that deals made exclusively by domestic investors are not included in these 155 agreements, as such deals are not within the scope of this report (see Chapter 1).

**Table 13:** Shared equity with domestic investor by target region

| TARGET REGION | SIZE (1 000 HECTARES) | % OF SIZE OF AREA IN TARGET REGION | DEALS | % OF DEALS IN TARGET REGION |
|---|---|---|---|---|
| Africa | 2 610 | 26% | 86 | 20% |
| Americas | 1 459 | 32% | 30 | 21% |
| Asia | 557 | 11% | 33 | 11% |
| Europe | 192 | 4% | 6 | 6% |
| Oceania | 0 | 0% | 0 | 0% |
| **Total** | **4 818** | **18%** | **155** | **15%** |

Source: Authors' calculation based on Land Matrix data, April 2016.

Investors most often team up with domestic partners when they invest in Africa or the Americas, where just over 20% of deals have shared equity with a stakeholder from the target country (Table 13). This percentage is much lower for Europe. Domestic partners in Oceania do not hold equity in any of the deals in their own countries.

**Table 14:** Investor types engaged with a domestic partner

| INVESTOR TYPE WITH DOMESTIC PARTNER | SIZE (1 000 HECTARES) | % OF TOTAL SIZE INVESTOR TYPE | DEALS | % OF ALL DEALS INVESTOR TYPE |
|---|---|---|---|---|
| Private company | 1 892 | 16 | 59 | 15% |
| Stock exchange-listed company | 1 554 | 18% | 50 | 17% |
| Investment fund | 365 | 15% | 9 | 10% |
| State-owned entity | 192 | 20% | 12 | 21% |
| Individual entrepreneur | 42 | 7% | 7 | 23% |
| Other | 3 | 3% | 1 | 13% |
| No information | 827 | 26% | 25 | 15% |

Source: Authors' calculation based on Land Matrix data, April 2016.

Table 14 illustrates that, based on the data in the Land Matrix, individual entrepreneurs are the most likely type of investor to partner with a domestic partner. State-owned entities also engage with a domestic partner in more than a fifth of their large-scale overseas land acquisitions. Investment funds tend to operate without a domestic partner.

**Table 15:** Domestic shareholders by investor type

| DOMESTIC INVESTOR TYPE | AREA (1 000 HECTARES) | DEALS |
|---|---|---|
| Stock exchange-listed company | 1 442 | 20 |
| State-owned entity | 900 | 36 |
| Other | 612 | 4 |
| Private company | 562 | 43 |
| Individual entrepreneur | 455 | 19 |
| Investment fund | 64 | 5 |
| No information | 784 | 28 |
| **Total** | **4 818** | **155** |

Source: Authors' calculation based on Land Matrix data, April 2016

"Investors most often team up with domestic partners when they invest in Africa or the Americas, where just over 20% of deals have shared equity with a stakeholder from the target country."

Most domestic partners are private companies, which corresponds with the dominant type of international investor (Table 15). Domestic stock exchange-listed companies are involved in a particularly large total land area. Involvement of domestic state-owned entities mostly occurs when foreign investors target African countries.

**Table 16:** Intention of deals with domestic stakeholders

| INTENTION | AREA (1 000 HECTARES) | % OF AREA WITH DOMESTIC PARTNER | DEALS | INTENTION AS % OF DEALS |
|---|---|---|---|---|
| Agrofuels | 1 702 | 34% | 42 | 19% |
| Food crops | 1 103 | 13% | 95 | 17% |
| Livestock | 190 | 10% | 17 | 13% |
| Non-food | 337 | 15% | 21 | 9% |
| Agriculture unspecified | 758 | 14% | 41 | 16% |

Note: N (deals) = 155; N (intentions) = 268.
Source: Authors' calculation based on Land Matrix data, April 2016.

Deals with a domestic partner are relatively more focused on agrofuel production, as illustrated by the large area under contract for this intention (Table 16). More than a third of the area for agrofuel crops is in deals where a domestic partner has part-ownership. Fuel production projects with domestic investor involvement are considerably larger than agrofuel deals with no domestic partner, as can be deduced from the larger percentage of area (33.6%) compared with the percentage of deals (19%). The opposite is the case for food crops. Regarding the relatively high number of fuel deals, it is important to remember that a number of crops, mainly sugar and oil palm, are used for both food and fuel. Thus the primary intention might be food, with fuel production a secondary application. Deals for these crops are counted under both food and fuel production. Domestic partners are less involved with non-food agricultural commodities and livestock activities.

## 3.6. Synthesis

The leading investor countries are in South-East Asia, with Malaysia the largest. Investors from this region are mostly stock exchange-listed companies that are targeting Indonesia and Papua New Guinea for palm oil production. The USA remains the second largest investor country, though the pace of land acquisitions by US companies has recently slowed down. Investors from the UK account for the largest number of land deals.

Private companies are the leading investor type, followed by stock exchange-listed companies and investment companies. The key player is clearly the private sector, and not "foreign" state-owned entities. Private sector investors expand either horizontally or vertically, or speculate on increasing land and commodity prices. Investment funds and state-owned entities are relatively small players when looking at direct land acquisitions. However, these investor types often form part of opaque investment chains, and thus their impact is likely to be bigger than what is reflected in the Land Matrix. Governments furthermore serve as a driver through policies that enable investors from their own countries to expand overseas or that create an attractive environment for foreign investors to invest in their domestic agricultural sectors.

The intentions of the main players vary considerably. While most are involved in food production, some investor countries show a stronger preference for other crops, especially agrofuels. Domestic partners have shareholdings in a relatively small number of deals. Quite often, however, land acquisitions with a domestic partner are for fuel crops on a larger than average scale.

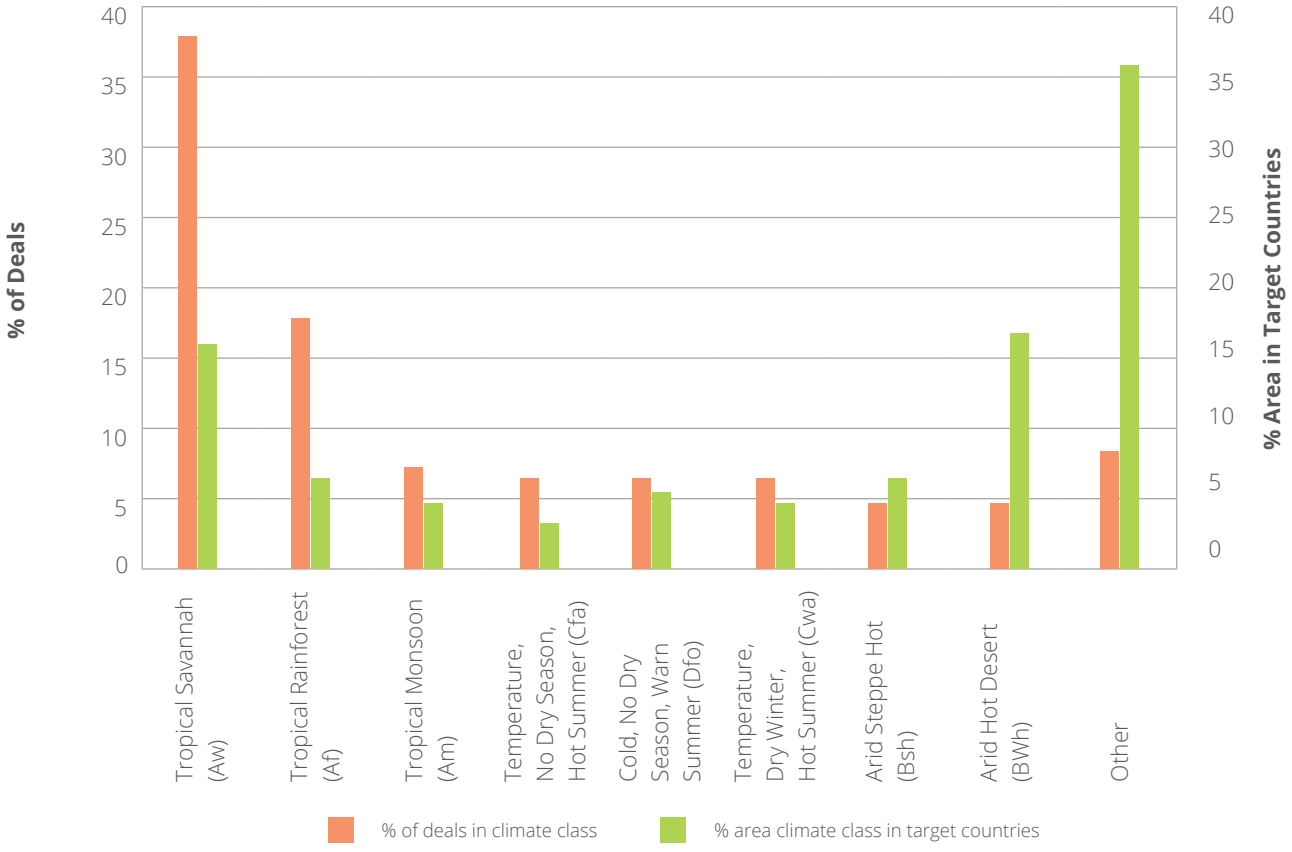
# 4. What Type of Land is Targeted by Land Deals?

What type of land is sought after by investors? As well as the countries targeted, it is very important to investigate what type of land is acquired within each country. The local context is vital regarding the impacts of a land deal. Central determinants include environmental conditions, land cover, whether the location is highly populated and accessible and whether it is already being used for farming or other purposes.

## 4.1. Tropical savannah and tropical rainforest are the most targeted climatic zones

In Chapter 2 a global map representing areas with a high concentration of land deals was presented (Figure 10). We have further examined areas with high densities of land acquisitions according to climatic zones.[19] This analysis draws on 943 concluded agricultural deals out of the total 1,204 in the Land Matrix that contain geospatial information at different levels of accuracy.

**Figure 20:** Share of land acquisitions in different Köppen–Geiger climate classes in target countries



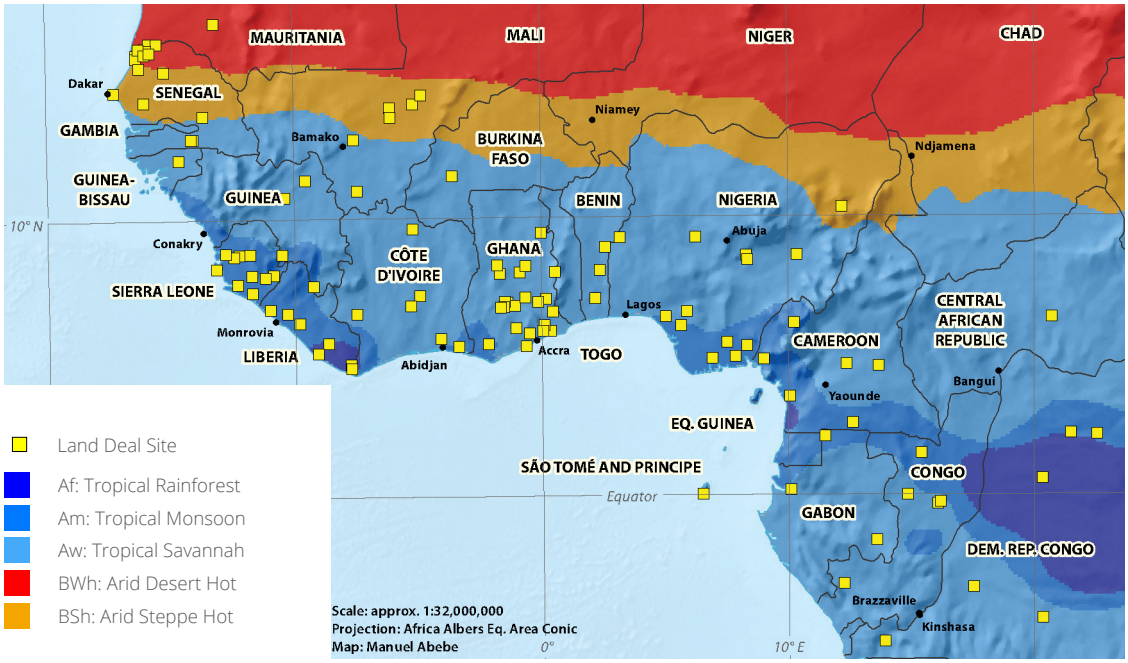

Note: Compiled in April 2016 using GLOBE incidence of land deals (Ellis, 2012) according to the different climatic zones (orange) and their respective over- or under-representation (green) in terms of the share of each type of zone for target countries. For example, tropical savannah represents 16% of the land area in target countries, but the sample shows that 37% of land deals are in this climate class.
We use climate zones according to the Köppen–Geiger climate classification (Kottek et al., 2006), to determine the climate zones in which land acquisitions most frequently take place. This system divides the earth into five main climate zones (Group A (tropical climates), group B (dry climates), group C (temperate climates), group D ( Continental climates), and group E ( Polar climates), each consisting of several sub-types. We display these sub-types here and give the corresponding code in brackets.
Source: Land Matrix, April 2016.

Figure 20 represents the incidence of land deals according to the different climatic zones (orange) and their respective over- or under-representation (green) in terms of the share of each for target countries. The analysis shows that both tropical savannah and tropical rainforest climate zones are clearly over-represented in the global sample in terms of land deals. This results mainly from the trend in Asia, where these climate zones are preferred targets for oil palm plantations, due to the very high productivity that can be attained.

In order to give more insight we also present sub-regional maps, one for West and Central Africa and one for East Africa (Figures 21 and 22), showing the localisation of deals in these regions. It can be seen that in both regions deals focus on tropical savannah and tropical monsoon areas. Crops such as oil palm or sugar cane are the most prominent crops in these tropical areas. In East Africa, temperate climates are also heavily targeted.

[19] For methodological considerations on this point, refer to Eckert et al. (2016).

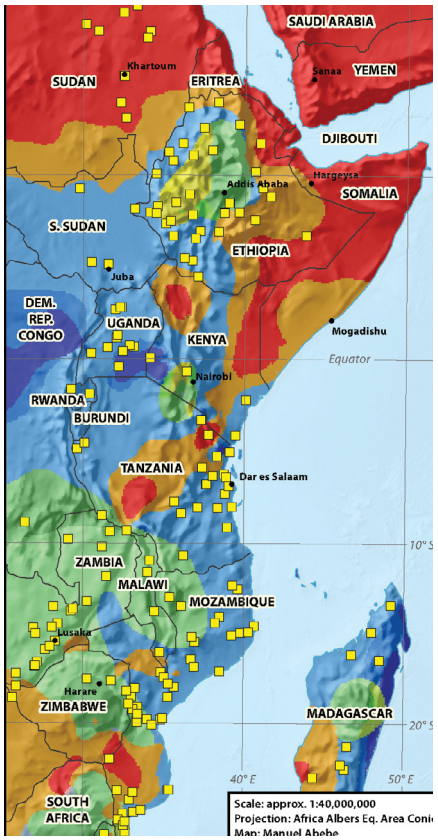
**Figure 21:** West and Central Africa: Spatial distribution according to climate zones of land deals contained in the Land Matrix




Source: Land Matrix, April 2016. Köppen–Geiger climate zones according to Kottek et al. (2006).

Arid zones account for only a low share of sites relative to the land area in the targeted countries. Land deals for agricultural purposes mostly occur in arid climates only if a possible source of irrigation is available. This can also be observed on a global scale (see Figure 10). The under-representation of arid zones at global level can obviously be understood by the lack of water to sustain large-scale production, which points to the key role of water resources in the land acquisition process (Breu et al., 2016).

**Figure 22:** East Africa: Spatial distribution according to climate zones of land deals contained in the Land Matrix




Land Deal Site
Af: Tropical Rainforest
Am: Tropical Monsoon
Aw: Tropical Savannah
BWh: Arid Desert Hot
BWk: Arid Desert Cold
BSh: Arid Steppe Hot
Csa: Temperature, Dry Summer, Hot Summer
Csb: Temperature, Dry Summer, Warm Summer
Cwa: Temperature, Dry Winter, Hot Summer
Cwb: Temperature, Dry Winter, Warm Summer
Cfa: Temperature, No dry season, Hot Summer
Cfa: Temperature, No dry season, Warm Summer

Source: Land Matrix, April 2016. Köppen–Geiger climate zones according to Kottek et al. (2006).

Tropical rainforest is under-represented in West and Central Africa as a target zone for agricultural land acquisitions (as can be read from Figure 21). In Central Africa, tropical forests are mainly targeted for forest concessions rather than agricultural crops such as oil palm.[20] This can be explained by political and economic factors (e.g. access to markets, infrastructure, economic environment, preference for regional engagement by Asian investors), which lead to different patterns of land acquisition.

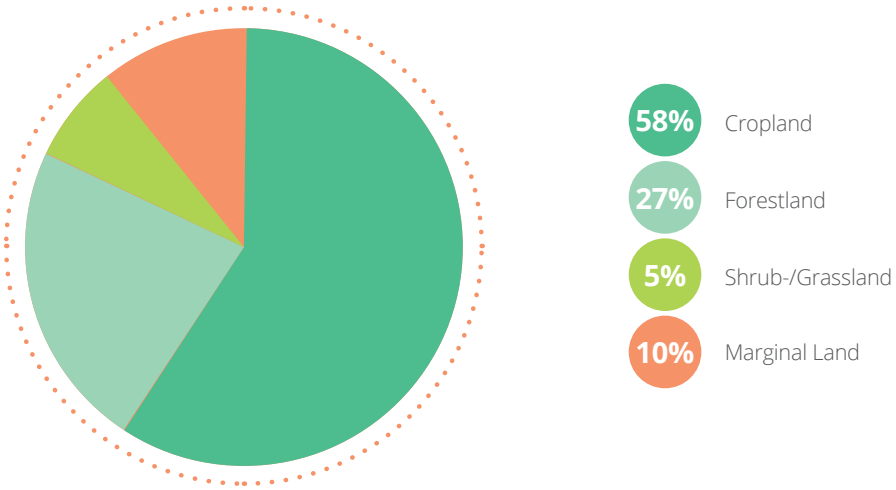
## 4.2. Former land use and land cover

Once land deals begin to be implemented, we witness changes in land use and land cover, with the previous land use and cover changing to cropland for commercial agriculture. Areas undergoing land use and land cover changes not only lose their economic and cultural functions for local populations, but also lose many of their previous environmental functions; these are among the impacts of land deals discussed in Chapter 5.

A limited number of delas (287 deals) in the Land Matrix provide information on the type of former land cover on the land acquired. Three land cover types are reported most frequently: cropland, forest land and marginal land (see Figure 23).

"Croplands are by far the most frequently reported former land cover type, with more than half of all deals implemented (at least partially) on former cropland, rather than on uncultivated land."

**Figure 23:** Primary land cover types targeted by land deals




Note: Individual deals list up to three different former land covers. The Land Matrix does not provide information on the share of area for each type of former land cover; hence, for this analysis, we have divided the area under contract and attributed equal shares to each former land cover. N (deals) = 287, N (former land cover) = 428.
Source: Authors' calculation based on Land Matrix data, April 2016.

Croplands are by far the most frequently reported former land cover type, with more than half of all deals implemented (at least partially) on former cropland, rather than on uncultivated land. Earlier analysis conducted by Messerli et al. (2014) on the context of land deals (albeit with a different methodology and sample of deals) also points to a high proportion of cropland being affected. Some 27% of deals take place on former forest land; deals targeting rubber or oil palm cultivation very often fall into this category. Marginal land is the third important category of former land cover recorded in the Land Matrix (10% of deals). However, the term "marginal" does not specify what type of land this actually is, and in many cases it may include land that is used by pastoralists (Messerli et al., 2014).

The type of former land cover is extremely important for many reasons. The loss of cropland to a large investor has a direct impact on the food security and livelihood strategies of the smallholder farmers affected. The loss of forests means a loss of biodiversity and carbon sequestration, which has global consequences. Furthermore, forests serve as sources of firewood, timber and other resources for local communities. Land considered to be "marginal" often serves as a grazing area and is important to rural communities and indigenous peoples. These points are discussed further below.

[20] This report focuses only on land deals for agricultural purposes, which do not include forestry concessions. Forestry deals are therefore not depicted on the map, but they are included in the Land Matrix database.

Table 17 shows the distribution of former land use expressed as a percentage of the size of land currently under contract for commercial farming operations. Across all regions, almost three-quarters of the acquired area was formerly used for commercial (43%) and smallholder (31%) agriculture. The share of these two categories is particularly high in Eastern Europe (96%), but also in Asia and Latin America, with over 75%. In Oceania, and to a lesser extent in Africa, many new commercial farms have been set up on former forestry land. Land used by pastoralists and conservation areas seem to be less frequently targeted by foreign investors (5%).

**Table 17 :** Regional distribution of former land use

| | Africa | Latin America | Asia | Eastern Europe | Oceania | Total |
|---|---|---|---|---|---|---|
| Commercial (large-scale) agriculture | 23% | 47% | 44% | 71% | 19% | **43%** |
| Smallholder agriculture | 36% | 28% | 34% | 25% | 29% | **31%** |
| Pastoralists | 5% | 7% | 3% | 4% | 0% | **5%** |
| Forestry | 29% | 11% | 11% | 0% | 53% | **16%** |
| Conservation | 7% | 6% | 8% | 0% | 0% | **5%** |

Note: Individual deals list up to four different former land uses. The Land Matrix does not provide information on the share of area for each type of former land use; hence, for this analysis, we have divided the area under contract and attributed equal shares to each former land use. N (deals) = 298, N (former land use) = 398.
Source: Authors' calculation based on Land Matrix data, April 2016.

## 4.3. Socio-ecological contexts of acquired land

In order to further investigate local contexts, more detailed research was conducted by Messerli et al. (2014) on a sub-sample of land deals contained in the Land Matrix. Their analysis used information on 139 intended and concluded agricultural deals for which more precise geospatial information was available and analysed these deals based on land cover, population density and accessibility of the target area.

**Population density:** Analysis of the local context revealed on average a considerable population density – 81 people per square kilometre in contexts dominated by croplands (Messerli et al., 2014). When relating this to the overall size of land acquisitions reported in the Land Matrix, we need to consider that the data refers to the context in which land deals take place and not the land actually acquired. Nevertheless, Messerli et al. (2014) extrapolated that, worldwide, some 33 million people may potentially be affected (directly or indirectly) by the concluded deals presently recorded in the Land Matrix. Illustrative of the difficulty inherent in this estimation is that the best land is frequently subject to large-scale land acquisition even in sparsely populated areas, such as semi-arid zones, and this is land where herders bring their animals during the dry season and periods of drought. As a result, they may be forced to relocate to even more marginal land in search of water and fodder and hence be driven deeper into poverty.

**Accessibility:** Land deals are often seen within a perspective of improving access in remote areas. However, in reality, in many cases investors follow the opportunities (i.e. lower cost of access) created by public infrastructure. Over 50% of the 139 deals analysed are in relatively accessible areas, less than six hours' travel from a city of 50,000 or more people; in Africa, nearly 80% of the deals are within this range. About 30% are within 3–4 hours of the nearest city (Messerli et al., 2014).

Combining this data with data on land cover in the target areas, Messerli et al. postulated that large-scale land acquisitions and their impacts could be clustered into three distinct socio-ecological patterns. Each of these three patterns involves a distinct type of competition over land between its various functions and related stakeholder claims. The patterns of land acquisitions targeting different types of local context and the significance of these can be described as follows (based on Messerli et al, 2014).

**Densely populated and easily accessible areas with cropland mosaics:** This pattern applies to about one-third of land deals in the sample; this finding supports criticism of the assumption that land deals target mostly "idle" or "unused" land (Borras et al., 2011). This type of local context is often characterised by strong competition for land and concerns that it is often already being used by smallholder farmers. Such competition is likely to result in deals having negative impacts on livelihoods and on gender equality, with evictions, loss of customary land rights and changed property regimes. Case study research related to this pattern shows that negative impacts generally outweigh the benefits of such land deals.

Largely remote and sparsely populated forestland: This pattern again applies to one-third of the land deals studied, but it contrasts with the less competitive situation found in densely

"Over 50% of the 139 deals analysed are in relatively accessible areas, less than six hours' travel from a city of 50,000 or more people; in Africa, nearly 80% of the deals are within this range."

populated and easily accessible croplands. Case studies have described two relevant processes that relate to this pattern. First, research has shown that land acquisition is often used as a means of securing access to and control over natural resources such as trees and water (Borras and Franco, 2012). Control over forests is an important incentive for investors, as income from logging activities required for land clearance may compensate for initial capital investments. Moreover, forest-related land use systems such as shifting cultivation are vulnerable to rapid transformation, as they are widely viewed as backward and economically unproductive (Heinimann et al., 2013; Hurni et al., 2013; van Vliet et al., 2012). Second, studies have found neoliberal tendencies in initiatives aimed at conserving natural resources. Conservation agencies which acquire land for purposes of environmental protection or carbon sequestration have been accused of contributing to "green grabbing", as their initiatives deprive local people of access to land (Messerli et al. 2014).

**Moderately accessible and moderately populated shrub- or grassland:** About one-quarter of the analysed land deals were found to occur in contexts where shrublands or grasslands dominate. In many cases, this type of land is used as rangeland under pastoral systems, but it also includes fallow land. It is often managed as a common pool resource. From a purely economic perspective, such land may appear to be under-used and thus might seem to have considerable potential for development. However, "pastoralist communities are often marginalised and ignored in decision-making processes, and at the same time they are particularly vulnerable to loss of land rights and to disregard of their specific claims on socio-ecological functions of land. Furthermore, environmental risks related to water stress and desertification are considerable" (Messerli et al., 2014). This type of land is often termed "marginal" by outside observers and also within the Land Matrix dataset (see Figure 23), although it is often very important for local livelihoods. The issue of the impacts of land acquistions is further explored in Chapter 5.

## 4.4. Synthesis

Beyond the question of which countries are the preferred targets of land acquisitions, it is also important to take into account the different socio-ecological contexts in which such deals take place. According to findings based on the Land Matrix, many land deals target relatively well accessible areas, due to the importance of good access to inputs and market destinations. For more than half of the area targeted, the previous land cover was already cropland. Population densities in these areas have been estimated to be relatively high, leading to competition and even conflict over scarce land and water resources. However, land deals also take place on forested land and on marginal land and shrub- and grassland used by pastoralists. Although population densities are often lower in such cases, many communities are affected through the loss of access to these areas.

Areas of tropical rainforest and tropical savannah are often acquired, very often for the establishement of palm oil and rubber plantations, especially in Asia. This causes large-scale environmental and social impacts.

# 5. Impacts of Large-Scale Agricultural Land Acquisitions

This chapter looks at the impacts that large-scale land acquisitions have on target countries and affected communities. The extent of these impacts depends upon the institutional, ecological and socio-economic contexts of transactions (discussed in the previous chapter) and on the governance strategies used by multiple actors. Box 9 identifies recurrent patterns from case studies found in scientific peer-reviewed articles and provides insights into the implications of large-scale agricultural land transactions.

Positive impacts generally include jobs and access to infrastructure. On the negative side, loss of access to land and natural resources, increased conflict over livelihoods and greater inequality are frequently highlighted in case studies and scientific literature, to which the Land Matrix also refers. As discussed in Chapter 2, many deals are still only in the start-up phase and it is not yet possible to provide a full picture of their long-term impacts. The impacts of investments in the production phase are often not yet visible either, and can only be inferred through comparison with investments that have been established for a longer period.

**Box 9:** Meta-analysis reveals patterns of livelihood impacts

The implications of large-scale land acquisitions for the livelihoods of people living in the target regions differ substantially across cases, affected people and contexts. However, despite such great diversity, a meta-analysis of 44 scientific studies covering 66 cases in 21 countries in Africa, Asia, Central and Southern America and Eastern Europe identifies certain patterns of livelihood implications.

The most frequently identified adverse livelihood impacts are loss of access to land and natural resources (24%), increased conflict over livelihoods (18%) and greater inequality in local communities (9%). The underlying processes that generate such adverse impacts include enclosure of livelihood assets, elite capture, selective marginalisation and polarisation of development discourses. In situations involving enclosure, local land users lose their land rights without being able to sufficiently rebuild their livelihoods. With elite capture, local or state elites are able to extract disproportionally high shares of benefits from land acquisitions, while land users bear the bulk of the socio-economic and ecological costs. In situations of selective marginalisation, a group of former land users experiences a reduction in their livelihood assets while other land users, other than the elite, are not affected or even benefit.

Together, these four processes account for 88% of the diagnoses given in the 44 case studies. Less frequently observed are processes of competitive exclusion, agribusiness failure and transient job creation, though these may occur more often as many land investments become more mature over the coming years. An array of identifiable risk factors makes the occurrence of such adverse processes more likely. The most notable risk factors include asymmetric participation by land users in economic and political decision-making, an illusion of lands being marginal, unrealistic visions of progressive change and pre-existing inequalities in affected communities.

The most frequently reported positive livelihood impacts relate to the creation of benefits for land users at a household level (35%), in particular through stable, decent employment and access to infrastructure. The creation of benefit is more likely if land users desire to escape traditional societal structures, have de facto power of veto against a land deal or have low opportunity costs related to losing land rights. Pathways of adaptation and co-existence (11% of cases) have become possible, if households and communities retain land rights or access new market niches. Communities have been able to organise collective resistance (19%) either to fight off investor land claims in the first place or to regain rights and livelihoods after a deal has taken place through political and social unrest. Participation of community representatives in negotiations with investors is sometimes reported (19%) to enable land rights protection or compensation, but in other cases this has given rise to undesirable processes of elite capture and selective marginalisation.

Source: Oberlack et al. (2016).
Meta-analysis of case studies provided by Christoph Oberlack, CDE.

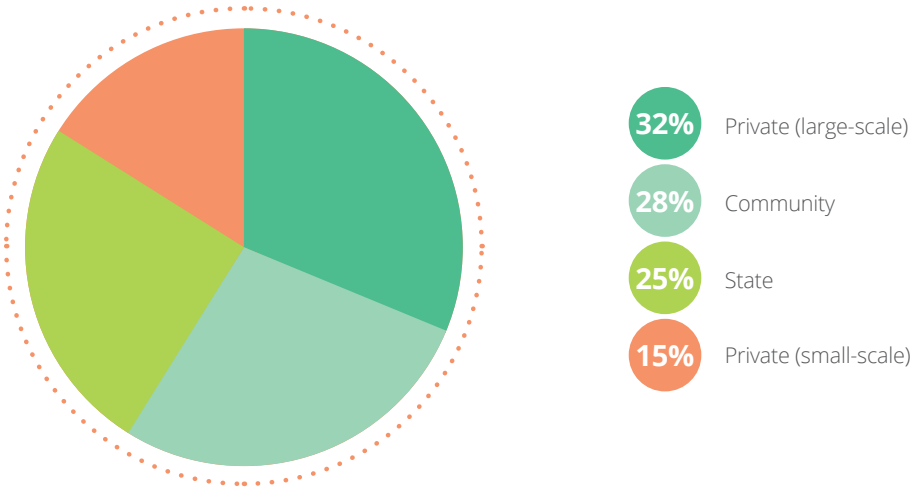
"The impacts of large-scale agricultural investments not only depend on the local context but also differ across the project cycle: a mature farm has a different effect from a project in the start-up phase."

The impacts of large-scale agricultural investments not only depend on the local context but also differ across the project cycle: a mature farm has a different effect from a project in the start-up phase. This also explains the difficulty of assessing the impacts of land acquisitions, as many projects are still very new (see Chapter 2). Accordingly, we have looked into the implications across time and distinguished – in accordance with the Land Matrix's variable "implementation status" – three different phases of the project cycle: a) land acquisitions (project not started), b) the start-up phase and c) operational projects (in production). It is important to remember that deals that have failed can continue to have implications for local communities.

## 5.1. Acquisition of land: little consultation and frequent rejection of deals by communities

Land acquisition has one direct and immediate effect: ownership of the land changes hands. The former ownership of land according to reports in the Land Matrix (336 deals for which information is available) is attributed to private largescale farmers (32%), communities (28%), the state (25%) and private smallholders (15%).[21]

**Figure 24:** Former land ownership (% of area)




Note: Individual deals list up to three different former owners. The Land Matrix does not provide information on the share of area for each type of former ownership; hence, for this analysis, we have divided the area under contract and attributed equal shares to each former land owner. N (deals) = 336, N (former land owner) = 386.
Source: Authors' calculation based on Land Matrix data, April 2016.

In many regions and countries state ownership co-exists with customary land tenure, either individually or community-based. Hence for many land deals, state ownership could still imply that land is owned traditionally by communities. Important questions in such cases include the following. Through which process has the ownership or right of use been transferred to the investor in such cases? Was this process based on free, prior and informed consent (FPIC)? Were customary land rights respected, especially if formal ownership was in the hands of the state? With whom have community land rights been negotiated and did all sections of local society have a voice in this process? How were the rights of marginalised social groups respected?

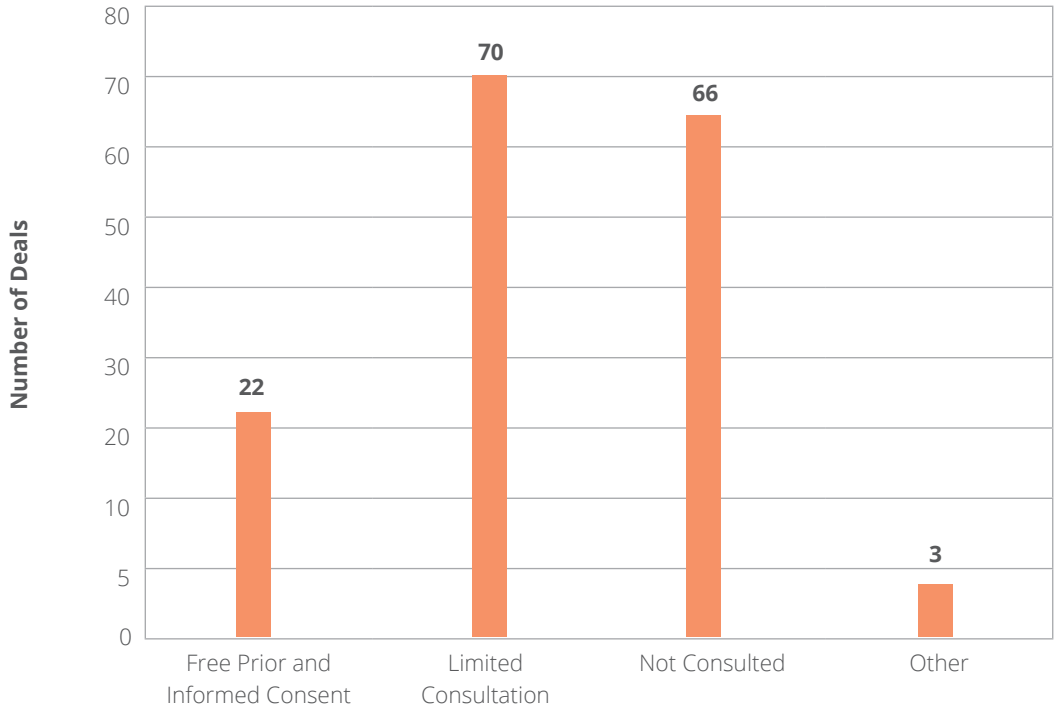
In lease agreements this change in ownership is temporary – but, as discussed in Section 2.1, leases tend to have a long duration, in many cases up to 99 years. A more structural change in ownership takes place in the case of direct purchase but also in situations where communal land tenure is transferred to state land in order for the national government to enter into a lease agreement with a foreign investor. This happens, for example, in Zambia, where conversion from communal land to state land is non-reversible and hence has a long-term impact on the local community, regardless of the duration of the lease agreement (Nolte, 2014).

A crucial aspect in the process of acquiring land is consultation with communities, particularly in cases where land used or owned by communities is affected. Analysis of the data shows that in 41% of cases there is no consultation (see Figure 25). In about 14% of cases a FPIC process has been conducted, while in 43% a limited form of consultation has taken place. The Land Matrix also contains information on how communities have reacted to a project. In 60% of concluded deals, in a sub-set of 180 cases, it records rejection and in 17% consent, while in the

[21] Deals where the former land-owner is a private large scale-farmer do not meet the criteria for inclusion in the Land Matrix. However, some deals also involve land that was originally community- or smallholder-owned but has since been resold by one private actor to another. In this case the deal appears under the category of private ownership, and is still of interest to the Land Matrix as the land has been lost by the local community. There are also deals where commercial agriculture was part of the former use but the land was also used for other purposes. In some cases, the Land Matrix criteria may not have been met, but such cases still need to be followed up and verified.

remaining 23% there were mixed reactions. To find out whether community reactions actually have an impact on negotiations, we also looked into failed deals. Of 97 deals that have failed, only eight included information on community reaction: seven of these (in seven different countries) reported rejection and one mixed reactions. In rare cases, community reaction may affect the negotiations; however, given that 60% of the 180 concluded deals analysed triggered a negative response, in most cases it evidently has little impact. It is important to note that the fact that some form of consultation has taken place is not sufficient in itself to judge the quality of the consultation process, as this can be selective and can bypass important groups that are affected by a land deal.

**Figure 25:** Community consultation




Note: N = 161
Source: Authors' calculation based on Land Matrix data, April 2016.

A change in ownership through a land acquisition usually leads to a) some form of payment, b) a halt to former activities on the land, and c) potential displacements which may involve compensation payments.

Payments for acquired land depend largely on the national context. There can be one-off payments, regular rent fees or non-monetary payments, often within the scope of corporate social responsibility (CSR). Many governments wish to promote investments in the agricultural sector and request development of the land instead of monetary payments (for example, see Bottazzi et al., 2016 for the case of Sierra Leone). In other cases, investors are seen as an engine for development and are meant to contribute to community infrastructure, and consequently are exempt from monetary payments. Furthermore, payment structures can be complex, with revenue flowing to both the local community and the national government.

The diversity of payment models, as well as their sensitivity, explains why it is so difficult for a database like the Land Matrix to store information on this issue. The LM database has information on purchase prices (per hectare)[22] for only 28 concluded international agricultural land deals. These include deals in Brazil (€221 to €2,626 per hectare) and five deals in Romania (€100 to €3,200 per hectare). In 61 cases, the Land Matrix has information on lease prices of concluded international deals (per hectare), including 21 cases in Ethiopia (under €1 to €119 per hectare, with most deals between €3 and €10), five cases in Liberia (€1–4) and four deals in Sierra Leone (€1–10). Although data is limited, this shows the diversity of payments within and between countries; this might well be linked to different land values, reflecting factors such as production potential, scarcity of land, tenure security and market access, as well as other conditions specified in the contract (e.g. tax exemptions, duration of the deal).

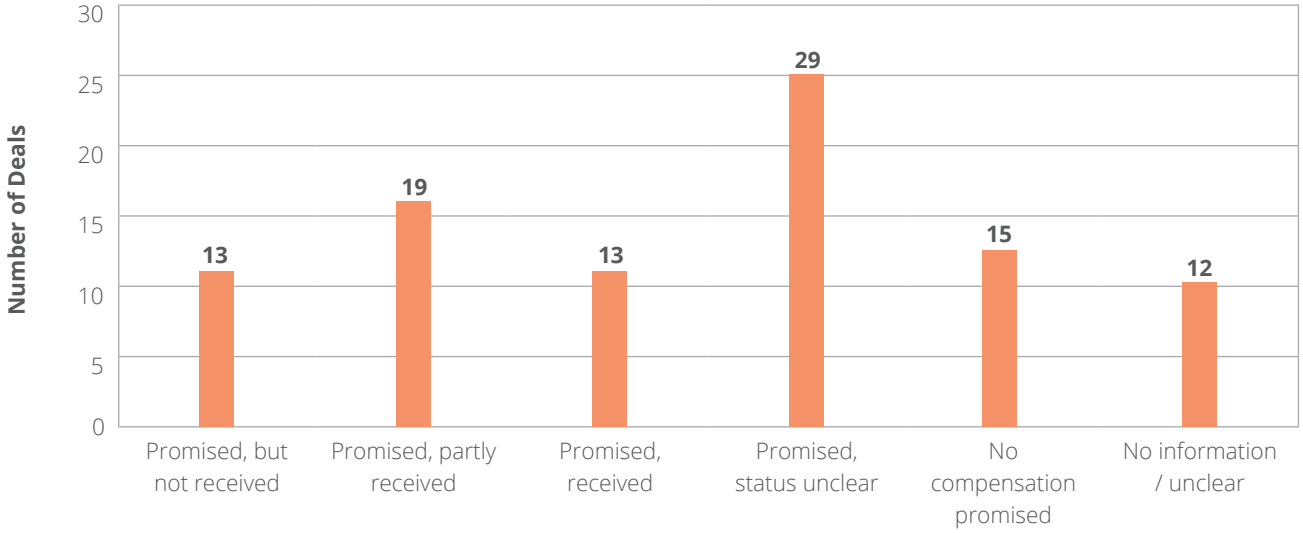
[22] To make the purchase and lease prices comparable, we have converted all currencies to euros at the exchange rate on 1 July of the year in question (using historical exchange rates: http://www.xe.com). These calculations do not take account of inflation.

Acquisitions usually result in former land use activities ceasing and hence lead to a loss of economic and cultural functions. For instance, if land was formerly used for smallholder farming, smallholders might lose access to their fields, with consequences for food security (see Box 12). The acquisition of land may also lead to the displacement of communities, including both voluntary resettlements and forced evictions.

Looking at former land-owners (Figure 24), almost half of the area targeted (43%) was formerly owned by communities, including indigenous peoples, or smallholder farmers, which means that acquisitions are likely to lead to voluntary or forced displacements. Information on displacements is scarce in the Land Matrix, with information for just 89 cases. Of these, 57 mention physical displacement, with some specifying the number of individuals (23 cases) or households/families (21 cases). These deals show that projects where displacement occurs generally involve a large number of people: only three of them displaced fewer than 500 individuals and eight fewer than 100 families. Seven deals are reported to have displaced more than 10,000 individuals and five deals have displaced more than 500 families. A further 21 deals mention people living in the area of the project, which has the potential for future displacements. The remaining 11 deals that do not mention actual or potential physical displacement do mention the loss of farming land and/or the loss of access to land for hunting, grazing or other activities.

Compensation is sometimes paid to people or communities who have lost their access to land. Whether a company as the new land-owner or the government as the former land-owner has a legal obligation to compensate depends on national legislation and on the land tenure status of former land users. Sometimes the benefits of investments, such as jobs and infrastructure, are also perceived and announced as a form of compensation (see the section below on "Operational projects" and Figure 27 on such benefits). The Land Matrix contains 101 agricultural deals where compensation is reported; however, in only about one-third of these cases have promises materialised at least partly, in one-third of cases compensation has never been promised or has not been received, and in the remainder the status is unclear (Figure 26).

**Figure 26:** Status of compensation offered




Note: N = 101, information entered as free text in the Land Matrix data was categorised according to these six categories.
Source: Authors' calculation based on Land Matrix data, April 2016.

Few cases provide more detailed insights into actual compensation measures, which may include resettlement sites, alternative land or monetary compensation. The basis for monetary compensation ranges from payments per home or family to payments per area or productive entity (e.g. trees, area of planted crops). Purely monetary compensation is reported in about one-third of cases where some information is available. See Box 10 as an illustration of the land acquisition phase where an investor's plans are met with resistance by the local population.

**Box 10:** Resistance to land deals – the case of Senhuile in Senegal

Senhuile (Case #3433) is a joint venture between Tampieri Financial Group (Italy) and Senethanol (Senegal). The company currently has 10,000 hectares under contract in the area of Ndiael. It originally had two leases in different locations, but the Government of Senegal repossessed parts of the land in 2016. A first lease of 20,000 hectares was granted in 2012 for 50 years, of which 10,000 hectares was repossessed; and a subsequent lease in 2015 for an additional 5,000 hectares in Fass Ngom was revoked. The company uses the land it still holds for the production of biofuels and food crops.

From the beginning, there has been heavy resistance to the project. Initially, land was allocated to the company in Fanaye. After large-scale protests – in which people lost their lives – the project was relocated to its current sites around the villages of Gnit, Ross Bethio and Fass. The allocated land, community and state-owned, was previously used by local communities for smallholder agriculture. The communities were only consulted during the social impact assessment in 2013, when the land had already been acquired.

In response to the lease, the communities have created an association called "Collectif de Défense des Intérêts du Ndiael", which comprises 37 villages and a number of CSOs. In February 2014, villagers even travelled to Europe, to the offices of Tampieri, to protest against the project. In total, around 9,000 community members from 40 villages have been affected by the project. No-one has been displaced, but the local community has lost access to grazing land, to land for cultivation and the collection of timber, and to water collection points. Villagers living in close proximity to the project are under constant threat of eviction by company representatives and local police.

In an effort to improve working relations between the company and the community, an agreement was signed in 2014 outlining the compensation and benefits that communities would receive. This stipulates that Senhuile will provide 0.3 hectares of land per family for grazing and cultivation; so far, 189 hectares have been allocated to families. The memorandum also promises other community benefits, such as the construction of classrooms and the creation of community gardens for women, but these have not yet materialised. On the other hand, Senhuile has delivered fodder to affected community members to compensate for the loss of grazing.

Sources: Franchi and Manes (2012); ActionAid (2014a and 2014b); ActionAid (2016).
Case study provided by Angela Harding, University of Pretoria, Africa Regional Focal Point.

## 5.2. Start-up phase: temporary employment creation and infrastructure development

In the start-up phase, considerable creation of employment can be expected, but only for a short period of time: land preparation and setting up the farm are merely a transition period. Farm development often entails infrastructure developments that might also benefit local communities: for instance, the construction and improvement of roads or connection to the electricity grid. Infrastructure developments also continue throughout the operational phase. Both employment creation and infrastructure development in the transition phase are difficult to track in the Land Matrix data currently,[23] but Box 11 illustrates this stage.

**Box 11:** Setting up a farm – Dominion Farms Ltd in Kenya

Dominion Farms Ltd (Case #1374) is a private US investment located in Kenya's Siaya and Bondo districts. In 2003 Dominion signed a 25-year lease agreement for 6,900 hectares of land. The company mainly produces rice, which is sold across the country under the "Prime Harvest" brand, but also fish and bananas.

During the start-up stage, Dominion was welcomed to the area with some enthusiasm. People could see how the new farm affected their lives: roads were paved and electricity came to the area because of it. During this initial phase, the investor drained swampland, which made land available for agriculture – though this also raised environmental concerns (see Box 13).

Most importantly, employment was abundant in the first few months of the project; for example, people were employed to prepare the land and chase away birds. However, when the farm became more and more mechanised, these unskilled jobs vanished – and with it the initial enthusiasm.

Source: Nolte and Väth (2015).
Case study provided by Kerstin Nolte, GIGA.

"In the start-up phase, considerable creation of employment can be expected, but only for a short period of time: land preparation and setting up the farm are merely a transition period."

[23] In the next version of the LM Global Observatory, the history of deals will be improved so that the database can store more time-related information and hence track the development of job creation over time – if this information is available.

## 5.3. Operational projects: socio-economic and ecological implications

Finally, the effects of an operational project can only be observed in the case of mature projects. This explains why we still know so little about these effects: many projects have not yet, or have only just, reached the production stage (see Table 7). However, as discussed in Chapter 2, deals are now increasingly being implemented and we therefore expect that the impacts of operational projects will be felt more in the target countries over the coming years. Box 12 and 13 provide examples of the implications of land deals that have been in operation for a number of years. While the focus of this report is clearly on land acquisitions for agriculture, in certain countries acquisitions for other purposes such as mining play an important role. Mining deals[24] equally have important socio-economic and ecological impacts. Box 14 provides an example of one such case and its impacts in Mongolia's Umnugobi province. The literature identifies a number of transmission channels through which operational land deals may impact directly upon the livelihoods of local communities: in particular, infrastructure development, employment generation, access to agricultural markets and spillovers to local communities, but also adverse environmental, social and economic effects (see, for example, Kleemann and Thiele, 2015; World Bank, 2010; and also Box 9).

**Box 12:** Bioenergy project fails to deliver promised benefits

Addax Bioenergy Ltd (Case #1798) is a Swiss-based company producing sugar cane in Sierra Leone on about 10,000 hectares of land leased from the Temne ethnic group. An interdisciplinary group of researchers from the Institute of Social Anthropology and the Centre for Development and Environment (CDE), both at the University of Bern, and the National Research Programme (NRP 68) investigated how this project has changed access to land and natural resources and the effects this has had on livelihoods, food security and ecosystem functions. Due to the significant financial contributions of national and multilateral development agencies, the project established by Addax Bioenergy Sierra Leone (ABSL) had to comply with a series of investment standards, including those of the Roundtable on Sustainable Biomaterials (RSB), and is therefore considered by many to be a "best practice" example.

The main findings of the research team were as follows.

- The project's large-scale monoculture has destroyed a highly diverse cultural landscape, significantly changing the quality of and access to land, water and veldt products, especially for more marginal groups i.e. women, youth, tenants and migrants. Many land users have been excluded from accessing common pool resources, losing previous access rights based on common property institutions. Overall, on average the amount of land used per family for agriculture in the project area is 73% smaller than outside the project area (2.53 hectares compared with 9.16 hectares). Those with no land of their own are more seriously affected by this reduction in land than land-owners (-70% compared with -50%).
- Payments for the leasing of land are low and have been made only to land-owners, who make up about 50% of the people living from agriculture. This compensation has exacerbated existing tendencies towards elite capture of the project's economic benefits, further intensifying tensions and conflicts among different groups within Temne society.
- Total monetary income in the project area is only 18% higher than outside the project area. Meanwhile, expenditure on food in the investigated area has risen by 16% compared with the area outside, meaning that practically all of the additional income in the project area must be used to pay for increased expenditure on food.
- As a consequence, families in the region studied are more susceptible to the effects of fluctuation and crises outside of agriculture. The serious effects of such dependency have already been experienced twice in quick succession by people living in the study area: first the Ebola epidemic, and then the cessation of ethanol production following ABSL's decision to sell its project.
- In the beginning, local people welcomed the project as they anticipated it would bring development and salaried work to the area. As these expectations failed to materialise as expected, different responses were triggered. Local elites as well as the younger generation have activated both old and new ways of resistance, resorting to old institutions of resistance (secret societies) and to a combination of old and new tenure institutions and international legal rights with the aid of a local NGO to win back control over the commons.
- During the implementation phase Addax created over 2,500 mostly part-time jobs, but the bulk of these have been phased out since it ended operations in August 2015.

Even though this project has provided some economic benefits, it has also caused severe negative impacts and the pre-existing local context has led to an unequal distribution of these negative impacts, mainly affecting groups that were already disadvantaged.

Sources: Botazzi et al. (2016); Käser (2014); Lustenberger (2015); Marfurt (2016); Marfurt et al. (2016); Rist et al. (2016).
Box provided by Tobias Haller, Stephan Rist, Fabian Käser, Franziska Marfurt (all University of Bern).

[24] Mining deals will soon be made public on the Land Matrix.

**Box 13:** Rice project falls short of development potential

Thirteen years after it was first implemented, the impacts of a large-scale land investment can be observed in the Yala Swamp in Kenya, a wetland region of more than 200 sq km (Case #1374). Kenya's underlying legal pluralism, dating back to colonial times, provided a legal basis for a US investor, Dominion Farms Ltd, to lease 6,900 hectares of swampland, primarily to produce rice. The lease was agreed with local county councils in the name of development, and as such was welcomed by political leaders. However, discussions about how best to implement the project have been stifled by arguments associated with ethnicity, with groups such as the Kikuya being accused of preventing Luo groups in the region from achieving industrial development and modernity.

Four major issues have arisen from this development:

1. Reclamation of the swampland has had an impact on the resilience of local communities. This becomes evident when comparing the population who benefited directly from the swamp's resources (15,000–35,000 people) with those who benefit directly from employment created by the investment (200 permanent jobs, 400 casuals). The loss of a major livelihood source, combined with a lack of employment opportunities, means that the diversification of livelihood strategies is limited.
2. An area of 450 acres of land was allocated as compensation for the loss of resources. However, after Dominion Farms drained the land, local institutions were ignored and no further steps were taken to distribute the land to local people. Consequently, some wealthy community members, using paid labour, rushed to clear this land in order to lease it themselves. Vulnerable people, including elderly women and poorer peasant farmers, were unable to continue using the land as they had before.
3. Of the 6,900 hectares leased by Dominion Farms, only 40% has so far been put into use. The remaining 60% still lies fallow and to some part has been appropriated by local people for grazing and cultivation. This has resulted in the investor criminalising local people by calling in police to evict them.
4. Dominion Farms has increasingly been collaborating with local NGOs working for environmental protection of the Yala Swamp. However, as these projects largely fail to take into account the views of local stakeholders, the people affected fear losing more land as a result of conservation efforts and wildlife protection measures.

Considering these issues and the fact that the rice produced by Dominion Farms is not consumed locally, this project appears to have had a number of negative effects. Local people want more labour opportunities and stronger integration of local stakeholders, including the community's knowledge, experience and way of living, in order for more people to benefit from the investment.

Source: Based on field research in Kenya, 2014.
Box provided by Elisabeth Schubinger and Anna von Sury (both Institute of Social Anthropology, University of Bern).

**Box 14:** Mitigating the impacts of mining operations

Oyu Tolgoi LLC, a mining company joint-owned by the Mongolian government and international investors, operates a mine about 600km south of the country's capital Ulaanbaatar in Umnugobi province, where it has extracted copper and gold since 2009 (Case #4569). The zone used by the company for mining and related infrastructure overlaps with the Small Gobi Strictly Protected Area (SPA), which is rich in biodiversity. People in this water-scarce desert area rely on traditional nomadic animal husbandry for their livelihoods.

The company's operations have had a considerable impact on this fragile environment. For instance, the only river in the region, the Undai, was diverted to supply water to the mine. Sixteen herder families with 61 members have been displaced and have had to give up their pastureland. An additional 80 households, with 365 members, have not been physically displaced but have also lost their pastureland. However, all the families have received in-kind compensation from the mining company and alternative grazing areas have been identified.

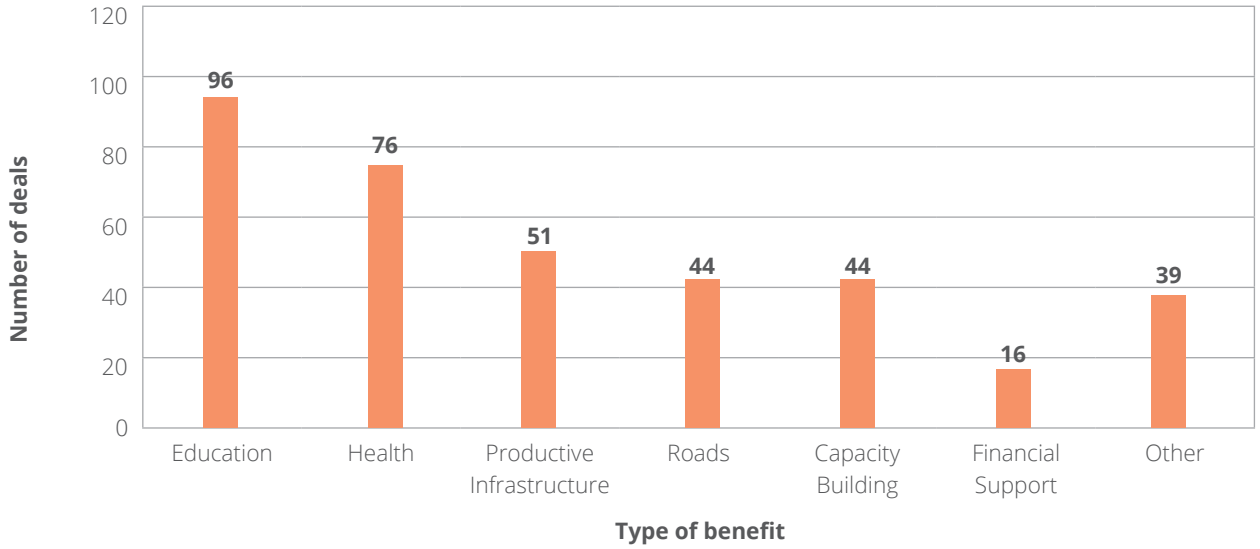
The company tries to mitigate adverse effects by investing in sustainable development projects, including education and training for herders – for instance, two kindergartens have been built in Dalanzadgad. The company's activities have also provided an economic stimulus, first and foremost by creating employment. Its workforce is 95% composed of Mongolian nationals, of whom 21.7% are from the South Gobi community (as of December 2015).

Sources: Oyu Tolgoi (2016); Nutag Partners LLC (2015).
Box provided by Hijaba Ykhanbai, Jasil.

### 5.3.1. Development of social and community infrastructure

Besides the infrastructure development accompanying the establishment of farms, as mentioned in the section above on the start-up phase and in Box 11, some investors deliberately invest in community infrastructure – often as a way of community compensation or CSR. As Figure 27 shows, community benefits take a number of forms. Most frequently mentioned are investments in education through the establishment of schools (96) and health facilities (76) such as clinics, followed by productive infrastructure such as irrigation, tractors or machinery (51), roads (44), capacity-building (44) and financial support through loans (16). However, Land Matrix data does not permit any assessment of the percentage of cases where these investments are actually implemented or to what level the expectations of local people are met.

**Figure 27:** Community benefits




Note: N = 148 (multiple answers possible)
Source: Authors' calculation based on Land Matrix data, April 2016.

### 5.3.2. Employment generation

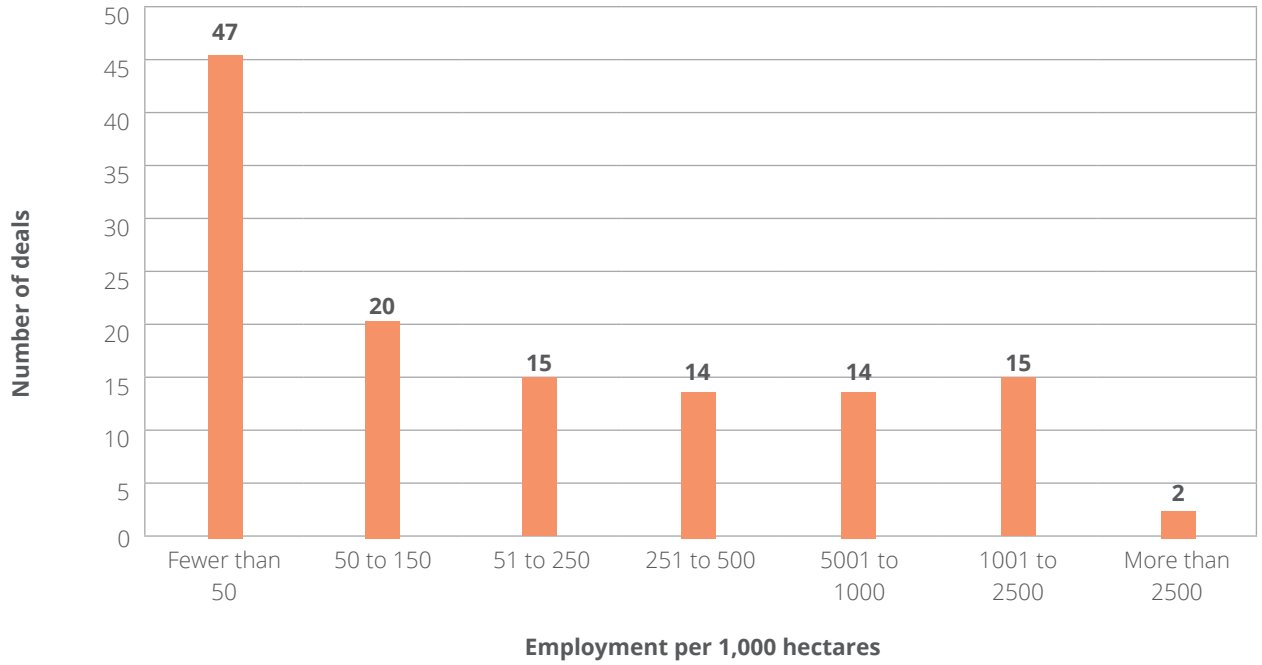
One of the most frequently cited benefits from large-scale land acquisitions is the net creation of employment. If a newly established farm creates wage employment in a rural region, this is supposed to increase the incomes and social security of employees, leading to increased welfare.

Unfortunately, data on employment is still difficult to obtain. This is not surprising, given the seasonal fluctuation in labour demand in agriculture. Drawing on a limited sample of 127 cases, we looked at labour intensities, i.e. employment per 1,000 hectares under operation (Figure 28). Labour intensities tend to be very low – in a large number of cases, below 50 workers per 1,000 hectares. These low figures suggest capital-intensive production and, with it, a limited capacity to absorb rural employment.

Ideally, our sample would be sufficiently large for us to compare labour intensities across crops, as some crops are more labour-intensive than others. For instance, the three cases with the highest labour intensities include tea and grape production, while among the lowest labour intensities are many cases of grains and cereals, where typically production is highly mechanised.

"Labour intensities tend to be very low and suggest capital-intensive production with a limited capacity to absorb rural employment."

**Figure 28:** Labour intensities in the Land Matrix




Note: N = 127. Employment per 1,000 hectares under operation. Where the area under operation is not given, we use a share of the area under contract. The share is determined by all deals that have both the area under contract and the area under operation.
Source: Authors' calculation based on Land Matrix data, April 2016.

Box 15 provides more insights into the potential of land acquisitions for creating employment, pointing to an immediate net employment loss but calling for more research, including into medium- and long-term effects in order to complete the picture.

**Box 15:** Large-scale land acquisitions – employment generators or job killers?

To understand the immediate impacts of large-scale land acquisitions on the rural labour market, three key determinants must be taken into account. First, the former land use indicates if and to what extent employment is crowded out; in particular, smallholder farmers are likely to lose their livelihoods if a commercial farm is set up on former smallholder land. Second, the type of crop cultivated defines labour input, since labour requirements differ greatly between crops. While the cultivation of some crops can be performed largely with machinery (e.g. corn, wheat, soybeans), the scope to substitute capital for labour is quite limited for other crops (e.g. tea, coffee, bananas). Accordingly, crops can be classified as either labour- or capital-intensive. Third, the production model applied might mitigate crowding out, for instance by using contract farming schemes.

An analysis of these factors based on Land Matrix data shows that the crowding out of smallholder farmers is a serious concern across all regions: over one-third of the land acquired was formerly cultivated by smallholder farmers (see also Table 17). Moreover, capital-intensive crops are three times more commonly cultivated compared with their labour-intensive counterparts. Lastly, contract farming schemes are only partly able to mitigate crowding out, since they are applied on only about two out of every 10 hectares of land affected.

The large-scale crowding out of smallholders, in combination with the strong preference of commercial farmers for capital-intensive crops and the relatively low prevalence of contract farming schemes, points to a net employment loss. In different countries, this loss is estimated to range between 28% (Tanzania) and 75% (Kenya) compared with smallholder farming. Although these losses have a big impact in the immediate proximity of the investment site, on the national level they reflect on average less than 1% of overall employment in agriculture. However, this is only half the story. To assess the macroeconomic impact of large-scale investments further research is needed, taking into account other factors such as price and wage effects and sectoral linkages. These medium- and long-term effects might trigger a change in the sectoral composition of an economy and absorb the released labour.

Source: Nolte and Ostermeier (2016).
Box provided by Martin Ostermeier, GIGA.

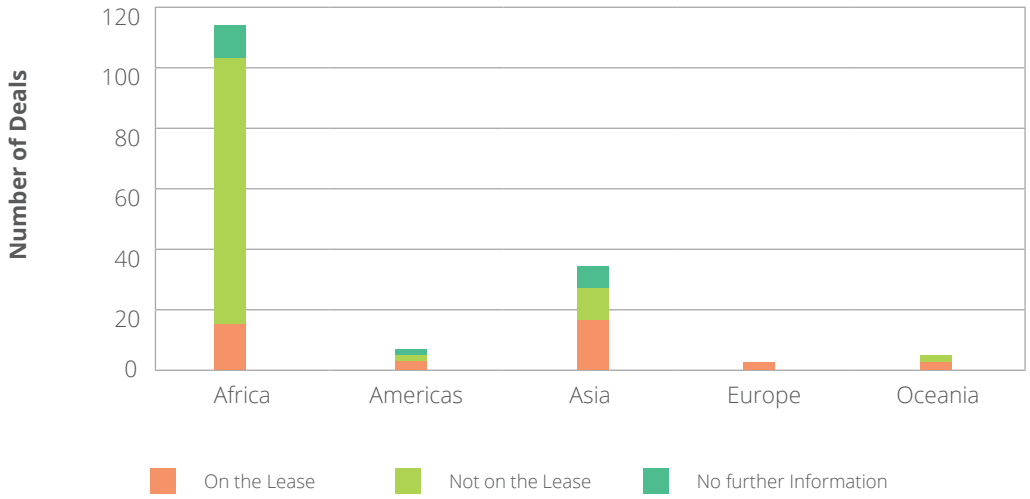
### 5.3.3. Access to agricultural markets and spillovers

A commercial farm in a rural area also has non-immediate impacts in terms of transforming the sector, such as linkages to other industries and formalisation of employment. While an accurate assessment of these processes would need to go beyond the Land Matrix, 434 deals confirm that in-country processing of products is taking place or is intended. This shows that land acquisitions have further effects on the domestic economy.

Many farms are located in close proximity to smallholder farmers and hence better access to markets and spillovers in agricultural techniques can be expected. As seen in Figure 27, access to productive infrastructure is one of the community benefits commonly generated by large-scale investments. Generally speaking, access to markets and spillovers depends largely on the business model in use: the more inclusive it is, the higher the chances of positive spillovers (FAO, 2013). The Land Matrix data gives some insights into contract farming, which is considered an inclusive business model (Chamberlain and Anseeuw, forthcoming). In these arrangements, smallholder farmers generally receive inputs on loan at the beginning of the season and in return sell their produce to a large-scale farm, with the harvest paying off the loan at the end of the season. The pros and cons of contract farming are heavily debated in the available literature, but it is said to be a success in the context of land acquisitions (De Schutter, 2011). One aspect that fuels the debate is the fact that contract farming often favours smallholders who are already better off (Bellemare, 2012).

In the Land Matrix data, 159 deals are reported to use some form of contract farming (47% of deals that have information on this issue) (Figure 29). Most contract farming takes place on areas not leased by the investor, but on land owned by outgrowers (101 cases). The remaining 38 cases have implemented a tenant farming model, where smallholder farmers produce for a large-scale investor on land that belongs to the investor. A typical crop produced under a tenant farming arrangement is oil palm, with 15 cases (eight of them in Indonesia). The largest shares of deals that involve contract farming are in Africa (113) and Asia (34).

**Figure 29:** Regional distribution of contract farming




Note: N = 159
Source: Authors' calculation based on Land Matrix data, April 2016.

"There is potential for outgrower schemes to include and potentially benefit local communities. Nevertheless, these cases illustrate that setting up outgrower schemes in remote areas also involves challenges."

**Box 16:** Outgrower schemes in Zambia

Amatheon Agri Ltd and Chobe Agrivision are two large investors in Zambia who are currently setting up large outgrower schemes. Amatheon, located in Mumbwa district, launched its outgrower programme in April 2013 with the goal of involving 8,500 smallholder farmers in growing maize and soybeans (Case #3783). Chobe has an operational scheme in Mpongwe (Case #3125) and is currently setting up an outgrower scheme near its Mkushi operations (Case #2053), with the aim of involving 5,000 to 10,000 farmers in growing maize and wheat.

Both investors stress that their outgrower schemes on the one hand serve the purpose of including the local population, but on the other are also beneficial to their own businesses, as they will increase market share and company-owned mills can run at full capacity. Schemes are group-based and provide farmers with inputs and training on conservation farming, access to credit and a guaranteed market. A number of local partners are involved in setting up the schemes, for instance through training or financial services.

Smallholder farmers involved in these schemes report the benefits of training, improved availability of inputs and better access to markets and credit. However, one of the main challenges in the field is to explain the complex schemes to local smallholders who in some cases are suspicious, as the way the schemes work remains unclear to them. This highlights the degree of involvement that is required from investors to make contract farming work: it demands careful planning and continuous engagement with local communities.

Source: Nolte and Subakanya (2016).
Box provided by Kerstin Nolte, GIGA.

The number of outgrower farmers in these schemes ranges between 10 and 35,000, with a mean of 4,468 and a median of 1,250 (based on 34 observations for which information is available).

Currently, an analysis of the impacts of outgrower farming models is beyond the scope of the Land Matrix data, as more detailed information over a longer period of time is needed. Box 16 provides case study insights into two farming operations in Zambia that are currently setting up large outgrower schemes. These cases show that there is potential for outgrower schemes to include and potentially benefit local communities. Nevertheless, these cases illustrate that setting up outgrower schemes in remote areas also involves challenges.

### 5.3.4. Environmental effects

In terms of environmental effects, as well as the context and the former land use, much depends on the mode of production implemented in individual large-scale land deals and any mitigation measures taken. For instance, production based on a monoculture with heavy use of pesticides is likely to have a more adverse environmental impact than conservation farming. The introduction of agro-industrial production methods on large areas, using high-yielding crop varieties, will entail the displacement and further decline of local agro-biodiversity. However, such changes also need to be put into perspective against possible negative environmental effects of previous land use systems, such as possible soil nutrient mining, extensive slash-and-burn systems of farming or over-use of natural resources by impoverished smallholders or pastoralists.

The Land Matrix does not cover environmental information in detail, due to the difficulty and complexity of reporting such data in a meaningful way. However, there is rich case study evidence: for instance, Box 17 on a case in Salta province in Argentina stresses the far-reaching environmental and social implications of agricultural expansion. This case study illustrates how governments may adapt their policies to address environmental problems, although it also shows that these are not without ambiguity.

**Box 17:** Environmental concerns and silvopastoral systems in Salta, Argentina

The production of raw materials and commodities for export is the main driver of agricultural expansion in Latin America, and it is almost always associated with large land transactions. Much of this expansion has caused deforestation of native forests and other environmental problems (such as erosion, soil salinisation, loss of biodiversity and an increase in CO2 emissions) and social unrest (displacement of rural populations, unemployment, loss of traditional livelihoods).

In the province of Salta in northwestern Argentina, a national law passed at the end of 2007 classifies native forests into three categories: I (high conservation value), II (medium conservation value) and III (low conservation value). Deforestation for productive activities can only be authorised in category III forest land.

The possibility of allowing different types of silvopastoral production systems (combining forestry and the grazing of animals) in category II forests is currently under discussion. This would enable an increase in agricultural production without engaging in the political and social debates that would be generated by a new land use planning process. Case #4974 in the Land Matrix, a 9,700-hectare farm purchased in 2004, is currently trialling a silvopastoral production system. In this case, livestock for export is raised on land subject to forest management practices that avoid total deforestation. According to preliminary results, the production of beef is virtually the same as in conventional farming systems. However, additional studies are needed to conclusively prove the feasibility and environmental sustainability of this production system.

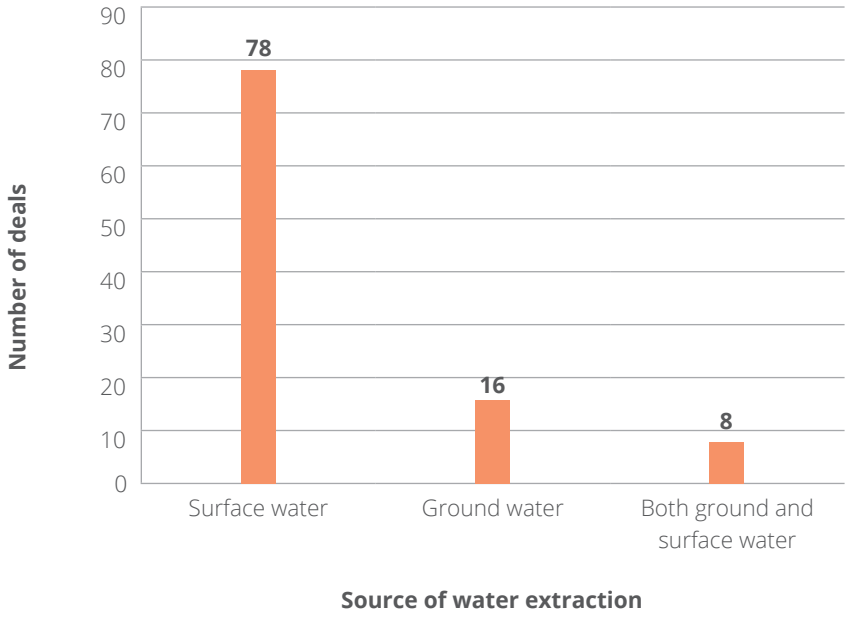
A major problem is that the government has not allocated sufficient funds to strengthen environmental control agencies. In this context, authorising silvopastoral systems on category II land without any assurances that strict monitoring will be enforced could simply lead to hidden deforestation.

The government's policy is ambiguous: while on the one hand meetings are held with multiple stakeholders to discuss the technical aspects and benefits of silvopastoral systems, on the other hand intensive farming and monocultures continue to be encouraged, even on state-owned land. For instance, deals #1060 (228,000 hectares) and #4130 (228,000 hectares) are clear examples of public land concessions for intensive soybean production.

Source: Based on field research conducted in Salta province since 2007. For further contextual information, see Seghezzo et al. (2011).
Box provided by Cristian Venencia, Lucas Seghezzo, Martín Simón and Gabriel Seghezzo, FUNDAPAZ, Regional Focal Point Latin America.

One variable that is captured is information on the source of water extraction. For the 102 deals that have this information, the great majority use surface water, e.g. rivers and lakes (78). Sixteen deals use only ground water, and eight use ground and surface water (Figure 30). This by itself does not signify an over-use of resources, but it could be a pointer towards increased competition for water with other uses. Chapter 2 illustrated a concentration of land deals along major rivers, indicating further evidence of land acquisitions impacting on water availability for other users. Access to water has also been highlighted in the literature as a possible driver of land acquisitions (Mehta et al., 2012); however, this is still debated (see also Box 18, which uses a sample of 475 deals from the Land Matrix to study the effects of land acquisitions on water resources).

**Figure 30:** Sources of water extraction




Note: N = 98
Source: Authors' calculation based on Land Matrix data, April 2016.

**Box 18:** Effects of land acquisitions on water resources

Insights from reports and various case studies suggest that foreign investment in agricultural land is often motivated by the appropriation of water resources attached to that land, a notion commonly also referred to as "water grabbing". According to a further hypothesis, large-scale land acquisitions thereby serve the goal of relieving pressure on domestic water resources in investor countries by means of a "virtual water trade".

To test the "virtual water trade" hypothesis, we analysed 475 land acquisitions in the Land Matrix database. This analysis shows that, at a global level, implementation of the land acquisitions in the sample would result in increased water savings based on virtual water trade. The realisation of these land acquisitions in host countries would save 23.4% of crop water consumption compared with the same crops being produced domestically in the investor countries. However, in host countries the intensity of water use would increase, in a phenomenon that could be described as "water grabbing". Nearly two-thirds of crop water consumption by land acquisition projects would be concentrated in just 10 out of 59 host countries. In at least 21 host countries, including 15 sub-Saharan states, crop water consumption per hectare would increase compared with their current average agricultural water consumption. Further, through statistical analysis it can be shown that host countries with abundant water resources are not preferred per se to arid or semi-arid countries as target areas of land acquisition.

Looking at investor countries, we see that a small number are responsible for a large share of water consumption related to land acquisitions. As few as six out of 54 investor countries – Saudi Arabia, China, Malaysia, the United States, India and Brazil – account for more than half of the total of this kind of water consumption in host countries. We also show that land acquisitions by 20 investor countries would increase host countries' average domestic crop water consumption if they were implemented, indicating that investors in land abroad might indeed be motivated by the aim of reducing pressure on their own water resources. The group of countries that are disproportionately externalising crop water consumption includes big investors such as the USA, Saudi Arabia, Singapore and Japan. At the same time, a number of countries that are often suspected of acquiring land abroad to relieve pressure on their domestic water resources – such as China, India and all the Gulf States except Saudi Arabia – tend to invest in agricultural activities abroad that are less water-intensive on average than their own domestic production. Thus, the repeatedly voiced hypothesis that investor countries' investments in land abroad are motivated primarily by relieving pressure on domestic water resources appears to have little basis in reality.

Source: Breu et al. (2016).
Box provided by Thomas Breu, CDE.

## 5.4. Synthesis

This section has shown that large-scale land acquisitions can have far-reaching implications, both positive and negative, for target regions. Specific effects are very diverse, depending on individual deals and the specific contexts in which they take place – and they differ across time.

Based on our analysis, we can draw some overall conclusions. First, the land targeted by land deals has often been used before, mainly for agricultural activities, pastoralism and forestry. As land acquisitions only rarely take place on idle land, they can potentially have serious implications for people living on the land or using it. Acquisitions are frequently marked by limited consultation, and communities are increasingly opposing projects.

Second, in the start-up phase and continuing once the project begins operations, infrastructural benefits are reported, with investments in community infrastructure, such as health and education facilities.

Third, employment is an important determinant of whether projects have beneficial results. The data held in the Land Matrix is not yet sufficient to determine the extent of labour creation through land acquisitions, but first evidence suggests relatively low labour intensities in projects that are up and running.

Fourth, contract farming models are an option for including local smallholders. Land Matrix data shows that a substantial share of deals employ contract farming systems. However, such schemes are not automatically beneficial to participants (or to non-participants), and a high degree of involvement by investors is necessary to make the model work.

Fifth, it is important to gain a better understanding of the trade-offs between socio-economic and environmental aims. In-depth case studies have shown the complexity and importance of local contextual factors. The Land Matrix data can serve as a starting point to support further impact studies.

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# Notes

# Notes


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