



LANDac

Land Governance for Equitable and Sustainable Development



Flowers for food?

Scoping study on Dutch flower farms, land governance and local food security in Eastern Africa



Synthesis and country reports

Food & Business Knowledge Platform (F&BKP) and LANDac

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Scoping study on Dutch flower farms, land governance and local food security in Eastern Africa

Commissioned by the Food & Business Knowledge Platform (F&BKP)

Conducted by LANDac/IDS, Utrecht University

Cover photo: Evans Kirigia (Farmer cultivating land using a plough and oxen in Bishoftu, Ethiopia)

Photography: Gemma Betsema & Evans Kirigia

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LANDac

LANDac, the Netherlands Academy on Land Governance for Equitable and Sustainable Development, is a partnership between Dutch organizations working on land governance. Led by the International Development Studies (IDS) group at Utrecht University, it is a partnership between IDS and the African Studies Centre (ASC), Agriterra, the Sociology of Development and Change (SDC) group at Wageningen University, HIVOS, the Royal Tropical Institute (KIT), and the Netherlands Ministry of Foreign Affairs. With a focus on new pressures and competing claims on land and natural resources, the LANDac network conducts research, disseminates information, and organizes courses and trainings. The guiding question is how to optimize the link between land governance, sustainable development and poverty alleviation.

www.landgovernance.org



F&BKP

The Food and Business Knowledge Platform (F&BKP) is one of five Knowledge Platforms initiated by the Dutch Ministry of Foreign Affairs in 2012. It is an open and independent initiative where representatives from international networks and organizations of business, science, civil society and policy come together. The Platform shares, critically reflects on, generates, deepens and improves interdisciplinary knowledge; this knowledge feeds into practices and policies on food and nutrition security. Land governance is one of the prioritized themes in its mission to develop a more focused knowledge agenda.

www.knowledge4food.net



This scoping study

This scoping study consists of a synthesis report followed by four country reports. The synthesis report provides a summary of a study that assessed the contribution of the Dutch flower sector to local development and food security in Eastern Africa. Field research was carried out in four countries that host communities of Dutch flower farmers, namely Kenya, Tanzania, Uganda and Ethiopia. The individual country reports, based on five months of fieldwork, can be found in the annex to this document. The analysis is based on interviews and focus group discussions with flower company representatives and their employees, and neighbouring households as well as key informants such as local chiefs and elders, businesspersons active in the food sector, government employees and non-governmental organizations (NGOs). The field work for this study was carried out by Evans Kirigia (Kenya, Tanzania, Uganda and Ethiopia) and Gemma Betsema (Uganda) and the final report was written in collaboration with Guus van Westen and Annelies Zoomers of IDS.

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Abbreviations

AfDB	African Development Bank
BOPP	British Ornamental Plant Producers' Certification Scheme
CAR	Central African Republic
CFSVA	Comprehensive Food Security and Vulnerability Analysis
DRC	Democratic Republic of the Congo
EPRDF	Ethiopian People's Revolutionary Democratic Front
F&BKP	Food & Business Knowledge Platform
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GFSI	Global Food Security Index
GoK	Government of Kenya
GoT	Government of Tanzania
GoU	Government of Uganda
HCDA	Horticultural Centre for Development Association
IDS	the International Development Studies group at Utrecht University
JKIA	Jommo Kenyatta International Airport
KFC	Kenya Flower Council
KIA	Kilimanjaro International Airport
LANDac	Netherlands Academy on Land Governance for Equitable and Sustainable Development
MPS	Milieu Programma Sierteelt
NBS	National Bureau of Statistics
NPS	National Panel Survey
NEMA	National Environment Management Authority
PCPB	Pest Control Products Board
PES	Payment for Environmental Services
PPE	Personal Protective Equipment
SSA	Sub-Saharan Africa
TAHA	Tanzania Horticulture Association
TPAWU	Tanzania Planters' and Agricultural Workers' Union
UAE	United Arab Emirates
UFEA	Uganda Flower Exporters Association
UIA	Uganda Investment Authority
UK	United Kingdom
USA	United States of America
UU	Utrecht University
WFP	World Food Programme
WWF	World Wildlife Fund
WRMA	Water Resource Management Authority

1 Introduction

The Netherlands is an important actor in the floriculture sector worldwide. Many Dutch flower companies have in recent years established businesses in the Global South as a result of favourable climatic conditions, available land and water resources, and the presence of cheap labour. With the aim to stimulate investments in developing countries (e.g., in the context of the Private Sector Investment programme) some companies were further incentivized by the Dutch government to start up their business through development-related subsidies or favourable loans. Justified by the perceived availability of underused tracts of arable land and the need to bolster global food security, the government views private sector investments as levers for poverty alleviation and inclusive growth. In the policy note on the 'new direction' for Dutch development cooperation, the Ministry of Foreign Affairs stated, 'It is our task to encourage investment and trade that benefit people and planet, create jobs and, preferably, are accompanied by the transfer of knowledge and skills' (Ministry of Foreign Affairs of the Netherlands, 2013: 10). In this context, flower companies have the potential to contribute to development – and indirectly to food security – through: the transfer of agricultural knowledge; increased income generation through employment opportunities and by linking smallholder producers to export markets, and increased export earnings.

At the same time, this floriculture industry is increasingly scrutinized as it produces inedible luxury goods through the use of scarce land and water resources in areas faced with widespread food insecurity. Moreover, the investments are often located in regions characterized by weak land governance; in these areas local smallholders do not have formal rights to land and so are relocated in the process of floriculture development without sufficient compensation, consultation, or real participation. This constitutes an extra challenge for responsible foreign investments in floriculture that aim to sustainably develop along a triple bottom line: a viable business (profit) which contributes to the development objectives of improving livelihoods (people) under environmentally sound conditions (planet). As such, while business development and responsible Foreign Direct Investment (FDI) are potential ingredients for economic growth (including employment generation), negative consequences may arise. These include reduced access to land among local communities, endangered local livelihoods, widened social cleavages and eroded regional food security.

Despite the fact that food security and land governance are placed high on the Dutch development cooperation agenda, little is known about the impacts of floriculture investments on local development and, more specifically, on local food security. While research has been carried out to evaluate the socio-economic and environmental impacts of flower investments, there is a significant knowledge gap on how floriculture companies gain access to land and water resources as well as how these investments impact on local food security. The current study aims to address this knowledge gap and incorporate a specific focus on issues related to land governance and access to natural resources.

1.1 Methodology and study scope

In recognition of this knowledge gap, LANDac and the Food & Business Knowledge Platform took the initiative to carry out a scoping study on the impacts of the Dutch¹ floriculture sector in Eastern Africa. The study covers four countries: Kenya, Tanzania, Uganda and Ethiopia (see the annex for the full country reports).

The study addressed the following research question:

In the context of land governance in Eastern Africa, what are the impacts of Dutch floriculture investments on local food security and how can positive contributions be enhanced?

The following sub-questions provided guidance in unpacking the main question above:

- *What are characteristics of the Dutch flower sector in Kenya, Tanzania, Uganda and Ethiopia?*
- *What kinds of land conversions are taking place, and what are the consequences for local natural resources, namely land and water?*
- *What is the impact of Dutch floriculture investments in terms of local development (employment, income and technology transfer, etc.) and food security?*
- *How can Dutch flower farms contribute to local*

¹ The focus of the study has been on Dutch flower farms, but because it comprises a scoping of the field, non-Dutch investors have been interviewed as well. This was done to gain broader understanding of the floriculture sector in Eastern Africa, while also allowing for 'good practices' that might provide interesting lessons for the Dutch floriculture sector.

development and food security, yet minimize risks and vulnerabilities?

The study, based on data collected from 20 farms in four countries, aimed to identify good practices as well as to formulate recommendations for optimizing linkages between Dutch floriculture investments, local food security and land governance. Respondents in the study included flower companies (20), their employees (88) and other key stakeholders (61), including households neighbouring the companies, key informants such as local chiefs and elders, businesspersons active in the food sector, government employees, and NGOs (see also Table 1 for an overview of interviewed stakeholders per country). Interviewed stakeholders were selected through the use of snowball sampling. By focusing on the local food security impacts (both direct and indirect, positive and negative) and land governance arrangements, and by presenting and systematically comparing fieldwork outcomes from four different countries, this study, the first of its kind, provides recommendations for future research and policies.

This research builds on earlier work (van Westen et al. 2013) that appraises the role of Dutch entrepreneurs in agribusiness and their levels of Corporate Social Responsibility (CSR) performance in Africa. Van Westen et al. look into contributions of Dutch entrepreneurs to local sustainable development in Africa, and the study partly touches on local food security impacts. The main conclusions are that it is difficult to assess the impact of Dutch agribusiness on food security and no direct linkages exist between FDI and food security. Impacts are detected through wage employment and potentially through the introduction of more advanced technologies (van Westen et al. 2013). We want to expand this food security focus with the current study.

Another study commissioned by the F&BKP, to which the findings of the current research aim to contribute, is 'How does the Fruit and Vegetable Sector contribute to Food and Nutrition Security?'. This literature review by Joosten et al. (2015), which pays special attention to a selected group of African and Asian countries, presents the contributions in the fruit and vegetables sector on food and nutrition security. Their main conclusion is that, in developing countries, the development of the fruit and vegetable sector has a positive impact on the food and nutrition security of the people in the sector as well as consumers. However, the study did not include other more intensive agri-food production sectors; it recommends that similar studies are made in these sectors in order to guide future policies and interventions by governments, donors, CSR managers and development agencies. Therefore, we want to add to these findings by focusing on the most important sector when it comes to Dutch horticultural activities abroad: the flower sector. We are specifically interested in the impacts of Dutch flower farms in developing countries and their related food security outcomes.

The research is carried out by Utrecht University's International Development Studies group; IDS is the leading partner of LANDac, a network especially focusing on the land governance linkages to food security. The floriculture sector provides an interesting case because it shows the complex and often indirect impacts of the production of a luxury, non-food product (namely flowers), on local food security. Based on earlier research, the study was guided by the hypothesis that while flower production would increase competition for land and water resources, impact local food production, and may constrain subsistence crop production, employment creation as well as technology transfer could offer opportunities for local farmers to specialize

Table 1 Key background data on the flower companies that are part of this study

	Kenya	Tanzania	Uganda	Ethiopia	Total
Companies interviewed (#)	8	2	6	4	20
Employees interviewed (#)	42	11	14	21	88
Other key stakeholders interviewed (#)	29	1	15	16	61
Main activity*	Cut flowers Flower breeding	Cut flowers	Cut flowers Cuttings	Cut flowers Cuttings	
Total amount of land under company control (ha)	278	131	468	145	1022

Source: LANDac/F&BKP Country reports 2016

* This study included companies producing cut flowers (Cut flowers are flowers or flower buds that have been cut from the plant for use in bouquets or decorations. Typical cut flowers include roses, carnations, orchids, chrysanthemums, and lilies); cutting companies (This is a propagation technique in which a piece of the stem or root of the source plant is taken, from which a new plant grows); and flower breeders (where the traits of plants are changed through propagation in order to produce desired characteristics such as higher productivity, or improved quality; this can be done through many different techniques). The Netherlands is an important actor in the sector of plant propagation materials (JETRO 2011, Merriam-Webster 2015, Hollandtrade.com 2015).

in food production for the market or to engage in non-traditional cash cropping.

The research is also closely related to a new research programme titled 'Follow the Food: Dutch Agribusiness and Local Food Security in Ethiopia, Ghana and Kenya' (<http://www.nwo.nl/onderzoek-en-resultaten/onderzoeksprojecten/73/2300189073.html>) as well as a Special Issue "'Grabbing' Land for Solving the Global Food Problem: What are the Implications for 'Local' Food Security?" in the journal *Land* (http://www.mdpi.com/journal/land/special_issues/grabbingland_food).

1.2 Scope of the study

The report is organized into 7 chapters. The first chapter outlines floriculture investments worldwide as well as the role of the Netherlands within the context of the four countries. The rise and current size of floriculture is described, together with an explanation of the business model largely in use in the sector: the plantation model that will be explained in chapter 2. Detailed information about the countries under study can be found in the annex.

The report then focuses on the process of land acquisition within the flower industry. How have the

companies secured access to land and what previous uses did the land support before the farms were established? In the chapter that follows, attention is turned to the impacts of resource competition. The use of water within the floriculture sector is also a point of attention: how have flower producers secured access to water?

Chapter 5 looks at the local development contributions of the floriculture sector. As employment is often touted to be one of the most important contributions, the analyses will therefore focus on employment creation and quality of jobs on offer across the four countries. Linking back to the findings outlined in the previous chapters, chapter 6 unveils the local food security impacts of floriculture endeavours. The Kenyan example of smallholder flower farmers is presented as an example for doing things differently.

The last chapter presents the conclusions and recommendations. Recommendations are aimed at various stakeholder groups, including government, civil society, entrepreneurs, investors and academia. For academia and other knowledge actors in particular, the final chapter presents important knowledge questions and suggests areas where further research can contribute to a future knowledge agenda on issues of land and food security.



2 Characterization of floriculture investments

The floriculture sector has seen important shifts during the last few decades. First, the production of cut flowers has largely moved from the North to the South, with the Netherlands being the only high-income country among the top five flower producers. The share of flowers produced in Sub-Saharan Africa (SSA) has steadily increased since the early 2000s from 5 per cent of world production in 2001 to 13-17 per cent in 2012. Moreover, important shifts in flower production have occurred within SSA itself. While Kenya produced 75 per cent of the total number of flowers exported from SSA in 2001, the country's relative importance declined to only 48 per cent of the SSA total in 2012. This is largely the result of the rise of Ethiopia's share, which comprised 43 per cent in 2012 (Evers et al. 2014).

With the majority of farms fully or partly owned by non-nationals, floriculture in Eastern Africa is, in large part, a foreign-dominated sector. The predominant flower farmers in Kenya are European producers who outsource the cultivation of flowers to Kenya (Dutch Ministry of Economic Affairs 2012). Of foreign investors, the Dutch are important in Kenya, Tanzania, Uganda and Ethiopia. For example, half of the farms in Uganda are owned by Dutch companies.

The Netherlands has traditionally been the main destination for SSA flowers, with the Dutch auction houses playing an important role worldwide. However, a recent shift of purchasing power from wholesalers and the Dutch auction system towards mass-market retailers can be observed. Although the Dutch are still very dominant in the flower trade, with a share of 52 per cent of global cut flower exports, other markets are becoming more important, including the United Kingdom (UK), the United States (US), Japan, Russia and China (Dutch Ministry of Economic Affairs 2012; Rabobank 2015; ITC 2015; LANDac/F&BKP Country reports 2016). Table 1 shows the export of flowers to the Netherlands as a percentage of total flower exports of the four Eastern African countries.

2.1 Characterization of floriculture investments in Kenya, Tanzania, Uganda and Ethiopia

The Kenyan floriculture sector, which dates back to the 1980s, is the oldest among the four countries in this study. The sector employs 90,000 people directly, and more than 500,000 people indirectly. Moreover, the sector contributes 1.29 per cent of national Gross

Domestic Product (GDP) with a total of 597.72 million US dollars (Mwase 2015). This makes the floriculture sector the third highest export earner after tea and tourism (KFC 2015). Currently there are around 170 flower farms in the country (Riisgaard & Gibbon 2014). Kenya is the largest exporter of cut rose flowers to the European Union, with a market share of 38 per cent. The Dutch auctions alone take up a notable 65 per cent of Kenya's floriculture exports, and although other destinations are growing, such as Japan, Russia and the USA, the Dutch trade avenue remains primary (KFC 2015). The sector continues to attract investors especially due to Kenya's favourable geographical positioning and climate, quality infrastructure and productive workforce. The landholdings of the eight companies that took part in the study ranged from small (2 hectares) to large (83 hectares). The land sizes differed mainly as a result of floricultural activity, with the breeding companies in possession of the smallest landholdings.

Despite kicking off in the late 1980s, Tanzania's floriculture sector has experienced little growth; just over 5,000 people are employed (TPAWU 2011) on a total of only seven farms while indirect employment adds up to around 36,000 people (USAID 2006). The sector contributes up to 33.61 million US dollars to national GDP. Two companies were interviewed during the course of this research; they possess 10 hectares and 121 hectares respectively, with the former in the process of being taken over by a bigger flower company. A notable trend in Tanzania's floriculture sector has been the collapse of floriculture companies due to bankruptcy. The bigger and stable floriculture companies have taken over the crumbling ones, resulting in fewer – but at the same time – expanding individual companies. In addition to financial challenges, two other major challenges face Tanzania's floriculture sector: a lack of government support and inefficient air transport. In fact, many Tanzanian companies have to depend on Kenya's international airport near Nairobi (Mwase 2015).

Uganda's floriculture sector started in 1992 with three flower farms; this number grew to more than 20 farms in 2007. Currently there are 14 flower farms in the country (UFEA 2015). This initial growth and subsequent decline is also reflected in the country's share of the total flower exports from SSA which declined from 6 per cent in 2001 to 1 per cent in 2012; the absolute decline in that same period was down to US\$ 0.2m from US\$ 11m (Evers et al. 2014). The sector currently employs

around 8,500 people and supports an estimated 51,000 individuals (Nakweesi 2014). Its contribution to national GDP amounts to 17.87 million US dollar. The six companies included in the field study had landholdings ranging between 18 and 170 hectares. A notable trend in Uganda is that an increasing number of farms has started to focus more on cuttings as opposed to cut flowers. A preference for cuttings represented a switch in the sector following financial challenges of the cut flower business over the past years. Moreover, the climatic conditions in Uganda are more favourable for cuttings and so have facilitated the continued growth of the cuttings business. As a result, most Dutch floriculture entrepreneurs are active in cuttings.

Ethiopia's floriculture sector is the youngest in Eastern Africa. Despite its later start in 1997 it has grown tremendously. As of 2013, the country has more than 80 floriculture companies (Staelens et al. 2014). Ethiopia is now the second largest flower producer in Africa after Kenya, and the fifth non-EU producer of flowers to the EU market. The growth of the sector has propelled it to being the fourth biggest export industry in the country, while employing 85,000 people directly and 200,000 people indirectly. The sector contributes 212.56 million US dollar to Ethiopian GDP (EPHEA 2010; OEC 2015; Getu 2013). Key factors propelling the growth of Ethiopia's floriculture sector include favourable climatic conditions, cheap labour, and government incentives. The four companies that participated in this study possessed between 23 to 42 hectares, and mainly cultivated roses for export.

Many cases were found, especially in Tanzania and Uganda, of collapsed floriculture investments. Current investors reported, with regard to the profitability of the floriculture business, difficulties and strong competition. Producers of cut flowers in Uganda reported strong competition from Kenya, where better

climatic conditions produce bigger flowers (that are preferred by the market), and where there is better infrastructure in place. In Tanzania many floriculture companies were started up in a period of easy access to money, but those companies lacked a sustainable business plan and the owners often lacked knowledge and experience in flower production (TAHA). A general absence of government support was another constraining factor in Tanzania.

Table 2 provides an overview of the main characteristics of the floriculture sector in the four countries as presented in the paragraphs above.

2.2 Floriculture business models

In all four countries, the floriculture companies operated as independent agricultural businesses. The only example of smallholder flower farming was found in Kenya; the company was based on a contract farming model whereby smallholders produced flowers as out-growers. Although the remaining companies do not operate as plantations with thousands of monocropped hectares, the operations do exhibit key characteristics typical of plantations, as identified by Smalley (2013: 13):

- One main cash crop grown;
- Capital investment required;
- Larger than average-sized holdings although part of the land may be left uncultivated²;
- Reliance on hired resident or non-resident labour which often includes migrant labour;
- Central management.

² According to the Protocol to the Plantations Convention – ILO 1982, plantations are at least 5 ha; in practice, plantations are much larger (Smalley 2013: 7).

Table 2 Key background data on Eastern Africa's floriculture industry

	Kenya	Tanzania	Uganda	Ethiopia
Year started	1980	1987	1992	1997
Companies (#)	170	7	14	80
People directly employed (#)	90,000	5,000	8,500	85,000
People indirectly employed (#)	500,000	36,000	51,000	200,000
Contribution to export earnings (US\$, in millions)	597.72	33.61	17.87	212.56
Main exported product	Cut flowers	Cut flowers	Cuttings	Cut flowers
Percentage exported to The Netherlands	52	55	85	81

Source: USAID 2006; TPAWU 2011; Riisgaard & Gibbon 2014; Mwase 2015; KFC 2015; UFEA 2015

Given the above characteristics, the plantation model differs from other types of business models in terms of crops cultivated, institutional arrangements, means of production, and especially how land, labour and capital are combined, as well as the subsequent spatial and social implications (Smalley 2013: 8). When compared to other crops, such as oil palm, an essential feature of flower farms are the small plots of land in comparison to the 'usual' size of plantations (which are normally quite extensive). In fact, the Ethiopian Horticulture Producer Exporters Association states that while the floriculture sector in Ethiopia contributes 80 per cent of foreign revenue earnings, the sector only uses 11 per cent of the land that has been developed for horticulture (EHPEA 2015). However, in land governance debates it is

often stressed that this does not mean that smaller land investments deserve less attention. Many small land acquisitions can be just as important in terms of size and impact as one or two large-scale land acquisitions. Moreover, smaller land acquisitions often receive less attention than bigger ones, which can also lead to less attention for their impacts. As Liversage states, 'Much of the current research focuses on acquisitions greater than 1,000 hectares or even 5,000 hectares, thereby ignoring a large number of ongoing smaller ones' (IFAD 2010). The cut flower industry in Kenya is mentioned as an example of smaller land acquisitions that have impacted on pastoralists' land rights, a challenge confirmed in this scoping study (see LANDac/F&BKP Country reports 2016).



3 Processes of land acquisition

Floriculture investments require land and water. Therefore assessing the potential competition for these natural resources in countries that are food insecure is of great importance. The investors in Kenya that participated in this research have either leased or purchased land. Of the eight included companies, five had leased land and five had purchased land, whereby two companies combined leased and purchased land, the latter can be an indication of land acquisition from different landowners. According to the Kenyan Constitution promulgated in 2010, however, non-citizens (either individual or corporate) can only hold land under a leasehold tenure that does not exceed 99 years. Thus, land purchased by foreigners only confers to them 99-year leasehold interest (Kibugi & Makathimo 2012). In practice, 'land grabbing continues to occur, and there are concerns over the delay of the passing of the Community Land Bill in the context of ongoing land allocations to companies without legal protection and compensation to local residents' (LANDac Kenya country fact sheet 2015).

In Tanzania, the two Dutch floriculture investors in the study had both purchased land. The country's Land Act 1999 welcomes land allocation to foreigners when it is for investment purposes, which is given priority to any other forms of use. Unlike in Kenya where a body corporate has to have absolute shareholding by citizens to be deemed a legal citizen, in Tanzania the requirement is that the majority of shareholding is in the hands of citizens. Land disputes in rural areas of Tanzania reflect the competition for natural resources, promotion of commercial development and tenure insecurity (USAID 2011).

In Uganda, land acquisitions had taken place in the form of purchase or lease, with three of the companies

operating on fully purchased land, while the other three operated on fully leased land. Similarly to Kenya, non-citizens in Uganda can only hold leasehold tenure that does not exceed 99 years. However, a corporate body is deemed foreign in the event that the majority shares in case of companies are held by non-citizens, and in the absence of shareholding, the decisions have to be made by a majority of non-citizens. The government is increasingly eyeing public land for economic development purposes, and land conflicts are common (LANDac 2015 Uganda country fact sheet). Moreover, the Uganda Investment Authority mentions providing land to investors as part of their mandate and manages a land bank for that purpose. The land bank is comprised of land owned by Ugandan individuals who are willing to lease it out (Interview with the Uganda Investment Authority (UIA) 2015, LANDac/F&BKP Country reports 2016).

In Ethiopia, all four investors in the study had leased land either from a company or local communities. The investors that had leased from a company all have plans in place to lease land directly from the Ethiopian government once the current leases expire. It is important to note that land in Ethiopia belongs to the state and cannot be sold or used as a means of exchange (Ambaye 2012), which explains why there were no cases of purchased land in the country. Ethiopia is divided into nine regional states, and the lease terms are contingent on regional rural administration laws that are specific to each regional state. The government policy to increase medium and large-scale leasing of land has been a source of controversy and has led to local communities and farmers losing access to land or being displaced, which undermined their livelihood systems (LANDac Ethiopia country fact sheet 2015).

Table 3 Land acquisition and conversion related to the farms in this study

	Kenya	Tanzania	Uganda	Ethiopia
Land acquired (ha)	278 ha	131 ha	468 ha	145 ha
Land used (ha)	224 ha	–	323 ha	120 ha
Land used (% of total land in holding)	81%	–	69%	83%
Land leased	58.5	0	128	145
Land purchased	219.5	131	340	0
Source of land	Large-scale and small-scale farmers Entrepreneurs	Entrepreneurs	Smallholder farmers Entrepreneurs	Government Smallholder farmers Entrepreneurs

Source: LANDac/F&BKP Country reports 2016

The legal systems and practices on the ground which govern land in the Eastern African countries illustrates that land governance in the four countries differs in various aspects. In the next section the resultant impact of those various systems with regard to competition for natural resources (namely land and water) are addressed. Land was usually acquired through market forces or the state, with consultation of local

communities being rather limited or taking place on a voluntary basis. For example, in Ethiopia communities were forced to move and resettlement took place with little or no compensation. Table 3 outlines the modes of land acquisition in Kenya, Tanzania, Uganda and Ethiopia, the amount used relative to the total land acquired, and the source of land.



4 Competition for scarce natural resources

4.1 Land

This paragraph reviews if and how demand for land by floriculture investments competes for scarce resources in Eastern African countries. The conversion of land to floriculture from earlier practices illuminates how the cultivation of flowers competes with local food production. Table 4 provides an overview of the land use changes in relation to the studied companies.

As Table 3 showed, floriculture companies acquired land primarily through leasing and purchasing from local farmers and entrepreneurs as well as the government in the case of Ethiopia. It was found that a significant portion of the land acquired for floriculture was not yet cultivated. Many of the companies intended to use the land for future expansion. This can be seen as a sign of optimism about future growth of the floriculture industry in Eastern Africa. The following sections of this paragraph look into the impacts of the above land acquisitions on local settings, and especially on land use change.

In all countries except Tanzania, land under floriculture cultivation was previously used either for food production or as pastureland or forested land, all of which are of critical importance to local livelihoods. This underlines the significance of floriculture impacts on local food security and livelihoods as it indicates a necessity for the original land users to consider alternative livelihood opportunities. In Ethiopia the government had leased land to floriculture investors, and in so doing halted a government vegetable production project that served the domestic market. However, while food supply in the area has been curtailed, the floriculture companies have created employment opportunities for the local people

(LANDac/F&BKP Country reports 2016). An overview of previous land uses is given in Table 4.

Table 5 describes the land use impacts of flower farms; the land use categories have been adapted from Lavers (2011). As the typology shows, depending on the land use type prior to the investment, the establishment of flower farms has had differentiated impacts on land use change and livelihood impacts. As categories can overlap, land that is considered 'unused' land can in fact be in use as communal land. In fact, very little land is vacant or unused and many areas where outside investors settle are occupied or used by different groups for a variety of purposes such as grazing animals, gathering firewood and other contributors to local livelihoods and food security (Kaag and Zoomers 2014).

Floriculture investments and the accompanying land acquisitions have led to different changes in land use in Eastern Africa. Land use change is evident, but often complex, as it is magnified by previous or simultaneous developments and impacts on local food security. This was clearly exemplified in the Naivasha area in Kenya where the Maasai, a pastoral community, had been forced off present-day Hell's Gate Park for 'conservation' reasons by the government in the 1970s, which in retrospect indicates a case of 'green grabbing'. Upon settling outside of the designated park area, the Maasai continually faced difficulties in accessing water from Lake Naivasha to water animals following an increase in the number of private investments and especially as a result of the floriculture investments that closed down water access corridors to the lake. In Uganda, the establishment of a flower company left local community members furious, as they were adamant that the demand for land by the flower company had

Table 4 Typology of changing land use related to the studied companies

Previous land use (in ha)	Kenya	Tanzania	Uganda	Ethiopia	Total
Smallholder farming/food production	147	0	280	145	572
Pastureland and forests	45.5	0	0	0	45.5
Uncultivated land	85.5	0	0	0	85.5
Floriculture and other cash crops	0	131	123	0	254
Unknown use	0	0	65	0	65
Total	278	131	468	145	1022

Source: LANDac/F&BKP Country reports 2016

Table 5 Land use impacts of flower farms in Eastern Africa

Previous land use	Land use impacts when flower farms are established
'Unused' land	Threatens 'informal' land tenure holders, unregistered pastoralist livelihoods forced to resettle (Kenya); Squatters forced to resettle (Uganda)
Communal land	Loss of communal resources (mainly water sources) (Tanzania, Kenya, Uganda)
State farms	State employees to private employees (Ethiopia)
Individual holdings	Transformation of subsistence farmers and smallholders into wage labourers (all countries except Tanzania)

Sources: Adapted from Lavers 2011: 16; LANDac/F&BKP Country reports 2016

led to their displacement from the land on which they cultivated food crops. The displaced people had been squatting on the land, a common practice in Uganda, until the claimed owner forced them off the land prior to the entry of the flower company. In Ethiopia, local community members in Holetta and Debre Zeyt were critical of the government's approach that prioritized investors' resource needs; this approach eventually led to the mandatory relocation of the local people, at times without adequate or no compensation at all. By leasing arable land to investors close to roads and water sources, local community members felt the government was strengthening an already powerful entity in the form of foreign floriculture companies. This was done at the expense of the local people who had to relocate to less productive land, further away from tarmacked roads, the electrical grid, and water sources³ (LANDac/F&BKP Country reports 2016).

Research findings indicate that local community disenfranchisement from access to and use of local resources, took place following the entry of foreign floriculture investments. On the other hand, it is also an indication of conflict between government approaches to development and the welfare of the people that should benefit from such investments. In all of the areas where local communities had been disenfranchised from essential local resources, the mode of land governance was found to have played an important role. For example, in Ethiopia where land is under the custodian of the state, the government relocated local communities to create space for investments. In Kenya where formal land rights have been established, groups that had insecure land rights lost their land to public and private investments. In this light it is clear that land governance with regard to land access in Eastern Africa constitutes a big challenge, and the

³ The study also located a wheat cultivator that leased land to a floriculture company in Nanyuki, Kenya. The woman originally from the UK, leased her land to a floriculture company because she was simply getting too old to produce wheat. Leasing her land allowed her to earn a retirement income.

fact that a majority of the companies had medium to modestly large-scale should not be reason to downplay the impact of such acquisitions on local people's livelihoods. The cases in which floriculture is practised on land that was previously under food production, especially under smallholder farmers, raises questions about the consequences for food security in the Eastern African countries. Is it enough to consider only whether food production is replaced by a stable income that enables employees to buy enough food, and whether the distribution of benefits is equitable? An essential challenge still remains in that the local land governance systems do not adequately protect resource access and rights among local communities that are dependent on these resources. Moreover, land in many cases is more than just food production; it can be used a safety net, inheritance, collateral, and it can be rented out, while it also has social meaning and cultural value. Therefore, in this view land has not just economic importance, but also social and cultural significance.

4.2 Water

Floriculture investments are more water-intensive than land-intensive, especially relative to other types of plantation crops in sub-Saharan Africa. However, land acquisitions have attracted more attention than water use in resource acquisition debates, yet water is primary to rendering land arable (Woodhouse 2013). This is shown by the strategic placement of floriculture companies near key water sources. Floriculture companies in the study used between 1000m³ and 3000m³ per day, with water obtained from lakes, rivers, boreholes and rainwater harvesting as shown in Table 6.

The use of lakes and rivers has brought foreign investors into contact with local communities who access water from the same sources. In the Naivasha area in Kenya, the floriculture industry was among the key supporters of an initiative to promote sustainable agricultural practices among upstream smallholder farmers with the view of protecting the quantity and quality of Lake Naivasha's water. This was initiated

Table 6 Water access and use in the floriculture sector

	Kenya	Tanzania	Uganda	Ethiopia
<i>Sources of water</i>	- Lake Naivasha - Boreholes	- Mt. Meru water catchment basin - Boreholes - Rivers	- Springs and swamps - Lake Victoria - Boreholes - Rainwater - Rivers	- Lake Ziway - Boreholes - Rivers
<i>Daily average water used (m³)</i>	1120	1400	1833	1803
<i>Other water users</i>	- Pastoralists - Smallholder farmers - KenGen (geothermal power production) - Hospitality companies - Fishermen	- Local communities - Floriculture companies	- Local communities - Fishermen - Floriculture companies	- Flower companies - Smallholder farmers - Pastoralists
<i>Water regulation institutions</i>	- Water Resource Management Authority (WRMA) - National Environment Management Authority (NEMA) - Certification Standards	- Local government - Certification standards	- Certification standards - Government of Uganda	- No regulations

Source: LANDac/F&BKP Country reports 2016

following findings that poor agricultural practices by upstream farmers had led to high siltation levels of the lake and subsequent low water levels. In Tanzania, one floriculture company had to make agreements on water access with local community members to ensure both parties had access to water. In Uganda, however, local fishermen complained of being denied access to the lake by a floriculture investor who felt that by allowing fishermen to access the lake, pathways opened for theft of company facilities. As such, there have been mixed outcomes for local communities following entry of floriculture investments. These on one hand relate to either outright competition for water or limited access to water resources, and on the other efforts to harness water resources through effective collaboration between investors and local communities. Moreover, despite the fact that there are hardly limitations on the amount of water used, floriculture investors in Uganda and Ethiopia have employed water-saving techniques such as drip irrigation, hydroponics and automation systems.

These mixed outcomes underline the need for water resources regulation. With the exception of

Ethiopia, local institutions had been tasked with regulating the amounts of water extracted by the floriculture companies. However, as the Water Resource Management Authority (WRMA) in Kenya reported, regulating the amounts of water extracted by floriculture companies is a difficult task. As a result of the huge gap in technological advancement between local institutions and the floriculture companies, investors could easily violate the regulations that are meant to control water use. As such, despite the primacy of regulations on water access and use, an enormous challenge lies in enhancing the capacity of local institutions so that they can actually implement regulations that insure sustainable water use.

With the creation of employment, agricultural technology transfer, and the facilitation of market access for local agricultural producers being some of the chief justifications for granting foreign agricultural investments, the following section examines the contributions of the floriculture investments in their areas of operation.

5 Floriculture investments in Eastern Africa: Contributing to local development?

Employment creation constitutes the most significant contribution of floriculture investments to local development among populations in Eastern Africa. Floriculture is highly labour intensive. The total amount of jobs created in the floriculture sector across the four countries that are part of this study is estimated at 17.525 jobs. An additional 787.000 indirect jobs are linked to the sector in the sampled countries. The labour in the companies that are part of this study is predominantly low skilled and permanent. In fact, 82 per cent, 93 per cent and 99 per cent of created jobs in Kenya, Uganda and Ethiopia respectively are permanent. Moreover, mainly women are employed; the average percentage of female labour in the companies that were part of this study is 68 per cent. Breeding companies employed significantly less labour relative to flower growers and cutting companies, and as noted earlier, also used less land and water. Previous occupations of flower farm employees is diverse and included waged labour, casual labour, (mostly subsistence) farming, shop or business owner, student or dependent on parents.

In the four countries studied here, the quality of the employment generated in the flower sector is limited especially due to low wages that do not match living wages. A living wage is the minimum wage for a worker to meet their basic demands. In addition to relatively low wages, employees face a lack of employment security, which means that employees can easily lose their jobs. Table 7 contains key information on floriculture sector employment in Eastern Africa.

The wages shown above reflect the amounts received

by general employees, and therefore exclude the few higher paid positions such as those in the human resources (HR) department as well as production managers and supervisors. In Ethiopia, for instance, general employees earn around € 34.81 a month, while an HR manager earns € 847,92. While the wages were low, they were above the minimum wages set by the governments of the host countries. As such, companies indeed paid above the government minimum wage. It is however important to note that the minimum statutory wages were significantly below the living wage amount of the specific countries. An example of how minimum wages have been neglected by governments in Eastern Africa is Uganda, where the minimum wages were last revised in 1984 and set at 6,000 UGX (1.44 euros) per month. Workers' Union and various associations had stepped in to push for higher wages, and through collective bargaining agreements had managed to contribute towards better payment and working conditions for employees.

Most employees working in the floriculture sector are fully dependent on the wages earned at the flower companies. This dependency on wages was primarily a result of employee modes of livelihoods and the fact that most employees are migrants and so new to the areas where flower companies are located. Flower farms largely depend on workers from other localities because of higher unemployment rates and economic poverty in the areas of origin relative to the areas where the floriculture companies are located. Employment (in the case of general employees) in the floriculture companies is not highly ranked by local communities. Given that many people living in floriculture areas

Table 7 Employment data on participant farms compared to national levels of living wage and statutory minimum wage

	Kenya	Tanzania	Uganda	Ethiopia
Direct employment created	5,164	1,580	6,281	4,500
Permanent: Temporary ratio	82:18	–	93:7	99:1
Percentage of female labour	64%	60%	68%	79%
Average monthly wage	€ 119.73	€ 46.63	€ 38.42	€ 38.93
Living wage individual per month (min-max)	€ 132.44 – € 190.92	€ 102.76 – € 181.68	Not available	€ 143.30 – € 163.83
Statutory minimum wage per month (min-max)	€ 46.76 – € 212.59	€ 16.00 – 160.00	€ 1.45	€ 17.89 – € 270.67

Sources: LANDac/F&BKP Country reports 2016; WageIndicator Foundation 2015

Table 8 Services provided by the floriculture sector in this study

	Kenya	Tanzania	Uganda	Ethiopia
<i>Services provided at the workplace</i>	<ul style="list-style-type: none"> - Meals - Healthcare* - Transport - Housing allowances - Clean drinking water* 	<ul style="list-style-type: none"> - Meals* - Healthcare* - Transport - Clean drinking water* 	<ul style="list-style-type: none"> - Meals - Healthcare* - Transport - Crèche - Interest-free loans - Clean drinking water* 	<ul style="list-style-type: none"> - Meals - Healthcare* - Transport - Crèche - Clean drinking water*
<i>Services provided outside the workplace</i>	<ul style="list-style-type: none"> - Subsidized meals to primary schools - Clean drinking water - Garbage collection - Cattle dips - Primary schools 	<ul style="list-style-type: none"> - Academic scholarships - Construction of classrooms and toilets - Water access points - Hospitals 	<ul style="list-style-type: none"> - Road maintenance - Clean drinking water - Healthcare services (at a cost) 	<ul style="list-style-type: none"> - Primary and secondary schools - Meals to primary school children - Healthcare services - Sports facilities - Reforestation

Source: LANDac/F&BKP Country reports 2016

* Provision is mandatory by either government regulation or accreditation bodies

feel they have better opportunities to engage in more favourable income-generating activities, one outcome is that employment in the flower farms is mainly taken up by migrants. What follows is that opportunities emerge following the influx of migrant labourers, and these opportunities are taken up by the indigenous groups – especially business opportunities in areas including grocery shops, rental housing, and food production among others.

Because many employees migrate from other localities, and due in part to the absence of family land to farm, they had no alternative ways of securing basic needs and accessing food. Migrated workers therefore had to purchase nearly all goods and services in their new homes. In addition, employees reported to work early in the morning and left for home in the evening, thereby leaving little time to engage in extra income-generating activities. Working overtime offered the main opportunity for earning additional income. However, while the companies stated that working overtime was optional, employees noted that it was, in practice, often mandatory. The lack of freedom to choose when to work overtime was inconvenient for employees, and especially for women since they were tasked with core household duties of catering for children and other domestic activities such as cooking. Thus, the stereotypical view (i.e., low-skilled, young female workers who contribute to household income while partly relying on support from family members) is often not true; the majority of employees are migrants fully dependent on wages for their subsistence. In addition employees are under pressure from extended family members in their places of origin because they are now viewed as the ones having a reliable source of income. Hence there were displacement issues (related to the original population) as well as precarious livelihood conditions for the new work force.

In addition to wages, exposure to chemicals (primarily pesticides) among employees constituted an important complaint in the floriculture sector in all four countries, with one-third of interviewed employees mentioning this as a danger to their health. Critique came not only from employees, but also from those living near the floriculture companies. The exposure to chemicals was linked to poor health, with some employees indicating an increased frequency of health problems upon starting work in the floriculture sector. On one hand, these complaints were present despite the wide adoption of certification standards that notably focus on regulating the use of harmful chemicals. On the other hand, there were signs of environmental awareness as exemplified by the treatment of wastewater prior to disposal, the creation of wetlands, and the gradual adoption of integrated pest management (IPM) approaches. The main challenge facing adoption of these practices, however, is the slow regulation process of local institutions in allowing new, environmentally friendly interventions. Employees that had worked the longest in the floriculture industry stated that the working conditions have improved over the years, and that the introduction of certification standards had played a notable role.

Further, as reported by both floriculture companies and employees, companies provided additional services to employees in part due to certification standard requirements. While the services provided differed per company, the mandatory services were provided across the board: health care and clean drinking water in all four countries, and also meals in the case of Tanzania. These services were made mandatory by either the government or accreditation bodies.

In addition, a number of floriculture companies have engaged in community support programmes involving school construction and renovation, teacher



employment, clean drinking water provision, road maintenance, healthcare services provision, and meal provision (often subsidized) in primary schools. While these interventions have addressed the needs of the local populations, healthcare and meal provision had not managed to reach the target groups⁴ due to financial limitations of the companies and a lack of consultation on the exact needs of local communities. As such, to increase the positive contributions of foreign floriculture investments additional efforts are required to fully comprehend local needs. However, and following van Westen et al. (2013), it is important to consider the fact that interventions driven by community consultation might lead to a situation where local leaders and communities ask for all kinds of favours from foreign investors, (to build a school, a clinic etc.) which in turn might promote 'traditional' development projects with all of their problems over more in-depth, sustainable change (van Westen et al. 2013: 30). Table 8 outlines the services provided by

the floriculture companies to employees and nearby communities.

Further expected contributions from floriculture companies could be in the form of technology transfer to local communities. However, none of the companies in this study incorporated specific activities to stimulate technology transfer to local farmers, and thus such transfer was not observed in these cases. Three key barriers to the transfer of agricultural knowledge and technology were identified. First, the technologies on offer are not affordable for local smallholders. Second, most of the technologies are not suited to smallholder farming systems. Finally, local farmers indicated that floriculture companies operated as enclaves and therefore it was not possible to learn about their ways of practising agriculture. The technology gap between the flower farms and neighbouring smallholders makes technology transfer difficult.

4 Target groups comprise both employees and non-employees including households or populations that are meant to benefit from the 'corporate responsibility' acts of flower companies. While some company initiatives may be restricted to company premises, others (such as the ones mentioned in this paragraph) primarily target adjacent local communities.



6 Effects of floriculture investments on food security

This study was guided by the hypothesis that competition for land and water resources would impact local food production, and that while the local production of subsistence crops may be constrained, employment creation and technology transfer could offer opportunities for local farmers to engage in non-traditional cash cropping or to specialise in producing food for the market. This section aims to describe the various local food security impacts the floriculture sector has had on the range of stakeholders involved: previous land users, neighbouring communities and employees.

6.1 Previous land users

The most direct impact pertains to the transfer of lands from previous users to the flower farms, and this has had effects on food production and food access. A critical issue here is the way in which governments have consistently prioritized FDI over community rights. This has led to dissatisfied communities and pastoralists losing access to water resources. In several cases land had been taken from local users at an earlier stage and then subsequently assigned to the floriculture investors. As a result in such cases, investors did not encounter challenges in acquiring land but sometimes encountered challenges related to existing land claims or new encroachments on their farms.

In relative terms, floriculture companies require little land and offer highly productive horticulture with considerable employment opportunities. However, the study found that it is often not the previous land users who benefit from employment creation as the majority of employees are migrant workers. As was shown in chapter 5, this has led to more pressure being placed on land for subsistence agriculture and housing. In several cases previous land users did manage to take advantage of land use change and the influx of migrant workers by setting up small businesses or renting houses.

At the same time, land in floriculture areas is often highly fertile. Moreover, these areas are well connected in terms of infrastructure and usually more densely populated. As a result, these areas are also highly valued for local food production. As was shown above in the typology of observed land use change, most of the land accessed by flower farms used to be in use by smallholder farmers and for food production (572 ha out of the 1022 ha acquired).

6.2 Neighbouring communities

One important advantage of floriculture investments is their promise of job creation for local people. This study, however, found that flower farms have employed mainly non-local people who moved to the flower growing areas, mostly from regions and districts in other parts of the country. In Uganda, nine out of 14 employees moved from further than 100 kilometres away and up to a distance of 400 kilometres away. All interviewed employees in Uganda had relocated in order to start working at the flower farms. The same applies for the other countries; the majority of employees have relocated in order to work on the farms. As was shown in chapter 5 this can have, further implications for neighbouring communities related to food security as well as pressures on land. Therefore, in terms of employment and wages, local benefits are less than might be expected.

At the same time, this influx of people energizes local business, which can be a boost for the local economy and with that local food production. Floriculture companies purchase the food for their meal programmes from local markets; this has positive spill over effects for nearby food producing farmers. Examples include Tanzania where two companies indicated that they provide meals and purchase food from local markets. Increasing employee populations, who turn to local markets for foodstuffs, have also opened opportunities for local food producers. A limited number of employees complemented food bought at the local market with subsistence crops or with food that was given to them by family members, but the main means of accessing food was through local markets. In fact, smallholder food producers cited increased market demand for their produce as the main benefit deriving from the establishment of floriculture companies. The growth of local markets has also created opportunities for traders who deal in food, and who source their food products from nearby farmers. New businesses have also started up due to the increased demand for food near flower farms. Finally, in several cases local people started to rent housing to newcomers.

6.3 Employees

An important link between floriculture and food security occurs through the wages paid to employees as wages facilitate access to food from the local

markets. However, as this study found, flower farms have employed mainly non-locals who moved to the flower growing areas mostly from regions and districts in other parts of the country. Therefore, and other than it is often assumed, many workers are not part of locally established families that can enjoy additional sources of income (farming, income from other family members). As such, local benefits in terms of employment and wages are less than might be expected. The study showed that people from other parts of the country have reduced access to farm land and so cannot grow food. Moreover, part of their income must be spent on housing. At the same time, employees most often move with their families (with their husband or wife and/or children). In about half of the cases, spouses provide additional income, mostly through irregular and informal labour such as in the areas of small business, motorcycle or bicycle repair, or construction work. Only 14 of the 88 employees interviewed were both single and had no children to care for.

In the few cases where farming took place, it was often done as 'distant farming' on plots of land located in the area where the workers originated. In general, this meant that only crops that required relatively little attention could be grown. The occurrence of complementing ones food stuffs with agricultural production was partly influenced by the environmental setting. For example in Nanyuki, Kenya, complementary food production among flower farm employees appeared much more prevalent due to the fertility of the land and the consequent ease of producing food on a small piece of land. In contrast, land in the Naivasha area in Kenya is less productive and so requires more inputs.

As a last resort some employees depend on relatives in the countryside to obtain food during shortages and high food prices. In Ziway in Ethiopia, floriculture was established on land that was previously used for vegetable production by the Ethiopian government. According to members of the local community, food supplies in the local markets have been reduced since the halt in vegetable production, and this in turn resulted in higher food prices as food had to come from other localities further away. The challenge of food access was least severe in Uganda, where the majority of the employees indicated having access to adequate food throughout the year.

The dependency on local markets exposed employees to the volatility of food prices, with high prices being attributed to low food supplies in the market during the dry seasons. It was during the dry seasons that employees experienced most difficulties in accessing food, and a common strategy was to get foodstuffs on credit and repay at the end of the month after receiving

wages. In addition, the rural areas, where food for local markets is sourced, are served with poor infrastructure. This is a factor that leads to high transport costs and ultimately higher food prices in local markets. This reverses the benefits that could be reaped in the wet seasons when farmers with bumper harvests find it challenging to reach local markets.

Employment in the floriculture sector also had consequences for the types of food consumed as well as for the safety of the water consumed. Work in the floriculture sector is physically demanding, and because of that employees strategically consumed carbohydrate-rich foods. Additionally, in response to the negative health effects of workers handling spraying chemicals, some employees indicated that they consumed 'healthy' foods such as milk and fruits as a way of insuring their health. Besides work, the perceived need to vary the diet and availability of money greatly determined the types of food consumed in a household. At the workplace, various companies had established meal programmes and all companies provided clean water for drinking. Although some companies extended the supply of potable water to the families of their employees, and by establishing water points in nearby communities, the benefits of the meals and water provision was largely limited to employees only.

Another indirect link between the establishment of the flower farms and local food security was found in the gender dimension. Companies indicate that they have a preference for employing women over men; as shown in chapter 5, the average percentage of women employed was 68 per cent. This has led to an increase in the number of women earning an income, which has important implications for food security as women typically spend more money on household food consumption, health and children's nutrition (FAO 2011). At the same time, this study found that flower farm employment restricted the amount of time women have to prepare meals, leading to a drop in the supply of meals that take significant time to prepare. So also in the case of gender dimension, differentiated impacts were detected.

6.4 An alternative business model: Smallholder floriculture in Kenya

The flower companies described in this study operate under a plantation business model (see chapter 2). The main feature of a plantation model in terms of food security is that it makes employees largely dependent on wages to buy food. Especially in the case of migrant workers, subsistence cultivation is often an option to a very limited extent. An alternative business model

Table 9 Key information on smallholder floriculture farmers within the out-grower scheme in Kenya

N=8	Acreage land in possession*	Area of acreage under floriculture	Monthly income per farmer	Mode of land ownership by farmer
<i>Sample average</i>	1.78	0.24	€ 206.5	Inheritance Rental

Source: LANDac/F&BKP Country reports 2016

* One hectare equals 2.47 acres.

was found in Kenya where more than 3,000 local smallholder farmers practised floriculture on small, inherited plots of land. For this study, eight farmers producing flowers for the company were interviewed. The field study further involved a focus group discussion with seven other smallholder floriculture farmers from the same locality. Table 9 summarizes the data from both interviews and the focus group discussion.

All smallholder farmers cultivated flowers on inherited land and two farmers had rented additional plots of land. The smallholders produced flowers for a Kenyan-owned agri-business company located near Thika who exports the flowers overseas. As found in the study, floriculture here has improved livelihoods among the participating farmers mainly due to the incomes generated and improved farming skills that have impelled optimal returns from the small plots of land. Compared to an average monthly Kenyan wage of € 109,01 in the case of general workers at flower farms in Kenya, the average monthly income through the out-grower scheme is € 206,50. It is also above the Kenyan living wage, which has been set between € 130,90 and € 188,70. This shows that farmers profit much more from growing their own flowers and selling them to a company, as opposed to working as waged labourers (at least in the case of general employees).

It is important to note that the food security of the smallholder flower farmers in this alternative model has

been reinforced not just due to the financial gains, but also because the farmers practised food production alongside flower production as flowers require only a small portion of their plots. Farmers working in this scheme indicated that their domestic food production has increased since starting to grow flowers. The money to be made in the flower sector stimulated them to be more serious about the business of farming, with positive spill over effects to their food production.

The practice of out-grower floriculture by smallholder farmers shows that floriculture can indeed be profitable at a small-scale level. However, it is also noteworthy that the farmers cultivated summer flowers since they could be grown in the open, as opposed to growing flowers under green houses as done by the medium-scale and medium-large-scale investors. Growing summer flowers requires less initial capital investment because greenhouses do not have to be built. Nonetheless, the Kenyan owner of the out-grower scheme underlined that the most challenging task faced by the company in establishing the system was logistics, which took many years to set up. Importantly, this business model challenges existing claims that it is impossible to engage local smallholder farmers in floriculture. The model therefore serves as food for thought with regard to the involvement of smallholder farmers in floriculture.



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7 Conclusions and recommendations: input for a future knowledge agenda

This scoping study addresses and reveals critical issues regarding linkages between floriculture, land governance and local food security in Eastern Africa. The main conclusions and recommendations for ways forward in research and practice obtained from the four country studies and synthesis report will be presented here.

The following research question was addressed:

In the context of land governance in Eastern Africa, what are the impacts of Dutch floriculture investments on local food security and how can positive contributions be enhanced?

The primary contribution of Dutch floriculture investors in Eastern Africa is through local employment, especially among women who comprise the majority of the workforce. In Kenya and Ethiopia, the sector contributes more significantly in this regard as a result of the larger number of flower farms in these two countries. In Uganda and Tanzania, the floriculture sectors are smaller and therefore have less impact. The employee link is also the most important impact the floriculture sector has in terms of food security. Through waged employment, employees gain access to food through their financial resources.

In all four countries, the vast majority of employees came from different parts of the country, thereby leading to broader impacts beyond the physical locations of the companies. An important consequence for local food security is the fact that land, previously used for the production of food, has been placed under flower cultivation. Moreover, flower farm employees, the majority of whom are migrants, cannot secure part of their food needs through subsistence agriculture. Being far away from their places of origin, and lacking the resources to access land in their new settings, possibilities to practise agriculture are diminished. At the same time, work at the flower farm limits the available time to practice agriculture besides work. With many flower farms owning more land than they use, possibilities could be explored for providing land to employees for on-site food production. While there are examples of Dutch investors piloting this option, the companies report issues of encroachment and illegal sub-tenancy. As such, further investigation on how to design such interventions is required. A successful example of this can be found in Naivasha, Kenya, where

a non-Dutch investor has accomplished this.

On one hand, floriculture investments in Eastern Africa have weakened the means of food production in the region. Cases in point are the displacement of local communities in Ethiopia by the government, the lack of protection of squatters in Uganda, as well as the limited access to Lake Naivasha waters among the Maasai pastoralists. With less means to practice subsistence agriculture, the affected groups are forced to depend on local food markets to a great extent, an effect that ultimately leaves them less food secure. On the other hand, floriculture investors have engaged in natural resource conservation when the water resources on which they depend have been under threat. Again, the case of Naivasha where a Payment for Environmental Services (PES) scheme involving upstream farmers stands as an example. Given these two experiences, it is a paradox that the acquisition of natural resources by floriculture investors is straightforward, fairly easy and inexpensive in Eastern Africa. The investors included in this research did not experience challenges in accessing and utilizing natural resources. In fact, as was shown, many of the investments have additional unused land for potential future expansion. The ease of access of the resources and the ramifications among local communities juxtapose the critical conflict between state-led development approaches and the compromised positioning of local communities. These occurrences underline the need for a critical reassessment with a focus on participatory approaches that ensure all major stakeholders are equally involved; this is especially important for those that have so far been given little consideration. This will require a strengthening of local communities to ensure that their land rights are not violated by public and private entities as has been evident in Eastern Africa. Close collaboration with local civil society organizations can provide a useful strategy to kick-start this strengthening of local communities as well as their relations with government and investors.

Even when land and water resources were not taken directly from local communities, in several cases land had been taken from local users at an earlier stage then subsequently assigned to floriculture investors. As a result in such cases, investors did not encounter challenges acquiring land. A recommendation still would be to engage with the local community prior to the acquisition or lease. As the example of Ethiopia

shows, even when government provides access to land for foreign investors, this does not mean that there were no local groups using the land. A direct engagement strategy would benefit from a proper free, prior and informed consent (FPIC) process that involves existing land rights holders, compensation for lost lands and access to other resources, and good neighbourly relations. This will also prevent possible land conflicts in the future. A recommendation linked to these findings is that flower farms might consider prioritizing the employment of people from the region as well as take into account that people who migrate to work at the farms might be putting more pressure on the surrounding communities in terms of food availability, rising food prices, access to land and water resources, but also finding space for housing. Interacting directly with communities, community representatives or civil society organizations might be an option to see how such pressures can be soothed.

Furthermore this study has shown that while the working conditions in the flower firms have improved over the years there are still key issues that need to be addressed. The level of wages has been a key issue in discussions around flower farms; the current study clearly lays out its direct implications for local food security. As a result, the need to improve employee wages is of high importance. While currently above the minimum legal wage, floriculture pay is below a living wage in all four countries and is therefore insufficient to support a decent livelihood. The respective governments have a primary role here as they are responsible for setting minimum wages – at a level on which workers' and employers' representatives have agreed – through law-based mechanisms; they are also responsible for ensuring the proper implementation of minimum wage policies (Benassi 2011). At the same time, and also noted by Anker and Anker (2014), given the profitability pressure reported by the investors and as evidenced by the many failed floriculture investments in Tanzania and Uganda, a structured approach that targets the end of the value chain is also needed. As flowers are an inedible luxury product, the consumers ought to be sensitized on the quality of life of those engaged in the production processes down the value chain. This can occupy part of a fair remuneration process on behalf of the low paid employees in the floriculture sector.

For employees and their families, the lack of adequate income leads to constrained access to food on local markets. The inability to access adequate food is further aggravated by the rise in food prices during the dry season. In addition, the rural areas, where food for local markets is sourced, are served with poor infrastructure. This is a factor that leads to high transport costs and ultimately higher food prices in local markets, and a

reversal of the benefits that could be reaped in the wet season when bumper harvests are yielded. It is therefore imperative to enhance water access during the dry season among smallholder farmers if possible, and to improve infrastructure to better link local markets and rural areas where food production takes place. There is a role for national governments in this, who sometimes have prioritized the building of roads for companies over the construction of roads in more rural areas that do not produce for the international markets. At the same time, this situation might offer opportunities for social entrepreneurs active in the field of irrigation to offer affordable and accessible systems and solutions for small-scale users. As these rural investments offer labour opportunities and so attract groups of people, there is also a tendency towards urbanization. Further research is required on how to optimize rural-urban linkages in food supply and demand.

Technological transfer from floriculture investors to local smallholder farmers in Eastern Africa has hardly taken place. One of the major barriers to technology transfer is the fact that most companies operate as enclaves without much contact and exchange with nearby local communities. At the same time, the rise of the floriculture sector, especially in Kenya and Ethiopia where the sector is larger than in Uganda and Tanzania, has all in all led to an increase of good quality services and products related to the flower sector. Through their increased availability and economies of scale, production costs have gone down which has stimulated non-Dutch investors, including nationals, to invest in the sector. Although the study found no transfer of knowledge and technology towards smallholder farmers, this development will have an example function for larger-scale businesses in the country.

To complicate matters further, the technologies, and so the knowledge, used by the companies do not match the needs of local farmers; in general they are too expensive and only applicable to medium- and large-scale floriculture farming. However, the case of Naivasha, where local farmers were trained on sustainable agricultural practices, shows that floriculture companies can indeed, under certain circumstances, transfer knowledge and contribute to local agricultural development with well-thought-out mechanisms in place. The smallholder out-grower scheme showcased earlier in this report also serves as evidence that floriculture can indeed be modified and so practised at smaller scales by local smallholder farmers. Moreover, it also shows that such avenues not only generate financial gains for farmers, they also strengthen smallholder food security. As such, further research on this business model (as an alternative to the conventional plantation business model) is

recommended. Additionally, future research should also explore opportunities to combine for example the mainstream plantation model with smallholder cultivation. A hybrid plantation-smallholder model can provide a guaranteed supply of flowers. It can also accommodate breeding activities. National governments and subsidy and loan schemes may consider policies that stimulate larger scale businesses to also work with smallholder farmers.

As part of the options that need to be explored, a potential partnership can be forged between floriculture companies and local smallholder farmers. By having farmers cultivate food crops for companies' meal programmes, a host of two-way benefits can arise. For example, agricultural knowledge can be shared between the companies and local farmers as part of the agreement. The water-saving irrigation techniques employed by Dutch floriculture companies could be part of such a pact. In addition to encouraging the sustainable use of water, this knowledge transfer would also increase contact between the Dutch flower farms and local farmers and so decrease the 'enclivity' depicted among floriculture companies. Further, local farmers would have a ready and reliable market for their agricultural products, while companies could reduce CO₂ emissions while avoiding significant transportation costs. Also important is that such linkages would provide strong incentives for local governments to invest in improving infrastructure as part of creating conducive business environments for both local farmers and foreign investors.

As the research shows, linkages between floriculture investments, land governance arrangements and local food security are diverse, highly dependent on local circumstances and often indirect. This calls for attention in policies that stimulate Dutch investments in developing countries through subsidies or loans in the context of the 'Aid and trade agenda'. An example is the Dutch Good Growth Fund (DGGF) that, among other things, finances Dutch entrepreneurs to engage in business in developing countries. The DGGF focuses on local impact via three main criteria: 1) Employment creation; 2) Technology and knowledge transfer; 3) Production increase

(RVO 2015). The current study shows that development impacts, and in particular impacts on local food security, are very difficult to appraise using these simple, one-dimensional criteria. For example, taking employment creation as an example, this study shows that the quality of jobs created is of huge importance and ultimately determines local benefits. Focusing on employment creation alone thus is not enough. Also, the use of high-end technology does not guarantee that local communities can profit from a transfer of technology and knowledge and the current study shows that this transfer at the local level is largely absent in the case of floriculture. It is therefore recommended that such criteria focus more explicitly on local food security impacts and also take a cautious approach in those cases where land and water resources are being appropriated from local communities.

A spin-off of the floriculture investment has in some cases shown to increase collaboration between different actors in the field. An example is the collaboration between flower farmers and upstream communities in Kenya in order to improve the water quality in Lake Naivasha. Another example is the fact that unions have managed to bring together organized groups of employees and companies and have managed, through bargaining, to increase salaries and create better working conditions. The Netherlands – with its history in collective action, labour unions and multi-stakeholder approaches ('polderen') – could step up support in such collaboration and consultation between different groups in countries with a stronghold of Dutch entrepreneurs.

This study has highlighted some of the complex and multi-level impacts Dutch private investments can have on local food security in developing countries. The issue of access to and use of land is essential in all of these linkages, as the findings show. It is trusted that the information contained in this report on the issues surrounding floriculture investments, land governance and local food security can serve as a step towards the development of a new knowledge agenda, as well as further inform Dutch policy makers and businesses to optimise their contributions to local development and local food security.



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Annex

Country reports

**Scoping study on Dutch flower farms, land governance
and local food security in Eastern Africa**

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Kenya

National context

Kenya, with its area of 582,646 km², lies in East Africa and borders five countries: Uganda sits to the west, Tanzania to the south, South Sudan to the northwest, Ethiopia to the north, and Somalia to the east. Kenya's coastline serves as the main gateway to Eastern Africa through the Mombasa port, and in the near future through the Lamu port that will serve South Sudan and Ethiopia. Located along the equator, temperatures vary only slightly during the year. The country experiences a bimodal type of rainfall; long rains are experienced between March and May, while short rains are received in October and November (McSweeney et al. 2010). A significant proportion of the country's land is either arid (39 per cent) or semi-arid (41 per cent), and is mainly under wildlife management and pastoralism. Only 13 per cent of Kenya's land is highly suitable for rainfed agriculture. However, multiple lakes around the country, coupled with favourable climatic conditions, make for a suitable location for agricultural activities (Voorpijl 2011).

The country has over 40 distinct ethnic groups, and Kiswahili and English are the national languages. The country's population stands at 44.35 million people as of 2013, with an annual growth rate of 2.7 per cent, and a life expectancy of 62 years. A notable 42.4 per cent of the population is between 0-14 years, and the age group 15-24 years constitutes 18.8 per cent, while 32.4 per cent is between 25-54 years. Kenya is ranked a lower-middle income country with a 2012 GDP of 40.70 billion US dollars (World Bank 2014). The agriculture sector contributed 20.7 per cent to the GDP, while the service and industrial sectors accounted for 63.4 per cent and 15.9 per cent respectively. Despite a relatively lower contribution to the GDP, the agriculture sector was responsible for 60 per cent of total employment, and 18 per cent of all formal employment (KIPPR 2013). The value of imports outstrips that of exports, leaving Kenya with a negative balance of trade that has deteriorated over the last decade. The current status of the balance of trade corroborates Kenya's push for value addition through processing and packaging industries as well as attracting export-oriented Foreign Direct Investment (FDI), of which floriculture investments are part.

An important cog in boosting local demand at all levels is local employment, an aspect that Kenya has struggled to address as evinced by the 40 per cent unemployment rate. Among the employed, the majority work in the informal sector whose employment share rose from



70 per cent in 2000 to 83 per cent in 2012. The sheer dominance of the informal sector presents critical challenges for the country because key features of the sector include low productivity, low wages, low education, and unpaid family labour. A look into the education background of the labour force in Kenya, for instance, indicates that 10 per cent of the population has never attended school, while 65 per cent of the population has either completed primary school or obtained partial secondary education (KIPPR 2013). In line with this educational challenge, it is unsurprising that the Kenyan government has directed high expenditures towards the education sector.

A former British colony, Kenya attained independence in 1963; since then, four presidents have held office. However, it was only in 1991 that a multi-party system came into place with the first elections being held in 1992 (Patel 2001). This seemingly democratic progress has come at a cost; many general elections have been marred by ethnic violence, especially those held in 1992, 1997 and 2007. The floriculture sector, which draws labour from different parts of the country, was critically affected by the post-election violence in 2007 as evidenced by the reduction in flower exports by 24 per cent (Ksoll et al. 2010). Since the mayhem of 2007, the country has made major political strides especially with the promulgation of the New Constitution in August 2010. The Constitution paved the way for a devolved government; county governments have spearheaded the devolution process including the power to raise taxes within the county bar the property and entertainment taxes (AfDB 2014). Despite the

seemingly notable progress towards improving institutional efficiency and effectiveness, Kenya is still grappling with high levels of corruption; the country was ranked 136th out of 177 countries on Transparency International's Corruption Perception Index in 2013. Further, insecurity in the country has been on the rise in the recent years, and among the cited key contributing factors are economic hardships and dearth of employment opportunities (AfDB, 2014).

The floriculture sector in Kenya

The floriculture sector contributes around 1.29 per cent of national GDP, and employs approximately 90,000 people directly and a further 500,000 people indirectly through backward and forward linkages involving services such as banking, packaging, transport, and farm inputs. Kenya is the largest exporter of cut rose flowers to the European Union, with a market share of 38 per cent. The Dutch auctions take up a notable 65 per cent of Kenya's floriculture exports, and although other destinations are growing, such as Japan, Russia and the USA, the Dutch trade avenue remains primary (KFC 2015). The sector is thus a major earner of foreign exchange for Kenya, and has experienced steady growth over the years both in volume and value.

The sector continues to attract investors especially as a result of Kenya's favourable geographical positioning and climate, quality infrastructure and a productive workforce. Flower farmers, a majority of whom are foreigners, operate at large, medium and small-scales; these farmers employ high-level technology that ensures the delivery of quality products as well as the responsible use of natural resources (KFC 2015). The main flower producing regions in Kenya include: the Lake Naivasha area, which accounts for 70 per cent of

Table 3 Investment characteristics

Company	Ownership	Location	Year established in Kenya
1	Dutch	Naivasha	-
2	Dutch	Naivasha	2003
3	Dutch	Nanyuki	2006
4	Kenyan	Nanyuki*	1995
5	Austrian	Naivasha	2000
6	Austrian	Naivasha	1999
7	Dutch**	Naivasha	1986
8	Dutch**	Naivasha	2007

* This company operates in three different locations, namely Nanyuki (18), Naivasha (20), and Nakuru (15)

** This is a breeding company.

Kenya's floriculture production; Mt. Kenya; Thika; and Nairobi among others (KFC 2015).

In this study, eight floriculture companies in Kenya were interviewed. The characteristics of these companies are outlined below in Table 4.

All of the Dutch companies in this study were subsidiaries of multinational companies, and were mainly located in Naivasha. While the Kenyan floriculture industry emerged in the 1980s, almost all of the companies taking part in the study were established in the country in 1990s and early- to mid-2000s. The breeding companies chose to establish operations in Kenya due to the magnitude of a floriculture sector which boasts over 2,600 hectares of rose production countrywide as well as good prospects for growth; in other words, there is a viable market for breeders. The inclusion of non-Dutch flower companies facilitates a comparative analysis that informs on what is unequivocally Dutch in the sector, and what would essentially be attributable to the Kenyan floriculture sector.

Production is the main activity undertaken by the floriculture companies in Kenya, underlining the significance of low production costs. While some companies choose to focus on a single crop, others diversify to spread risks and to maximize returns based on market dynamics. All farms indicated that there were no plans to switch to a different crop in the future. For one of the rose growers, cultivating a different crop would only occur in the event that the market for roses waned completely, upon which he would cultivate vegetables for the local Kenyan market. As he further informed, vegetables could offer a viable business idea due to current land acquisitions by foreigners, which could see the country struggle to produce adequate food for its population should the trend of land acquisitions persist.

The allure of Kenya for floriculture investors rests on the country's favourable climatic conditions, availability and ease of access to land and water, and cheap labour. As observed, floriculture operations are expanding into other areas, particularly in the highlands such as Nanyuki in Mt. Kenya region. As the investors informed, roses cultivated in higher altitudes have bigger heads and longer stems; two qualities that are of great appeal to consumers. The highest operation costs for floriculture companies are airfreight, which accounts for around half of the total expenditures, with labour and farm inputs coming second and third. Besides land, water and labour, the rest of the inputs are mainly imported from Europe, Middle East and Asia either directly or via local suppliers. A challenge facing producers is that production costs are rising faster than

the market price for flowers, and the local market does not offer a viable option. In the following section, the dynamics of natural resource use within the floriculture sector are looked into to inform on the impacts of the sector on local food security.

Competition for scarce resources

Land governance in Kenya

Foreign floriculture agribusiness investments are said to compete for scarce land and water resources that are essential for local food production in often food-insecure countries. This section unpacks essential details on land governance in Kenya, and its relevance to foreign investments.

The Kenyan Constitution, promulgated in 2010, outlines three classifications of land ownership: public, private, and community. Public land includes land under state organs or public agencies such as government forests, national parks, wetlands, water and mineral resources, exclusive economic zones, and any land that is not categorized as private or community land. Public land also includes land vested in, and held by a county government in trust for the county residents. All public land is managed by the National Land Commission (Kibugi & Makathimo 2012).

A second form of land is community land. A community is identified on the basis of ethnicity, culture, or similar foundations of interest. Community land comprises land that is 'lawfully registered in the name of group representatives under the provisions of any law; land lawfully transferred to a specific community by any

process of law; and any other land declared to be community land by an Act of Parliament' (Kibugi & Makathimo, 2012: 8-9). In addition, community land includes 'land lawfully held, managed, or used by specific communities as community forests, grazing areas or shrines; ancestral lands traditionally occupied by hunter-gatherer communities; or lawfully held as trust land by the county governments' (ibid: 9). In the event that community land is not registered, the county government holds the land in trust for the communities. Community land cannot be disposed of or utilized in a different manner unless the terms of legislation are followed that outline the nature and extent of the rights of individual community members or the community as a collective (Kibugi & Makathimo 2012).

A third form of land outlined in the Constitution is private land, which can be held under freehold or leasehold tenure. This type of tenure represents the largest bundle of land rights in terms of use and disposition. As with community land, private land can be converted to public land in accordance with the rules for compulsory acquisition, for which the National Land Commission can grant leases for investment, including foreign investment (Kibugi & Makathimo, 2012).

Within Kenya's land governance framework, an important aspect emerges: the manner in which foreign businesses can gain access to land via investment. An investor corporation is deemed foreign on the condition of 'foreign control'. The Constitution of Kenya (2010) Article 65(3a) states that, 'a body corporate shall be regarded as a citizen only if the body corporate is wholly owned by one or more citizens'. The Constitution

Table 2 Data on natural resource acquisition and conversion

Company	Land owned (ha)	Land cultivated (ha)	Mode of acquisition	Water source	Crops cultivated	Previous land use
1	21	14	Leased for 99 years from 2 Kenyans	Lake Naivasha	Roses	Vegetables
2	83	43	Purchased after leasing for 6 years from another flower company	Borehole	Roses	Unused
3	40.5	40.5	21 ha under lease; remainder purchased from individuals	Borehole	Roses	Wheat farming
4	53*	53	Purchased from a local individual	Borehole	Roses	Vegetables and French beans by a foreign company
5	45	42	12 ha under lease; remainder purchased	Lake Naivasha	Roses	Pastureland and vegetables
6	31	21 ha: flowers 10 ha: vegetables	Purchased from a local individual	Lake Naivasha	Roses and vegetables	Forest and vegetables
7	2.5	–	Leased from a flower company (expires in 2025)	Lake Naivasha	Flowers	Unused (virgin land)
8	2	0.6	Lease renewed every 5 years	Borehole	Flowers	Pastureland

* Three different locations: Nanyuki (18), Naivasha (20), and Nakuru (15)

also states that non-citizens cannot hold land in freehold; only leases not exceeding 99 years can be obtained. In fact, following the promulgation of the Constitution in 2010, all non-citizen freehold claims to land and leaseholds exceeding 99 years were converted to 99-year leases (Kibugi & Makathimo 2012).

Acquisition and conversion of natural resources

In this section, we scrutinize the manner in which Dutch floriculture investors acquired land and water resources by taking into account the governance of these resources in Kenya. Further, we look at the previous uses of land currently dedicated to floriculture to investigate whether local food production has been impacted by the entry of the floriculture investments Table 2 contains information on the acquisition and conversion of land and water resources.

Drawing from the table above, landholdings among floriculture companies range from small- to large-scale. Small-scale land holdings relate to breeding companies. In various cases, part of the land remains uncultivated to allow for expanded operations in the future. In all cases, investors did not encounter challenges in the land acquisition process. Nonetheless, investors reported that they were cautious; for example, one company did not commit to a long-term lease until legal land ownership had been confirmed.

Land use and resource data indicate that there was a significant conversion from food and livestock production to floriculture; companies accessed water from boreholes and a lake. While some companies indicated that the land could no longer be used to produce food due to for instance, the old age of an owner in one case, in other scenarios it was unclear whether food production could have persisted in the absence of floriculture. Such unclear cases entailed land that was previously used as pastureland by pastoral groups, but who did not have legal claims over the land. The floriculture companies in this case had, through an uninhibited process, gained access to land from the legal owners and thus led to the displacement of the pastoralists.

Despite land having been previously used as pastureland, there was no case whereby land had been acquired from pastoral communities. This is because the particular land was under the legal ownership of individuals (originally white settlers), but since it was uncultivated, pastoral groups used it as pastureland. According to an interview with a Maasai elder who had experienced the change in land use over the years, the Maasai community currently living adjacent to the floriculture industry in Naivasha was evicted from present-day Hell's Gate National Park by the Kenya Wildlife Service (KWS) in 1985. The land on which the

Maasai resettled, located near Kwa Muhia originally belonged to white settlers and upon their departure, local elites claimed ownership to the land. Once the floriculture investments were established, the pastoral groups lost access to the pastureland as they were required to make way for the floriculture farms. As population and livestock numbers are continually on the rise, the informant feared that the future of pastoral livelihoods may be threatened. Pastoralists may soon be forced into leading sedentary lives as a result of to the lack of space and increased demand for agricultural land. The high demand for agriculture and conservation land therefore may undermine the food security of marginalized groups who must produce food under insecure tenure.

The floriculture industry is extremely water-intensive, and Lake Naivasha provides water for the established floriculture hub in the area. In addition to floriculture, other key downstream water users include KenGen, a local geothermal power company, the hotel industry, pastoralists, smallholder farmers, and fishermen. Of these, activities related to floriculture and power generation consume the most water. The wellbeing of Lake Naivasha draws significant global attention, especially following its recognition in 1995 as a global Ramsar site (UNESCO 2015). Regarded as the largest users of the lake water, the floriculture industry has always received most of the blame for polluting the lake as well as the decline in lake water levels. These concerns prompted numerous researchers to investigate the lake and its ecosystem. In one of the studies it was established that upstream smallholder farming communities bore the heaviest responsibility for the high siltation levels that ultimately resulted in low water levels and subsequent loss of water via evaporation (Everard et al. 2002). With the support of the floriculture sector around Lake Naivasha, among others, a payment for environmental services (PES) scheme was implemented with the main aim of training upstream smallholder farmers on sustainable agricultural practices. According to World Wildlife Fund (WWF) in Naivasha, the PES scheme has seen smallholder farmers reap benefits from agricultural activities such as dairy farming and horticultural production. The improved farming practices have curtailed soil erosion among upstream farming communities, and in turn have alleviated siltation from rivers feeding the lake. This outcome of a win-win scenario for both upstream and downstream communities exemplifies how environmental conservation can propel economic and social development.

Despite achieving significant success, the PES scheme has failed to adequately benefit pastoral communities in the Naivasha area. Watering points for livestock

have become limited after key corridors to the lake were closed by private land owners, among them the floriculture companies. Moreover, conservation efforts to protect the riparian land around the lake have also had an impact on pastoral communities. As learned from the Maasai elder, the number of livestock watering points has reduced from 16 to only 5; this has occurred against the backdrop of increased population and livestock numbers among pastoralists in the area. In response to restricted lake access, some pastoral groups have dug boreholes to address their water needs, but these have led to intra-communal feuds as some groups have been denied access to the boreholes. Moreover, the poor quality of ground water in the Naivasha area raises critical questions about the suitability of borehole water for domestic use.

In the highlands of Mt. Kenya, the main sources of water for floriculture and vegetable companies comprise harvested rainwater, boreholes and rivers. This region constitutes one of the main water catchment areas in Kenya, and is characterized by multiple streams and rivers and high annual rainfall. The use of boreholes and rainwater collected at the companies ensures that there is no direct competition for water with surrounding communities. The Mt. Kenya region is densely populated with most of the population engaging in small-scale agriculture. Given the high pressures on land, any expansion of the floriculture sector could impact on local food production should land for floriculture be acquired from smallholder farmers.

Therefore, while floriculture utilizes scarce land and water resources in Kenya, there are both opportunities and challenges that emanate from the sector. However, context is key to uncovering the food security outcomes associated with floriculture in the country.

Unpacking the numbers

Working in Kenya's floriculture sector

The provision of employment to the masses has been underlined as one of the key ways through which the floriculture sector contributes to local economies and livelihoods. As our aim is to provide insights into the impacts and contributions of the sector in local settings, this section explores the direct and indirect linkages between employment and food security among employees and local communities located near the floriculture companies. The following table contains employment data collected in Kenya in 2014.

The data above confirm that the floriculture sector is highly labour intensive, with a total of 5,164 jobs across the eight companies included in this study. Women constitute the predominant workforce making

an average of 64 per cent of employees. Temporary employment, however, is prevalent in the sector mainly due to high demand at certain times of the year. While wages in the floriculture sector differ per company, they all surpass the agricultural sector's minimum pay rate of KES 3,600 (€ 33,81) that was stipulated by the Kenyan government; wages also surpass the minimum set by the Horticultural Centre for Development Association (HCDA) of KES 5,000 (€ 46,95). The HCDA has set a relatively higher minimum wage since it deals with export companies as opposed to the government who deals with the entire agricultural sector in the country. Within a company, the wages on offer differ depending not only on a worker's position, but also the duration that one has worked at the company. This difference arises from the regular annual increases in wages for employees, meaning that employees that have worked the longest also earn the highest relative to others in the same position. Another influential factor on the amount of wages received is the type of contract; those employed on a temporary basis earn less than those working under a permanent contract. Of the 42 employees interviewed, 28 earned between € 45 and € 135 per month. Employees earning above this amount work in higher positions such as Department Head or as a laboratory technician.

The offer of wages higher than the government's minimum wage in the floriculture sector is motivated by various reasons. According to one investor, the stipulated minimum wage by the government is too low and so does not allow employees to lead a decent life. Another investor viewed higher wages as a motivational tool for employees to be more productive at the workplace. Others stated that, labour competition forces companies to pay higher wages. However, even though floriculture employees receive more than the minimum wage, they report that the amount is still too low to live a decent life. It is often cited that wages in the sector are low because employees are low skilled with limited education.

Despite the low wages, employees described the work as physically demanding. This means that in order to be able to perform at the workplace, employees must consume adequate food yet pay for that food with constrained incomes. A number of companies have stepped up efforts to facilitate meal programmes, with some covering the entire cost of food while others subsidize food costs. One investor who covers all employee food costs reported that there are many employees who mainly depend on the meals provided at the workplace, a sign that accessing adequate food is an enormous challenge. The offer of meals therefore contributes to food security especially among those employees that are normally coerced to skip meals due to an inability to afford sufficient amounts of food.

Table 3 Employment data

Company	Number and type of employees	Monthly wage (KES)*	Working hours (Standard and overtime)	Additional provisions
1	Total: 700 Permanent: 350 Temporary: 350 Female: male ratio 70:30	Minimum: KES7,000 (€65.73) Average: KES14,000 (€131.47)	8 hours Overtime (4-6 hours): 150% of normal wage Public holiday: 200% of normal wage	Housing allowance: KES 2,000 (€18.78) – KES 2,400 (€22.54) Transport Healthcare (spouse and a maximum of 3 children)
2	Total: 700 Permanent: 90% (630) Temporary: 10% (70) Female: male ratio 70:30	Minimum: KES8,000 (€75.12) Average: KES10,000 (€93.91)	8 hours Overtime (max. 1 hour/day): 150% of normal wage	Healthcare Transport Meal programme
3	Total: 2000 Permanent: 95% (1900) Temporary: 5% (100) Female: male ratio 60:40	Average: KES15,000 (€140.86)	8 hours Overtime (1-1.5 hours): 150% of normal wage	Employees taken to a hospital outside the farm
4	Total: >400 Permanent: 75% Temporary: 25% Female: male ratio 70:30	Average: KES12,000 (€112.69)	8 hours Overtime: 1-2 hours 150% of normal wage	Meal programme
5	Total: 600	-	-	Subsidized meals Healthcare
6	Total: 700	-	-	Healthcare
7	Total: 50	Above government minimum wage	-	Housing Healthcare (spouse and a maximum of 3 children)
8	Total: 14 All permanent Female: male ratio 50:50	Minimum wage: KES13,000 (€122.08)	8 hours Monday to Friday 6 hours on Saturday 2-3 hours on Sunday (in shifts) Overtime: 150% of the normal wage; 200% on weekends after 13.00hrs	Food allowance on top of the monthly wage

* Wages and allowances are reported in Kenyan shillings (KES); on June 1st, 2015 there were 106.49KES to one Euro. For reasons of comparability all conversions have been done on the basis of the currency valuation on the first of June 2015.

A key element of food security is clean drinking water. All companies offer clean drinking water to their employees; this is an essential undertaking especially in the Naivasha area due to the difficulties encountered in accessing clean drinking water. Groundwater in the area has extremely high levels of fluoride, which renders it unpotable. Employees can also carry clean water home, and some companies have also erected tap water points for adjacent local communities. As one of the investors informed, enhancing access to water among local communities in Naivasha reduces the risk of hippopotamus encounters as well increases the safety among women as they no longer have to travel long distances to fetch water. The benefits of these initiatives risk being reversed by the consumption of unclean and unsafe water in employees' households, which might also be linked to the inability of employees to carry water home from the workplace.

Responsible business

In addition to the efforts by companies to ensure favourable working conditions, external pressure

to conduct business responsibly comes in the form of certification standards. All of the companies in the study have been certified; among the popular certification bodies are Milieu Programma Sierteelt (MPS), Kenya Flower Council (KFC), and GlobalGAP. The adoption of the MPS standard is primarily due to market demands in the Netherlands, which is the major destination for flowers from Kenya. MPS and GlobalGAP exceedingly focus on environmental aspects, while the KFC standard, which has recently gained international recognition adopts a social perspective through its focus on human rights and Kenyan laws. In that manner, businesses are able to ensure operations meet international market demands while at the same time comply with national laws in Kenya. GlobalGAP, while adopted by some floriculture companies, is more popular among vegetable growers in the country. All in all, the choice of certification standards is primarily motivated by the destination market and the local industry within the host country.

Floriculture companies are also faced with challenges

that limit potential progress towards responsible business. As one investor stated, "...with PCPB (Pest Control Products Board), it is easier to register a chemical than a biological. For instance, dimethoate¹, which was not allowed in Kenya because of its harmful effects, just got allowed in the country four months ago. It is not allowed in any form of food or flowers, and what will happen is that local products will contain dimethoate which is dangerous to people's health". This grievance points to, among other important issues, the dangers of a laidback public institution. That chemicals deemed unsuitable are let into the local market exposes local consumers, while strict regulations are given to flowers that are inedible products. While the certifications target the established businesses, lessons can be drawn from the sector to ensure that chemicals allowed into the local markets are regulated to insure food and health safety.

Implications for food security

Ranked 80th out of 107 countries on the Global Food Security Index (2013), Kenya has performed poorly on the food security front. In 2013, more than 2 million people were in need of humanitarian food assistance, while in excess of 10 million were faced with chronic food insecurity and poor nutrition (Kenya Food Security Outlook 2013). When transitory food insecurity is taken into account (the type that usually occurs during droughts, floods, and other calamities), the number of food insecure people in Kenya doubles.

The drivers of food insecurity in Kenya can be categorized as economic, socio-political, socio-cultural, and ecological, and differ based on the region of the country. For instance, while northern Kenya grapples with insufficient water and rainfall, poor infrastructure and limited government support, the highly productive agricultural areas comprising western and central Kenya and the Rift Valley suffer from adverse economic situations, poor land use practices and water management, and land-access conflicts (Grimm et al. 2012). At the national level, Kenya's food security is critically jeopardized by climate change impacts in the form of frequent droughts and floods (GoK 2011), the latter of which have continued to have devastating effects both in the rural and urban settings. In addition to the emerging challenges, Kenya's national food stocks have declined since the mid-1990s while at the same time competition for agricultural land has intensified; this includes the leasing of land to cultivate export products (GoK, 2011) such as flowers.

¹ This chemical kills a wide range of insects on contact. For more information, see: <http://pmep.cce.cornell.edu/profiles/extoxnet/dienochlor-glyphosate/dimethoate-ext.html>

The study revealed different forms of food production among employees including the cultivation of vegetables and cereals as well as animal husbandry (including livestock and chickens). Out of 42 respondents, eight employees cultivated vegetables and cereals on individual plots of land that they acquired either through inheritance or purchase. Agriculture on rented land was recorded in five cases, while in five others agriculture was carried out at the places where they were born in the countryside. Chicken rearing was practised by three respondents and primarily for commercial purposes in response to a high demand for chicken products. This generated additional income; moreover, rearing chickens was especially feasible since only a small space is needed for the practice. In two cases only, employees who work at the same company had obtained a small plot of land from the employer on which they cultivated vegetables for domestic consumption.

Despite the fact that relatively few employees were involved in their own food production, two major observations stood out in the study. First, employees in the highlands of Kenya practised agriculture more than those who live in the drier Naivasha area; these employees did so mainly on inherited land. This observation is explained by the fact that Naivasha is not favourable for smallholder farming due to infertile soils and water scarcity. In the Kenyan highlands, a majority of the indigenous settlers has access to fertile land in an environment that receives significant amounts of rainfall.

The limited agricultural production among employees in the Naivasha area impelled the need for interviews with smallholder farmers in Maiella, one of the food-producing areas adjacent to the Naivasha flower hub. These interviews aimed to uncover the potential impacts of floriculture on local agricultural practices. Agriculture in Maiella is rainfed. The limitations of this was relayed by one of the farmers who stated, 'I cannot cultivate throughout the year because I have to depend on rainfall'. In recent times, rainfed agriculture has been undermined by weather pattern changes and farmers have incurred losses as a result of crop failure. This challenge has been accentuated by diminishing space as plots of land per farmer have reduced owing to population growth in Maiella; farmers are less able to diversify the crops cultivated. During harvest time, the transportation of goods to the market is hampered by poor infrastructure and farmers are coerced to sell their produce at low farmgate prices that are dictated by middle-men.

The farmers had little if any knowledge about the operations of the floriculture sector. Based on the information obtained from observation and farmer

interviews, floriculture companies are closed entities that only allow entry to employees. As such, they operate as enclaves and there are no engagements such as those that would facilitate knowledge transfer among local smallholder farmers. When questioned on the source of agricultural knowledge, the farmers mentioned local newspapers, radio stations, and fellow farmers, but there was no mention of the floriculture sector. One of the farmers who had lived in Maiella since the mid-1960s reported that as he has never set foot inside any of the company farms, he was unaware of what took place there. A positive contribution of the floriculture industry for farmers was the emergence of a market for agricultural produce. This is because floriculture employees have settled in areas adjacent to the floriculture farms, mushrooming these areas into small towns. As such, while the sector has promoted smallholder food production through the emergence of a bigger market, there has been no transfer of knowledge or technology between the floriculture companies and local smallholders.

Food prices in the local markets are volatile during the year, usually rising during the dry season and going down in the wet season when there are increased food supplies on the market. When the prices are high, employee households find it difficult to access adequate food due to a lack of financial capital. As such,

they result to buying foodstuffs on credit, to borrowing money from friends, or skipping meals. The main foods consumed are ugali, rice and githeri, all of which are widely consumed in Kenya. Githeri and ugali are the staple foods in the country, with ugali being prepared from maize flour while githeri is a mix of maize, grains, and beans. These staple foods are always available in the local markets, but as noted, are affected by changes in prices.

An important aspect of food security is nutrition, and this is influenced by a number of factors within the households of employees. First, the need for a varied diet was underlined as the most important among the respondents, followed by a desire to consume what a household finds appealing at a given point in time. The type of work carried out in the floriculture sector also influences the type of food consumed, as employees have to consume energy rich foods in order to be able to perform physically demanding tasks at the workplace. Further, the time available to prepare food influenced the type of food consumed, since employees work from early morning to evening. As such, more time-consuming foods are mainly consumed during off-days. The presence of children in a household also influenced the food consumed in that the parents feared the failure to diversify food would result in loss of appetite among their children.



Tanzania

National context

The United Republic of Tanzania lies in Eastern Africa and is bordered by 8 countries: Kenya and Uganda to the north; Rwanda, Burundi and the Democratic Republic of Congo to the west; and Zambia, Malawi and Mozambique to the south. Zanzibar, which united with Tanganyika in 1964 to form the United Republic of Tanzania, is located 40 kilometres from the mainland and just off of Tanzania's East African coastline. Tanzania has a total area of 945,087 km², of which 61,000 km² comprise inland water. Zanzibar has an area of 2,654 km². As of 2013, the country had an estimated population of 49.25 million people (World Bank 2015). Tanzania is highly ethnically diverse; there are more than 120 local languages spoken, and Kiswahili is the national language while English is the official language.

Tanzania has a tropical climate; and the country is divided into four climatic zones: hot humid coastal plain; semi-arid zone of the central plateau; high moist lake regions; and temperate highlands. The hottest period during the year occurs between November and February with temperatures ranging between 25 C and 31 C. The coolest period occurs between May and August where temperatures range between 15 C and 20 C. A notable 43.7 per cent of the land is suitable for agriculture: 14.3 per cent is arable land; 2.3 per cent is permanent crops, and 27.1 per cent is permanent pasture; 37.3 per cent is forested land; and 19 per cent is used for other purposes. Tanzania is home to Mt. Kilimanjaro, the highest point in Africa, and is bordered by three of the largest lakes in Africa: Lake Victoria, also the world's second largest freshwater lake, to the north; Lake Tanganyika to the west; and Lake Nyasa to south-west. The capital city is Dodoma, while Dar es Salaam is the commercial capital as well as the main port for the country. Dar es Salaam also serves other landlocked countries such as Burundi, the Democratic Republic of Congo, and Rwanda (CIA World Factbook 2015).

Ranked as a low-income country, Tanzania has a GDP of 43.65 billion dollars. The country's economy is highly dependent on its agriculture sector, which accounts for 40 per cent of the GDP, 85 per cent of exports, and 80 per cent of total employment. Other industries that significantly contribute to the national economy are tourism, mining, and small-scale industries. Despite being the mainstay of the economy, the agriculture sector is however inhibited by poor infrastructure especially in the rural areas, and low productivity. In 2014, the sector grew at 4



per cent following augmented crop production. The national economy grew by 7.2 per cent in 2014, and is expected to grow by 7.4 per cent in 2015. The main sectors that have impelled this growth are information and communication, construction, and other services. Importantly, the agriculture sector is anticipated to continue being the mainstay of Tanzania's economy owing to its significant share of the labour force as well as its centrality to food security. Agriculture is notably rainfed, and therefore the performance of the sector will greatly hinge on weather conditions (Charle and Dhliwayo 2015).

While the economic growth is welcome, it is however not fully inclusive. As a result poverty levels remain high; 28.2 per cent of Tanzanians live in poverty. The rural areas bear the brunt of poverty with an incidence rate of 33 per cent compared to 21.7 per cent in urban areas. The fact that national economic growth has not been reflected by similar growth within the population is in large part due to low productivity in the agricultural sector. After all, this sector accounts for more than two thirds of the total workforce and supports the livelihoods of three quarters of the total population. For instance, while in the past five years the economy grew by 6.4 per cent on average annually, the agricultural sector only grew by 3.2 per cent even though it accounted for a third of the GDP during that period. This scenario underpins the fact that in order to have far-reaching growth, especially in the agriculturally-driven rural economy, there is a need for significant improvements in the agricultural sector (Charle and Dhliwayo 2015).

Table 4 Characteristics of floriculture business in Tanzania

Company	Ownership	Location	Year established in Tanzania	Crops cultivated
1	Dutch, British, Singaporean, and Swiss	Arusha	1992	Roses; summer flowers
2	Dutch	Arusha	-	Roses

The Tanzanian floriculture sector

Floriculture constitutes a small sector within the national economy, especially in comparison to size of the floriculture sectors in Kenya and Ethiopia. The history of the industry can be traced back to 1987 with the inception of Tanzania Flowers Limited in the Arusha region. At that time, flowers were grown in open fields (TPAWU 2009; Msogoya & Maerere 2006). It was not until 1992 that cut flowers were introduced in Tanzania (Semboja & Mbelwa 1999). Presently, cut roses comprise 70 per cent of all cut-flower production and so are the dominant floriculture product (TPAWU 2011). The majority of flower farms set up shop in Tanzania in the mid-1990s. Between 1995 and 1996, the area under floriculture increased by 46 per cent. Land was mainly acquired from local farmers who cultivated different crops that included coffee, wheat, and maize. Flowers are perceived in the country to have a competitive advantage over traditional crops due to that availability of a ready and fast market, high labour intensity, and higher profit margins (Semboja et al. 2000).

Flower production is concentrated in the Arusha and Kilimanjaro regions as a result of the favourable climatic conditions and nearness to the Kilimanjaro International Airport as well as the Jommo Kenyatta International Airport in Tanzania and Kenya, respectively. Other locations, namely Mbeya, Iringa and Morogoro, are postulated as having the potential for floriculture. This is due to favourable climatic conditions and nearness to Dar es Salaam airport – an airport with larger cargo capacity than Kilimanjaro International Airport (Msogoya and Maerere 2006). The Netherlands is traditionally the primary market for flowers produced in Tanzania and, in 2011, absorbed a staggering 90 per cent of all cut flowers in Tanzania (Rikken 2011). However, the importance of the Netherlands as a destination for Tanzania’s cut flowers is decreasing; in 2013, 55 per cent of the total cut flower export went to the Netherlands. The sector employs over 5,000 workers, and women comprise 60 per cent of the direct labour force (TPAWU 2009; 2011). As is characteristic of the floriculture industry in Eastern Africa, most of the floriculture firms are in the hands of foreigners or under joint ownership (Rieper 2010). In total, there are around seven floriculture companies in Tanzania.

Certain challenges have hindered the growth of Tanzania’s floriculture sector. One is inefficient air transport. Despite the fact that Arusha and Kilimanjaro are floriculture hubs, around 65 per cent of the flower transport is done via Nairobi’s international airport as it can handle significant loads and is more reliable (Mwase 2015; TAHA 2009). In addition, Tanzania’s sector is dominated by individual growers. Compared to other countries, where production occurs in clusters, the country’s sector loses out due to lack of technological knowledge sharing and exchange as well as dearth of competition that spurs growth (Bolo 2006). The Tanzanian government is criticized for the lack of policies that underpin floriculture in particular; in fact, the sector was not even mentioned in the current National Horticulture Development Strategy 2012-2021 (Mwase 2015). Given existing literature as well as findings from the field, the floriculture sector in Tanzania has underperformed and varied factors have hampered its growth over the years.

Three agro-businesses participated in the scoping study, two of which were floriculture businesses while the other was a breeding company focused on a wide variety of seeds². Table 4 outlines the characteristics of the two flower businesses.

As shown in the table above, both investments were under full or partial Dutch ownership. In the case of Company 2, the current owners had just taken over the company. This is a popular trend in Tanzania whereby a few floriculture companies are taking over ownership of others that have become bankrupt following an inability to pay back loans. While the number of individual floriculture companies has reduced, the few that have survived have expanded.

According to the companies, Tanzania was selected as the investment destination mainly due to the availability of land, cheap labour, favourable climatic conditions, and tax incentives. For example, companies are not required to pay taxes until the investment capital is gained; that is, when an investment breaks

² Tables included in this chapter highlight data from the two floriculture companies. However, in the text references are made to the breeding company by way of comparison.

even. For the breeding company, the African continent is the main focus of the business. East Africa in particular offers the best market thus far. For the flower companies, the primary market destinations are the Netherlands, Germany, the United Kingdom, the United States, Australia, South Africa, Japan, Russia, and the Middle East. As an export industry, the highest expenditures for the companies are freight, fertilizers, chemicals, and labour.

Harnessing scarce natural resources

Land governance

The Land Act 1999 and the Village Land Act 1999 constitute the two primary land legislations in Tanzania. The main aim of the Land Act 1999 is to 'provide for the basic law in relation to land other than the village land, the management of land, settlement of disputes and related matters' (Land Act 1999: 17). The Village Land Act 1999 on the other hand 'provides for the management and administration of land in villages, and for related land matters' (Village Land Act 1999: 9). While these legislations inform land governance in Tanzania, all land in the country is deemed public land vested to the President who acts as the trustee on behalf of all citizens.

There are three main categories of land in Tanzania: general, village, and reserve. In both Land Acts, general land refers to all public land that is not classified as reserved land or village land; it also includes unoccupied or unused village land (Land Act 1999: 24-5). Village land is defined in both acts as 'land declared to be village land under and in accordance with section 4 of the Land Act 1999 and section 7 of Village Land Act and includes any transfer or land transferred to a village' (Land Act 1999: 35; Village Land Act 1999: 21). In the event that villagers are settled and using land other than reserved land for the last 12 years prior to the promulgation of the act, that land will be deemed village land. This includes land lying fallow, used for grazing villagers' cattle or land customarily used for passage (Village Land Act 1999: 44-45). The various categories of land can be transferred from one category to another, as contained in the Land Act 1999 that states, 'where the president is minded to transfer any

area of general or reserved land to village land he may direct the Minister to proceed in accordance with the provisions of this section' (1999: 43). This also applies to the transfer of village land to general land or reserved land (Woldegiorgis 2014).

Investments in land in Tanzania are significantly guided by the Land Act 1999 which states that, 'a non-citizen shall not be allocated or granted land unless it is for investment purposes under the Tanzanian Investment Act, 1997' (1999: 79). A body corporate, such as a company, is deemed foreign in the event that a majority of the shareholders or owners are non-Tanzanians. The Tanzania Investment Centre is tasked with the provision of derivative rights to investors. This occurs on land that is designated for investments and usually follows identification and gazetting of that particular parcel of land. Moreover, Land Act 1999 prioritizes investments over residential purposes. Section 25 states, 'if an application for a right of occupancy or a derivative right, which is made by a non-citizen or a foreign company, is for residential purposes, the use of such land shall be secondary or ancillary to the investment approved under the Tanzania Investment Act' (1999: 87-8). Once the derivative right or right of occupancy of a non-citizen or a foreign company comes to an end following expiration, termination or extinction, the interests or rights in and over the land are reversed and vested to the Tanzania Investment Centre, or any other authority prescribed by the minister in the gazette (Woldegiorgis 2014).

Acquisition and conversion of natural resources

The scoping study looked into the dynamics of natural resource acquisition and conversion within Tanzania's floriculture sector. Key information is outlined in Table 5 below.

As shown in Table 5, the companies operate on differing sizes of land. Company 2 operates on the smallest land area, which is explained by the fact that this is a branch of an umbrella company. The relatively huge land area for Company 1 comprises two flower farms that are under the same ownership. While the two flower companies had purchased land, the breeding company had rented land for a period in excess of 30 years. In all cases, previous land ownership was under other

Table 5 Acquisition, conversion and competition for natural resources

Company	Land size owned (ha)	Mode of acquisition	Water source	Crops cultivated	Previous land use
1	121	Purchased from another company	Mt. Meru catchment area	Roses Summer flowers	Coffee cultivation
2	10	Purchased from another flower company	River	Roses	Floriculture

investors which quelled the potential displacement of local communities. In addition, all previous crops were cash crops. Thus the cultivation of flowers has not directly displaced food production in these cases. In addition, the breeder company has actually moved towards the promotion of food production by engaging in vegetable seeds.

Water access is a critical issue in a country where food production is dependent on rainfed agriculture. Company 1 draws its water from the Mt. Meru catchment area, a source that has many other dependants that include local communities and agro-investors. The company reported that it possesses water user rights that it obtained from the local government; there have been no challenges in obtaining water. The breeder company pays for and obtains water from a river. One of the companies, following regulations agreed upon by the village council, accesses water only during part of the day; the rest of the time water is available for local community members. Water access challenges arise during the dry season that runs from December to March when the river volume is significantly reduced. During this time the company is coerced to cut down the amount of water used on flowers and to employ water-conserving methods.

Challenges in gaining water access have been exacerbated by the heightened demand for water. There is a rising number of water users including medium and large agro-investors as well as smallholder farmers. As a result, Company 2 has built two water reservoirs to ensure water availability in times of scarcity. These challenges are taking place in the face of changing weather patterns. For example, rainfall was received in January 2015, a normally dry period in Tanzania. The change in weather patterns will undoubtedly disrupt farming seasons. This will impact smallholder farmers in particular, and the groups lacking the capability to store adequate water are bound to face unrelenting difficulties. As such, it could pan out that those with the capital to invest in water efficient technology and water storage mechanisms will triumph while the agricultural activities of those unable to adapt to the changing availability of water will be stifled.

Employment in an underperforming floriculture sector

Employees' livelihoods revealed

The floriculture sector aids in the fight against unemployment in Tanzania by creating employment opportunities for local populations. The table below contains employment data from the two flower companies interviewed in the scoping study.

The employment information outlined in Table 6 above is indicative of the labour intensity of the floriculture sector, especially in comparison to other agro-investments. Across all of the companies, women comprised the majority of the workforce at a ratio of 60 to 40. However, as reported by Company 2, high unemployment rates have led men to seek employment in the floriculture sector as well.

Employees generally migrated, often with their nuclear families, from different parts of the country. For instance, among the five females and four males interviewed, only one respondent hailed from Usa River. The size of employee households ranged between one and five members; only three of the respondents were married, one was divorced, while the rest were single. The average age was 33 years; the youngest was 27 years old while the oldest was 41 years old. All respondents from outside Usa River lived in rented housing near the workplace. Companies provided housing allowances for these employees. As migrants, they incurred a significant increase in the cost of living therefore.

The majority of employees taking part in this study earned around TZS 100,000 (€43,44) per month. The breeding company offered slightly higher wages. The wages offered trump the minimum wage of TZS 60,000 (€26,06) which was set by the Tanzanian government. The low wages offered in the floriculture sector have long been a bone of contention. Through negotiations, the Tanzania Planters' and Agricultural Workers' Union (TPAWU) had significantly contributed to employees earning this higher wage. As confirmed by Company 1, the relatively low wages in the floriculture sector are largely explained by the fact that most workers are unskilled. For instance, among the employees that participated in the scoping study, one employee out of nine had attended secondary school, while the rest only had a primary school education. On top of the wages offered, all employees received housing allowances. However, the allowance was not always enough to cover housing costs in full.

All interviewed employees were under permanent contracts, worked six days per week and generally for around eight hours per day. Employees spraying chemicals however worked four to five hours per day since additional exposure was said to have severe health consequences. In order to reduce adverse health impacts, these employees are not allowed to spray for consecutive months unless the job is performed in an exemplarily manner, which seems to contradict the very idea of having such a rotational arrangement in place. While working as a sprayer may cost one's health, working fewer hours gave some employees the opportunity to earn extra income, something

Table 6 Employment details in the floriculture sector

Company	Number of employees	Average monthly wage* (TZS)	Working hours	Additional provisions
1	1300	TZS100,000 (€43,44)	8	Meals (breakfast, lunch and dinner) Healthcare
2	280	TZS102,000 (€44,31)	7.5	Meal programme (tea and lunch) Healthcare

Source: LANDac/F&BKP Country reports 2016

* Wages are reported in Tanzanian Shillings (TZS); on June 1st, 2015 there were approximately 2,302 TZS to one Euro.

that would not be possible if working for eight hours a day. In fact, five of the nine respondents were fully dependent on income from working in the floriculture sector, three had an income-earning spouse, while one engaged in construction for additional income.

Prior to employment in the floriculture sector, employees worked in a variety of positions: four engaged in waged labour; two practised small-scale agriculture; two lived with parents after completing school; and one ran a restaurant. As can be derived from the small sample of employees, those working in the floriculture sector come from diverse backgrounds and without any prior experience in floriculture. This finding underpins the general claim that the majority of the employees in the sector are unskilled. While working at a floriculture company might motivate employees to engage in agriculture, this is generally not the case. Employees reported that their primary motivation was the quest for financial capital. According to respondents, the benefits of working in the floriculture sector included the ability to make domestic improvements such as through home construction or, for longer-term employees, the ability to receive a pension as opposed to wages. Others felt there were no gains since the wages were very low. It was thus unsurprising that one of the main challenges highlighted in relation to working at a floriculture company was low income. Other drawbacks included exposure to harmful chemicals, the poor quality of equipment especially Personal Protection Equipment (PPE), harsh treatment by supervisors, and the physical demands of the work. Many viewed their work in the sector as a stopgap measure towards other ways of making a living such as through operating a small business. None of the respondents indicated farming would be an alternative should they stop working in the floriculture sector.

Responsible business and the transfer of knowledge and technology

Conducting business in a responsible manner has the potential to benefit different stakeholders as well as the environment. Adherence to certification standards is one of the ways in which floriculture companies in Tanzania conduct responsible business. This research

revealed that both of the floriculture companies are MPS and Fairtrade certified; one of the floriculture companies also held the British Ornamental Plant Producers Certification or BOPP. The breeding company had not adopted any certification schemes.

In both cases, the certification bodies carry out random checks to ensure company adherence to the codes of practice. Benefits include the use of environmentally friendly chemicals, improved working conditions for employees. In general, market demand led the two floriculture companies to adopt certification schemes. In contrast, the market did not influence the breeding company to adopt any standards. Finally, one of the firms felt that standards create an unfair playground for agribusiness since they are voluntary.

Within the confines of the floriculture companies, the firms had engaged in various acts of responsible business that targeted employees. These manifestations of responsible business entailed the provision of meals, transport services, healthcare services, and in some cases, housing. Moreover, companies went beyond certification requirements and engaged in responsible business practices that targeted the surrounding local communities. Company 1, for instance, trained members of the local community on tailoring, driving, accounting, computer studies and farming. Further, the company gave scholarships to students both in the community. The company also built a hospital and classrooms in nearby schools, as well as established several water points for local communities. Company 2 constructed toilets and classrooms, while the breeder company trained local farmers at a demonstration farm with the main goal of promoting the use of quality seeds.

Given the technological superiority of the foreign agribusinesses, the study also investigated whether or not the companies had contributed to the improvement of local agricultural practices through the transfer of knowledge and technology. While Company 1 and the breeding company had facilitated knowledge and technology transfer by training local community members, Company 2 reported that knowledge and technology transfer was not taking place. A major

challenge hindering transfer included a lack of capital; smallholder farmers could not afford the complex technologies used by floriculture companies. Other barriers standing in the way of knowledge and technology transfer include: low smallholder demand for technological knowledge; a lack of basic farming knowledge among smallholder farmers, and an unwillingness to move away from traditional ways of doing agriculture. Besides these hurdles, companies highlighted other general challenges facing local communities, including: a lack of skilled people to fill higher positions at places of work; high unemployment rates; and low efficiency and productivity.

Non-food crops for food security?

A food security analysis

Tanzania ranks 98th out of 109 countries on the Global Food Security Index with a score of 33.7 out of 100 – the lowest ranking among the four Eastern African countries considered in this research. This is despite the fact that agriculture is the country's main sector. Agriculture accounts for almost a quarter of the GDP as well as the employment of 70 per cent of the workforce (GoT 2011). More than half of the cultivated land is dedicated to cereals and maize which constitutes the primary staple food crop. The production of maize among smallholder farmers is exceedingly for subsistence purposes and is characterized by a dearth of modern farming technologies and extremely low yields (GoT 2006). It is estimated that 85 per cent of farmers in the country own less than four hectares of land, of which only 2.6 hectares are cultivated (NBS 2012). In contrast to maize, wheat production is notably via large-scale farming that utilizes modern farming inputs. Between 2000 and 2007, agricultural growth was mainly experienced in relation to export-oriented crops such as cotton, sugarcane, and tobacco but this growth did not permeate to poor households either in terms of increased food production or increased ability to access food. In fact, based on the 2009 CFSVA (or Comprehensive Food Security and Vulnerability Analysis), food producers in the country were likely to be languishing in poverty and more food insecure (WFP 2013). The modest growth in agriculture has been attributed to the use of improved seedlings, advanced farming techniques, and extensive farming practices (GoT 2011).

The rates of food insecurity vary seasonally and usually peak during the non-harvest periods. The main areas faced with seasonal food shortages are the Lake, Western and Central zones, for periods lasting up to three and a half months in a year. Weather changes linked to droughts are strongly responsible for food shortages. Important in this regard is the fact that

Tanzania experiences dual rainfall patterns that divide the country into unimodal and bimodal zones; the former covers the south, central and western parts, while the latter is experienced in the north, east, northwest and northern coast parts. In the unimodal zones, rainfall is received in a single long season between December and April, while the bimodal zones have the 'short' and 'long' rainy seasons from October to December, and March to May respectively.

These dual rainfall patterns impact food insecurity in both similar and varied ways. In the unimodal zones, food shortages are less of a shock relative to the bimodal zones. Moreover, steep variances in food prices are also more frequent in the bimodal zones. Another difference between the two regimes entails farm inputs. Farmers in the unimodal zone cite the lack of farming inputs as a major hindrance to food security whereas farmers in the bimodal zones cite inputs as a relatively smaller challenge. Around the country, complaints about food shortages in urban areas are premised upon high food prices and a lack of money to access food, while in the rural areas the shortages are predicated upon droughts and a lack of rainfall. In a year, urban dwellers tend to experience food shortages for a longer period than their rural counterparts, but even then manage to consume a richer diet than those in rural areas. An overarching explanatory factor for food insecurity is poverty³; poorer households are less food secure. Poverty incidences are higher in unimodal zones, and rural households in general are poorer than urban households (WFP 2013).

Given this background on food security in Tanzania, various views and recommendations have been put forward on how to ameliorate the country's food security needs. Main strategies include boosting agricultural productivity by enhancing access to improved seeds, fertilizers, pesticides and herbicides; curtailing post-harvest losses; and accelerating irrigation solutions among smallholder farmers. In regard to food nutrition, there is need to promote crop diversification among smallholder farmers; to augment the nutritional value of the basic foods (such as maize flour); and to equip agricultural extension officers with nutritional knowledge and the necessary skills to offer nutrition-related advice to households. Further, the strong relationship between poverty and food insecurity has revealed a need to fortify income-generating opportunities among poor households through, for instance, improved infrastructure and

3 Tanzania's National Panel Survey uses a consumption-based 'poverty line' to identify the country's poor population. The households deemed unable to adequately cover their own basic needs are considered poor (WFP 2013: 27).

access to machinery such as maize mills in the rural areas. Food insecurity as a result of environmental shocks requires enhancing disaster preparedness and limiting the impact of droughts (WFP 2013). It is clear that there is broad knowledge on the food security situation in Tanzania. A major task lies in applying the knowledge to improve the food security situation. Relevant to this research is how the floriculture sector fits in and broadens existing knowledge in ways that bolster food security.

Food availability is one of the core prerequisites for food security. Moreover, it is imperative that available food is accessible for it to have meaningful impacts on food security. Research findings, based primarily on information collected from floriculture employees and their families, generated insights into the dynamics of food availability and accessibility. For employees in the floriculture sector, local markets constitute the primary source of food. This is, especially a result of the high number of employees who have migrated from areas far away from the workplace as well as the time demands of working in the sector that make it nigh impossible to engage in other livelihood activities such as farming. Out of 9 respondents interviewed around Usa River in Arusha, only 3 engaged in farming. These employees produced maize, beans and vegetables through rainfed agriculture; others used tap water to irrigate their crops. Two of the three employees had acquired land through inheritance, while the third had rented a piece of land.

As a result of their dependence on local food markets, employees are subjected to volatile market prices; this was highlighted as the primary determinant of food access among employee households. Food prices are highest in the dry season, indicating that the weather is central to determining food supplies and in turn food prices. This finding confirms earlier findings by WFP that pointed to rainfall availability as the chief influential factor of food security among households in northern Tanzania, including the Arusha region. With agriculture being primarily rainfed, the influence of the weather on local food prices is underlined.

The respondents indicated that food costs constituted the highest household expenditures, followed by housing rental and school fees. As such, other competing household needs impact on the ability of employees to access food from local markets. On occasions when employees do not have the financial capital to purchase food from the markets, it is common to obtain foodstuffs on credit. The loan is then repaid at a later date, usually at the end of the month when wages are received. In some cases, when other options had been exhausted, employees obtained foodstuffs from family members living in the countryside. As such,

in the same manner that family members at times depend on employees for financial support, employees can depend on family members for nutritional support.

Beyond the confines of employee households, floriculture companies have stepped up efforts to provide meals at the workplace. All of the three companies interviewed for this research served meals to their employees, and as Company 2 noted, it is mandatory for companies to provide food for employees in Tanzania. All of the companies serve primarily local dishes obtained from local markets: ugali and rice with vegetables and sometimes meat. By sourcing food locally, the agro-businesses promote local food production as well as provide business opportunities for the suppliers.

Information gathered on food utilization uncovered the types of foods consumed in the household as well as the factors that influence these food choices. In addition, the research inquired into the manner in which the food is prepared. Ugali and githeri, local staple foods that are made from maize, are the main foods consumed within employee households; vegetables are less popular. Food preparation constitutes an important process of food utilization, particularly the energy used for cooking. Among the respondents, the main sources of energy for cooking were charcoal and kerosene, with firewood being used by only two respondents.

The type of food consumed in a household is influenced by the household budget, the need for a varied diet, an interest in certain foods, and the amount of work that has to be done. Of these factors, the availability of food was primary due to the modest financial capital among employees in the floriculture sector. As meal preparation is generally considered to be a woman's task, one of the respondents indicated that his wife took full charge of what was prepared and consumed in the household. In addition, the work carried out at the floriculture companies influenced the type of food consumed in two ways. First, given the physical demands of floriculture work, employees consumed energy rich and filling foods such as ugali. Second, some employees strategically consumed fruits in order to stay healthy.

Another important component of food utilization is water quality. All three companies in Tanzania provided clean drinking water to their employees. This is a vital contribution especially in areas where clean drinking water is hard to come by. At the same time, respondents indicated that they consumed tap water outside of the work place.



IN-VITRO
LAUNDRY HOUSE
WASHING BAY
FERTIGATION HOUSE

FERTILIZ STORE

Uganda

National context

Uganda is a landlocked country located in the heart of the Great Lakes region. The country borders Kenya to the west, South Sudan to the north, the Democratic Republic of the Congo (DRC) to the west, and Rwanda and Tanzania to the south. The longest border, measuring 877 kilometres, is shared with the DRC. Uganda has a tropical climate, and receives rain in many periods of the year. Uganda also has two dry seasons between December and February and from June to August. Although the northeast part of the country is semi-arid, 71.2 per cent of the country's land is agricultural; forested area covers around 14.5 per cent (CIA Factbook 2015).

The estimated population of Uganda is 38.84 million with a life expectancy at birth of 59 years. There is a notable youth bulge as 48.7 per cent of the population are between 0 and 14 years old. In addition, 21.2 per cent are between 15 and 24 years old, while those between 25 and 54 years old constitute 25.7 per cent. These population dynamics culminate in an extremely high dependency ratio of 102 per cent for the entire population that is driven by a 97.5 per cent youth dependency ratio. Although the country is ranked 9th in the world for an annual population growth rate of 3.24 per cent, Uganda is also faced with the harrowing challenge of HIV-AIDs with an adult prevalence rate of 7.24 per cent (World Bank 2015; CIA Factbook 2015).

Uganda is a low-income country with a GDP of 26.31 billion US dollars. Despite being endowed with various natural resources including deposits of copper, gold, and oil following recent discoveries, agriculture still remains the backbone of the economy. The sector employs two thirds of the labour force (CIA Factbook 2015). Moreover, agricultural exports constitute 80 per cent of the country's total exports, with coffee the leading export product accounting for 22 per cent of all the exports. Other prominent export products include tea, cotton, copper, oil and fish. Uganda's largest export partners are Sudan and Kenya, which take up 15 per cent and 10 per cent of the exports, respectively. Further notable export destinations for Uganda are the DRC, the Netherlands, Germany, South Africa, and the United Arab Emirates (UAE) (Trading Economics 2015).

The unemployment rate in Uganda, historically low; reached its highest point, 4.2 per cent, in 2010 this is lower than the 6.90 per cent unemployment rate for the Netherlands and 4.70 per cent for Germany (Trading



Economics 2015). However, this low unemployment rate has been criticized as it does not take into account the numbers of unemployed that have stopped looking for a job as well the vast underemployment in rural areas (Bategeka n.d.).

A former British colony, Uganda attained independence in 1962. English is the official language. Milton Obote became the first prime minister of Uganda while King Mutesa of Buganda became the president in 1963. In 1971 Idi Amin ousted Milton Obote in a coup and the following eight years were characterized by terror especially for the Indian community who were ordered out of the country by Amin. The incumbent President Yoweri Museveni came into power in 1986, but it was not until 1996 that the first general elections were held. In 2005 the multi-party system was introduced through a referendum, yet in that same year the presidential term limits were scrapped. In Yoweri Museveni's time, Uganda has tussled with critical challenges. Although the Lord Resistance Army led by Joseph Kony has been in the centre of turmoil in northern Uganda, the faction has been driven out of the country to scatter in the DRC and the Central African Republic (CAR) (War Child 2015). Despite gaining independence in 1962, Uganda went on to experienced critical periods of violence and instability in the post-independence period. This history continues to shape the present day political environment, including the governance of land.

Uganda's floriculture sector

The floriculture industry in Uganda is just over two decades old. The sector kicked off in 1992 with only 3 flower farms at the time. Presently there are 14 flower farms in the country, down from the 22 flower farms that existed in the early 2000s. Currently, flowers are the third foreign non-traditional export product behind gold and fish. Floriculture farms in Uganda are mainly located near Lake Victoria in Mukono, Wakiso and Mpigi Districts and near the Entebbe International Airport (UFEA 2015).

One of the key contributions of the floriculture sector in Uganda is employment. The sector directly employs approximately 8,500 people, 80 per cent of whom are women. In total, the sector supports about 51,000 individuals, underlining its significance in the country (Nakweesi 2014). Uganda Flower Exporters Association (UFEA) notes that the employment opportunities generated in floriculture are vital for supporting rural households as well as for providing much needed rural infrastructure. In addition, the sector brings in new technologies that in turn impel the development of floriculture disciplines and the subsequent absorption of the professionals in fields such as agronomy and business administration among others. Also, new technologies introduced by the sector such as hydroponics, propagation, and post-harvest handling could spill over to the rest of the agricultural sector thereby spurring agricultural development in the country.

As highly capital intensive, it is estimated that the floriculture sector's total investment is around 80 to 100 million US dollars. When other factors such as tax revenue and infrastructural investments are taken into account, the sector brings in an excess of 20 million US dollars annually to the Ugandan economy. Unlike the other Eastern African countries, the key investors in Uganda's floriculture industry are cutting firms.

Moreover, all of Uganda's flowers go to the Netherlands from which they are distributed to markets in the US, Norway, Sweden, United Kingdom, Japan and Germany (UFEA 2015).

Nonetheless, the sector faces a number of challenges including stiff competition from international exporters; these exporters have diversified around various floricultural products while Uganda continues to focus on 'sweetheart' roses. Second, the international market has grown even stricter as a result of compliance standards. These have in turn exerted pressure on production costs making it difficult for various firms to carry on with the flower business. Further, increased labour costs as a result of high rates of labour turnover have pushed production costs up by around 35 to 40 per cent (Nakweesi 2014). As such, there are both opportunities and challenges facing Uganda's floriculture sector.

The scoping study provided essential insights into the Ugandan floriculture sector, a uniquely divergent floriculture sector relative to the rest of the East African countries examined in this research. Six companies, a mix of local and foreign firms, were interviewed to gather information about additional firms from adjacent communities, as well as employees and local leaders. Table 7 contains background information of the key firms that participated in the research study.

Each of the floriculture firms interviewed were established in the 1990s and early 2000s and located within the floriculture hubs of Uganda. All of the Dutch-owned firms focused on cuttings, a key feature of Uganda's floriculture industry. According to the Dutch firms, Uganda's climatic conditions are better suited for cuttings as opposed to cut flowers. As a result, a number of firms had switched from the production of cut flowers to the production of cuttings following severe financial challenges in the sector. Nonetheless, despite the many that went bankrupt a number of companies

Table 7 Agro-investments in Uganda

Company	Ownership	Location	Year established in Uganda	Crops cultivated
1	Ugandan (Indian descent)	Mukono District	1956	Cut flowers (Roses and Limonium) and vegetables
2	Ugandan (Indian descent)	Wakiso District	2002	Cut flowers (Roses)
3	Dutch	Mukono District	1996 and 2002*	Cuttings (Chrysanthemums)
4	Dutch	Wakiso District	1998	Cuttings (Chrysanthemums)
5	Dutch	Wakiso District	2003	Cuttings (Chrysanthemums)
6	Dutch	Mpigi District	1996	Cuttings (Chrysanthemums)

* This company established another farm in Wakiso District in this year.

still cultivate cut flowers. In order to operate at a profit, Company 2 reported that augmenting production was key toward ensuring economies of scale. The cuttings are primarily for export to the Netherlands and to other East African countries, while the Netherlands is the main destination for cut flowers. Out of all of the companies, only one indicated that it would consider venturing into different crops in order to diversify its products and to deal with weather and market uncertainties.

Uganda is an attractive destination for foreign agro-investors as a result of fertile lands and available water, favourable climatic conditions, cheap labour, and a reasonably stable political environment. Using the traction gained from the country's natural resources, the Ugandan government grants incentives to foreign investors such as ten-year tax holidays for new investors. Moreover, as company 3 informed, companies who export 85 per cent of their products qualify for tax-free imports. The incentives, relating to operational costs, are a welcome boost for the industry and for floriculture companies in particular given the industry's capital-intensive nature and dependence on costly inputs. In fact, in addition to the costs outlaid for labour, land, water, and electricity, companies must import a significant number of other factors of production such as fertilizers and greenhouse materials. A remarkable difference in operational costs was found between the cut-flower and the cuttings firms; while freight costs and inputs are the highest outlays for cut-flower companies, the highest expenditures for cuttings firms was inputs and labour force.

Fertile but scarce resources

Land governance

Through the Uganda National Land Policy 2013, Uganda exemplifies the progress made by various Sub-Saharan African countries in adopting progressive land governance policies. Currently at the implementation stage, the Land Policy is the first comprehensive policy of its kind since the country gained independence (Balemesa 2015). As the outcome of comprehensive engagement between various stakeholders, it is argued that the policy reflects nationally-held views on the socially, culturally, economically and politically sensitive aspects of land. With the policy, the Government of Uganda (GoU) aims to enunciate the centrality of land in the country's development, as well as outline the terms of ownership, distribution, utilization, alienability, management, and control of land. The implementation of the policy is expected to facilitate Uganda's agrarian transformation from a 'peasant society to a modern, industrialized and urbanized society' (MLHUD 2013: iii). Among the challenges Uganda is anticipated to face in the near future, population increase is considered

to be one of the largest given its implications for land competition. To relieve this pressure on land, the services and industrial sectors have been courted as the way forward as they can offer alternative livelihood solutions. It is along this line of thinking that a modernized and urbanized economy has been underpinned. In fact, the National Land Policy envisions, 'a transformed Ugandan society through optimal use and management of land resources for a prosperous and industrialized economy with a developed services sector' (MLHUD 2013: 8).

There are four key types of land tenure in Uganda that are recognized by the Constitution of 1995 and Land Act 1998, namely customary, mailo, freehold, and leasehold. However, the majority of the land in Uganda, around 70 to 80 per cent, is held under the customary tenure which is primarily regulated by traditional institutions and unwritten rules. This mode of ownership is limited by geographical and social factors, such as ethnic groups and their locations, and is barely surveyed. Although investors can obtain customary land through leases or agreed contracts, it is difficult to enforce such agreements in a court of law. Moreover, banks are reluctant in the use of customary land as collateral for loans (Veit 2010).

A second mode of land tenure is termed mailo. This tenure system applies to around 9,000 square miles and is found in central and western Uganda among the Buganda and Bunyoro communities. Mailo tenure traces its origins to the British colonial period, during which traditional rulers were allocated square mile blocks of land in return for political cooperation with the colonialists. The majority of mailo land is under tenant control as opposed to the landowner control. In 2010 the Land (Amendment) Act further insured security of tenure among the occupants, or kibanja holders, by noting that, 'a lawful or bona fide occupant shall not be evicted from registered land except upon an order of eviction issued by a court and only for non-payment of the annual nominal ground rent' (Veit 2010: 3). A kibanja holder has the option to purchase the land from the landowner, and thereby attain the mailo title status (Obbo et al. 2013).

Freehold tenure constitutes the third mode of land tenure; it confers permanent and perpetual rights to landholders as well as absolute power to dispose of the land. Only a small proportion of Uganda's land is held under freehold tenure, mainly in urban centres and formerly in the districts of Ankole, Toro, Kigezi, and Bugisu. Freehold land rights must be registered, and like mailo, are limited to Ugandan citizens. The only manner in which foreign investors can acquire freehold title to land is via a company with 50 per cent or more local shareholding. In all other cases, companies may only

lease land. Unlike customary titles, freehold titles can be used as collateral for bank loans (Veit 2010).

Leasehold tenure can be granted to a lessee by the holders of customary, mailo, freehold, or public land. In fact, this is the most popular mode of accessing land among foreign investors. While a lease can only be obtained for a maximum of 99 years, the lessee can renew the contract upon expiration. Long-term leases can be used as collateral for bank loans (Veit 2010).

The Uganda National Land Policy addresses the role of Foreign Direct Investment (FDI), cautioning that these types of investments could alienate smallholder farmers from land which in turn may culminate in tenure insecurity, food insecurity, land conflicts and poverty. Therefore, mechanisms are required to ensure improved livelihoods as well as safeguard vulnerable groups, all the while augment opportunities for investments. According to the Constitution of Uganda, non-citizens may only acquire leasehold on land for a period that does not exceed 99 years. In addition, non-citizens are prohibited from holding mailo or freehold land, although the government may compulsorily acquire land in the public interest and convert it to public land that can in turn be opened for acquisition by foreign investors. It is however noted that what constitutes “public interest” is not defined by the Constitution, which leaves the clarity of such in the hands of future legislative or judicial decisions (Kibugi & Makathimo 2012).

The Uganda Investment Code, which was revised in the year 2000, states that a corporate body is deemed foreign if the majority of company shares are held by non-citizens; in the absence of shareholding, decisions must be made by a non-citizen majority. In addition,

companies in which shares are held in trust for non-citizens as well as incorporated companies that do not restrict the transfer of shares to non-citizens are also deemed foreign. The Code also prohibits foreign investors from leasing land to produce crops and livestock. However, these conditions do not apply to investors who acquired the land prior to the commencement of the Investment Code. Moreover, companies can be exempted from these restrictions by the Minister of Finance on the advice of the Uganda Investment Authority and upon approval of the cabinet to ensure a regular supply of raw materials. Although the Code empowers the Minister to confer land accordingly, land conferment is usually executed by the president (SEATINI 2014).

Acquisition and conversion of natural resources

Uganda’s endowment with water and fertile lands has been a key factor for attracting agro-investments to the country. Given the primacy of these resources for food production, the scoping study investigated the impact of floriculture investments on the resources related to local food security. Table 8 below contains essential information about the flower companies that participated in the study.

As outlined in the table above, floriculture company landholdings range between medium and large-scale. In fact, a number of companies had not yet cultivated the entirety of their land. In some cases, less than half of company land had been put into productive use. Having uncultivated land was considered essential for future expansion, or in undertaking projects that require space. For instance, Company 5 had concrete

Table 8 Acquisition, conversion, and competition for natural resources

Company	Land size owned (ha)	Mode of acquisition	Water source	Crops cultivated	Previous land use
1	>170	Purchased from smallholders	Springs and swamps	Cut flowers (Roses and Limonium); vegetables	Small-scale agriculture
2	47 (45)*	Purchased	Lake Victoria	Cut flowers (Roses)	Unknown
3	123 (18)	Purchased	Boreholes	Cuttings (Chrysanthemums)	Cultivation of roses
4	60	Leased	Lake Victoria	Cuttings (Chrysanthemums)	Squatters and partly uncultivated
5	50 (12)	Leased from another company	River- and rainwater	Cuttings (Chrysanthemums)	Cultivation of rice and sugarcane
6	18	Leased	Rainwater and Lake Victoria	Cuttings (Chrysanthemums)	Unknown

* The amount of land actually cultivated.

plans to construct a settlement village for employees⁴. In other cases, part of the company land comprised swamps; the use of these areas have been prohibited by NEMA and the Ugandan government.

Half of the companies in the study had leased land while the rest had purchased land. While foreign investors can lease land for agriculture in Uganda when approved by the UIA, it is however not possible to purchase and obtain freehold tenure to land. In the case of Company 1, the company paid for the land but since ownership through freehold tenure is not possible, the company had to lease the land from its lawyer, a Ugandan citizen, on a maximum 99-year renewable lease. All of the land indicated above was purchased or leased from smallholder farmers, individual owners and other entrepreneurs. According to Company 2, land is costly in Uganda, especially that which is under mailo tenure, and investors do not receive assistance during the land acquisition process. In some cases the establishment of the floriculture company heralded a shift from smallholder farming and food production. In others, the land was occupied by squatters or was not cultivated at all. Irrespective of land use at the time of acquisition, none of the interviewed companies experienced challenges in acquiring their land. A fascinating insight was revealed by the research; according to the owners of Company 1, they had been forced out of the country during Idi Amin's era. In what could be deemed as critical support to investors, the company was able to retain their land and return to Uganda following Amin's overthrow.

In one instance, subsistence farmers were left bitter by the acquisition process after being evicted. An individual, who was based in Kampala claimed ownership of the land; to evict the farmers he destroyed the crops and demolishing their houses until a court issued an order halt the evictions. Even then, the land was leased to the flower farm and the former occupants were left landless. According to the local chairman, however, the company needed additional land for expansion. All of the occupants were compensated and were able to resettle elsewhere except for one who refused to move off of the land. The person was forcefully evicted but turned down compensation from the company. However, a common grievance aired both by the local residents and the chairman was that the floriculture company denied them access to their local lake. The investor felt that allowing fishermen to access the lake opened pathways for theft of company property. This has since strained the relationship between the company and the local community. And

4 Incidentally, Wageningen University in the Netherlands had conducted a study on this project.

while it was greatly anticipated that the company would create job opportunities, area residents became dissatisfied with the low pay and so quit working at the company. Faced with unemployment, the ever-deteriorating fertility of land and diminishing availability of land due to population growth, the situation was aggravated. The chairman was of the view that the floriculture company could contribute to local development through for instance facilitating access to water. However, the investor reported that it was not the company's duty to address local developmental challenges. As it was, the local community felt vilified by the company's approach while the company continued to operate as an enclave in the area.

The strategic location of the floriculture companies meant they were close to Kampala, the capital city, and Entebbe International Airport. Just as important, the companies were also established in a fertile area adjacent to Lake Victoria. The lake has multiple users, but as Company 4 relayed, its immense size ensured that water access was unchallenging for water users; companies were charged a fee based on the amount used. Nonetheless, this perceived ease of access had not deterred some companies from employing water saving techniques such as a hydroponics system. In addition, water pollution ranks high on the agenda of local and international regulatory bodies. As a result,, companies are mindful of issues beyond water access. For example, Company 4 reported that annual checks to evaluate the impacts of floriculture on the lake waters occur under the MPS certification scheme These checks are considered to be more stringent than those conducted by the local water institutions. For companies sourcing water from boreholes, a water extraction permit is mandatory,. However, companies obtaining water from springs and swamps face no limitations; companies are allowed to extract as much as they like. A further push for sustainable water use was demonstrated by Company 5 which collected channelled rainwater from numerous greenhouses. As such, efforts towards sustainable development have occurred despite readily available water resources.

A look into the localities sitting adjacent to the floriculture companies offered an opportunity to further scrutinize the impacts of floriculture investments in Uganda. In these areas, the dominant form of agriculture was smallholder mixed farming, on predominately small, rainfed plots. The main cultivated crops, including bananas, cassava, maize, beans and potatoes, are also the main foods consumed locally. The practice of agriculture, largely through methods unchanged year after year, has resulted in significant challenges related to a decline in soil fertility Agricultural production has slumped and so has food availability. In an attempt to address the deteriorating

situation, some farmers used manure to boost soil fertility, while others sought out new, fertile plots elsewhere. However, agricultural production remained a challenge given the rise in manure prices and population growth, both of which made it extremely difficult to farm arable land. This deterioration in agricultural production among local smallholder farmers stood in stark contrast to the flourishing floriculture investments in the same localities.

A number of employees reported that they were successful in acquiring land for agriculture, while others were not due to the high price of land in proximity of the capital city of Kampala. The hefty price of land is partly an outcome of competition over land resulting from floriculture activities. As such, while floriculture farms were located in strategic locations, these same locations turned out to be less favourable for would-be local farmers. In more ways than this, floriculture has made it more difficult for local populations to access land for agriculture. Moreover, success in the sector did not propel agricultural practices in the surrounding areas.

Uganda's acclimatizing floriculture sector

Employment

This section delves into issues of floriculture employment in Uganda and is based on the information provided by the floriculture companies, employees in the sector, and the local communities from the surrounding areas. Information was collected on wages, working conditions, employee

backgrounds as well as the impacts of floriculture on the surrounding communities. The table below contains basic employment information on several floriculture companies in Uganda.

The employment information outlined in Table 9 above is indicative of the labour intensity of the floriculture sector. Average wages are within a relatively similar range and inclusive of childcare, transport or meal allowances, and a standardized number of working hours. Additional services provided by the companies are also comparable, with healthcare a paramount service among all of the companies.

A total of fourteen employees were interviewed across the six floriculture companies, namely 8 women and 6 men who were working under permanent contracts. The employees had originated mainly from the central and eastern parts of the country; their ages ranged between 22 and 40 years old, with the average age being 28 years. Six employees were married, seven were single, and one was divorced. The household size ranged between one and four members, while the average household size comprised two members. All of the employees but one had moved to their current location in pursuit of employment. Prior to relocation, the respondents participated in various activities including studying, living with parents, practising agriculture, running small businesses, while others were employed elsewhere and even in other floriculture companies. The floriculture sector is known for attracting a low-skilled and less-educated workforce. However, two of the fourteen respondents had

Table 9 Employment information in the floriculture sector

Company	Number of employees	Monthly average wage* (general employees, UGX)	Working hours (per day)	Additional provisions
1	1,000	UGX170,000 (€50,84)	8.5	Meals Medical care Crèche
2	1,200	UGX108,624 (€32,48)	8	Meals Medical care
3	570 530**	UGX132,332 (€39,57)	8.5	Lunch allowance Medical care Crèche
4	2,000	UGX110,000 (€32,89)	8	Meals Transportation allowance Medical care Crèche
5	435	UGX140,000 (€41,87)	8	Healthcare Crèche Meals (charged)
6	546	UGX110,000 (€32,89)	8	Healthcare Crèche

* Wages are reported in Ugandan Shillings (UGX); on June 1st, 2015 there were approximately 3,344 UGX to one Euro.

** The number of employees working on the farm in Wakiso District.

attended college, seven had finished secondary school; five had a primary school education. Apart from two employees, the rest lived in rental housing, a reflection of the fact that they had moved from elsewhere. The rent ranged between UGX 20,000 (€ 5,98) per month and UGX 50,000 (€ 14,95) per month, while housing allowance ranged between UGX 6,000 (€ 1,79) per month and 25,000 (€ 7,48) per month. Six respondents indicated that they did not receive any housing allowance from their employer; this indicates the differentiated approaches adopted by the companies.

Employee wages generated key insights into the dynamics of wages within the sector. Despite the immense significance of wage earnings, the Ugandan government has not revised the minimum wage since 1984 when it was set at UGX 6,000 (€ 1,79) per month. Before this time, there was no minimum wage in Uganda. The establishment of the minimum wage in the country's floriculture sector was influenced by the Workers Union through a collective bargaining agreement. According to Company 2, the minimum basic wage set by the Workers Union was UGX 2,500 (€ 0,75) per day; this amounted to UGX 65,000 (€ 19,44) per month (26 days). A unique attribute of Uganda's floriculture sector was that employees receive an 'attendance bonus' which was remuneration for not missing a day of work. Further, each year employees get a raise based on a percentage of their wages. As a result, employees who have worked for a longer period of time earned more money. In addition, some departments offered performance-based bonuses. These dynamics made it difficult to generalize across the floriculture sector.

Despite being paid higher than the minimum wage, employees complained that wages were too low; in particular, the wage differences between general employees and supervisors were enormous. Moreover, the wages did not keep pace with the rising cost of living in Uganda. The highest monthly expenditures were food, housing, school fees, and healthcare. Although companies covered employee healthcare costs, the healthcare costs of relatives were high. Loan systems instituted at the workplace facilitated access to financial capital among employees. While four employees had taken out a loan, others had not. Some employees were afraid that they would be unable to repay the loan and would face severe consequences as a result. Others pointed to the lack of a tangible business plan. Among those that had taken out a loan, the primary financiers were either the company or the Savings and Credit Cooperatives (SACCOs)⁵ at the

company. While the companies did not charge interest, the Workers SACCOs charged around 10 per cent per annum. The loans were used to purchase livestock; to pay for a family member's medical bills; to buy a plot of land; and to pay school fees. As such, the loans were mainly used to address urgent needs, and for investment purposes in spite of a limited income. The eight respondents that had invested their loan money had other means of income; Moreover, given the time constraints of working as a floriculture labourer, the majority had either a spouse or a hired hand to carry out the income-generating activity.

The establishment of the floriculture companies elicited divergent views from the surrounding communities. On one hand, floriculture had exposed localities that previously had been economically marginalized. The entrance of floriculture led to infrastructural development via roads and electricity, and rental housing following the influx of migrants. For instance, one woman who lived near one of the floriculture companies was able to supplement her income by renting out rooms on her compound to floriculture employees at UGX 35,000 (€ 10,47) per month including electricity. On the other hand, there was a notable reluctance to work in the floriculture sector. Many respondents pointed to the dangers associated with the chemicals used in the sector. In fact, one respondent who was a primary school teacher claimed that while she did not know anyone in particular, she heard stories of people who died as a result of chemical exposure. Another respondent claimed that the chemicals used in the industry are lethal and that she knew three people who had died as a result of chemical exposure. Another respondent working in one of the floriculture companies claimed that the chemicals led to 'strange illnesses' and for that reason, she would not advise her relatives to work at a floriculture company.

In addition to the perceived negative effects of chemical exposure, low wages in the floriculture sector discouraged people from working at the companies. This was articulated by one woman who runs a small restaurant next to one of the floriculture companies:

People from the area prefer making bricks where they can earn UGX 10,000 (€ 2,99) per day for making 1,000 bricks, as opposed to working at the flower farm where wages are low and one is exposed to chemicals. In fact, the work of preparing clay and soil used for making bricks can offer UGX 60,000 (€ 17,94) in two days.

A critical subject at the community level entailed the floriculture industry's working conditions, especially the harassment of women at the workplace. Employees interviewed in the study highlighted the harsh treatment of supervisors as one of the main challenges

5 For more information see: <http://www.ucscu.co.ug/data/menu/49/Welcome-to-UCSCUhtml>



of working in a floriculture company. Outside the confines of the companies, further fears were expressed. One housewife who practises agriculture on a small plot of land stated that her husband did not allow her to work at any of the floriculture companies as it would strain their marriage; 'many idle men' work there and the numerous extra-marital affairs take place. Further, the husband also feared that his wife would become uncontrollable once she had her own income. While the former reason points to the need for empowerment, and the fair and equal treatment of women at the workplace, the latter points to a general discourse on women's empowerment within households and the domestic challenges that need to be addressed at a societal level. While the floriculture sector has created opportunities the quality of employment is low. This strongly indicates a need for improvements within the sector, especially in regard to wages. It is here that the government has failed to have an influence.

Responsible business and technology transfer

A look into how the floriculture investments in Uganda conducted agribusiness in relation to other stakeholders illuminated the complexity surrounding

the oft-debated concept of responsible business. Given the usually anticipated flows of knowledge and technology transfer at the local level, this section delves into the impacts of the floriculture sector on local agricultural practices in Uganda.

Access to drinking water was a critical challenge for local communities in many of the areas where the floriculture farms were located. In response, companies had facilitated access to clean water, an accomplishment acknowledged by members of local communities. However, these well-intentioned efforts have also been a source of controversy. As one respondent reported, Company 1 had barred access to water after community members who accessed the premises in the pretence of going to fetch water were accused of stealing. The issue was later resolved at a meeting with the local community where both parties agreed to post a guard in to insure the security of the company's property.

While healthcare services were provided in all cases, only in a few companies allowed non-employees to access healthcare centres. For instance, a

comprehensive clinic had been constructed on the grounds of Company 4 to serve both employees and general citizens. In some of the locations, these services were heralded for their ease of access in what would otherwise be a long journey to a healthcare centre. While a few community members were appreciative of these services, various complaints emanated from other quarters with regard to the high costs that non-employees are required to pay relative to public healthcare centres. Also, questions were raised concerning the quality of services, with one of the respondents living close to Company 5 lamenting that the attendants did not know how to treat children and for that reason she preferred going to a public hospital that is farther away. This is even though she had to travel by motorbike since there are no cars plying the route by her home. The high costs charged by Company 4 were underlined by another informant who stated that, '...we [non-employees] have to pay UGX 50,000 (€ 14.95) at company 2 but at the public hospital we pay UGX 15,000 (€ 4.49)'. However, she noted that both centres provided quality services. Given the centrality of health to livelihoods and food security, there are still opportunities following the options provided by floriculture companies.

Next to the initiatives of the floriculture companies, other aspects of responsible business were not voluntary. These 'forced' acts had come in the form of certification standards, with all of the companies having adopted a few among MPS (including GAP, SQ, A, and ETA). The market primarily drives the adoption of these standards. However, in addition to facilitating access to markets, the standards had also led to improved working conditions as well as improved quality of the agricultural products. However, some of the intended benefits were challenged by local factors, such as the use of PPEs in the greenhouses. According to one of the companies, employees were reluctant to use the PPEs due to the high temperatures inside the greenhouses. Left without a choice, the company penalized those that failed to use the PPEs. Further, some of the environmentally-friendly chemicals recommended by the certification bodies were not available in the local market. This made it extremely difficult for companies to adhere to certification requirements.

Compared to local smallholder farmers in Uganda, floriculture companies utilize advanced agricultural knowledge and technologies. While this could have been viewed as an opportunity to exchange knowledge between the two entities, the companies unanimously reported that as a result of several issues, such exchange had not occurred. First, the technologies used in the floriculture sector by are too expensive for local smallholder farmers. Second, the technologies require prior knowledge on use and maintenance:

While farmers lacked this information, there was no registered interest to learn from the companies. Further, the specificity of the floriculture sector meant that the technologies used did not match the needs nor the scale of local farmers. As such, floriculture companies have not had the presumed effect in terms of technology and knowledge exchange at the local level, leaving an immense divide between the two agricultural spheres.

Food security

Out of the Eastern African countries investigated in this research, Uganda is the one country that had not made headlines as a result of grappling with food insecurity in the past. On the GFSI index which uses food affordability, availability, and quality and safety as the primary variables, Uganda is ranked 79th out of 109 countries. And while it is in the lower category, it has outperformed Kenya, Ethiopia and Tanzania. On the individual variables, Uganda ranks 78th, 81st and 80th on affordability, availability and quality and safety, respectively (GFSI 2015).

Around 81 per cent of households in Uganda engage in agriculture, with the northern, western and eastern regions recording higher rates than the central region, although the northern region produces the least food quantities. The main food crops cultivated are maize, beans, bananas, cassava, and sweet potatoes. Plantain and cassava comprise the staple foods, and are produced in quantities sufficient to feed Uganda. Maize and beans are produced in surplus to be exported to neighbouring countries especially Kenya and South Sudan. Besides cultivating crops, livestock production is a major agricultural activity practised by around 69 per cent of households nationwide. In this regard, food availability does not pose a major challenge for Uganda with the exception of the Karamoja region which experiences a unimodal type of rainfall. This region therefore faces inadequate food availability in times of poor harvest due to the lengthy dry season (WFP 2013).

Despite the high proportion of population that produces food, there is significant dependence on markets for food. In fact, around 50 per cent of households in Uganda mainly access food from markets. A lot of the food sold in markets comes from smallholder farmers around the country, but a dearth of proper storage facilities as well as inadequate income leads to the sale of surplus produce immediately after harvest. For consumers, food prices have been highly volatile in recent years primarily due to seasonal farming, in addition to prolonged dry seasons in parts of the country and flooding in others, as well as rising fuel prices in the international markets. All in all, food prices are relatively more stable in higher food production areas in Uganda, which arguably underlines

the significance of food production in bolstering food security (WFP 2013).

In regional terms, northern Uganda is more food insecure than other regions in the country, with households consuming fewer meals despite spending a relatively higher proportion of their income on food. This is subsequently reflected in the higher childhood malnutrition rates and underweight children. The high rate of poverty in the region, at 43.5 per cent compared to 26 per cent nationally, is deemed the main underlying explanatory factor for the severe food insecurity levels. Among the key issues that have contributed to high rates of poverty include the frequent and prolonged droughts in the north as well as insecurity following long-term conflict and sporadic cattle raids. The western region of Uganda also faces food insecurity, but more largely a result of a lack of dietary diversity. As majority of the households are subsistence farmers and thus depend on household food production. Moreover, there is less income to diversify the diet through the purchase of food. Countrywide, urban residents are more food secure than their rural counterparts, with higher incidences of poverty being registered in the rural areas. The poorest in the rural areas are also found to be more dependent on local markets for food, and are therefore most vulnerable to volatility in food prices. One of the key ways that is suggested to improve food security in Uganda is supporting smallholder farmers in accessing credit and thereby inputs to augment production and deal better with climatic changes (WFP 2013).

The intricacies of the food-flower relationship

To understand the linkages between the floriculture sector and local food security, it is necessary to look into how employee households access food. According to the interviews held with the employees, all respondents primarily accessed food from the local markets. There were only two employees that engaged in subsistence food production, with one cultivating on a cousin's three acre plot of land while the other had bought a one acre piece of land from a foreigner (a Congolese) who was returning home. In both cases, the agriculture was rainfed. The main crops cultivated by the farmers were maize, beans, bananas, cassava, and sweet potatoes – the main foods consumed in Uganda.

Accessing food from the markets exposed employees to the volatility of food prices. The respondents indicated that prices changed with the seasons and followed the increase or decrease in food supplies that resulted from the seasonal rainfed mode of practising agriculture. Food prices were deemed higher in comparison to the

countryside localities where the employees migrated from. Between twelve employees, daily expenditures on food ranged between UGX 1,000 (€ 0.30) and UGX 5,000 (€ 1.50), while two others indicated spending on average UGX 7,000 (€ 2.09) and UGX 10,000 (€ 2.99) per day. Out of the 14 respondents, 10 indicated having had access to adequate food at all times, while the other four were unable to access adequate food sometimes due to a lack of enough money. The ability to access adequate food was in part credited to the floriculture companies that sold food to employees in bulk and at a lower price than the local markets; amounts would be deducted from the employees' wages at the end of the month.

As food utilization comprises a crucial component of food security, the study aimed to uncover insight on the types of foods consumed within the households of employees as well as the key forces that influence the process of food utilization. The main foods consumed comprised the main local dishes in the country: ugali, matoke (plantain), sweet potatoes, and rice, accompanied by beans, fish, or groundnuts. A key factor that influences food consumption is personal preference, which means that respondents chose to eat what they felt like eating on a particular day. The availability of money determined whether the desired food could be accessed, while the amount of time available to prepare food influenced which type of food was consumed. Another influential factor was the physically demanding work in the floriculture sector; this led to employees consuming energy rich foods (carbohydrates). However, some employees did not change their consumption patterns following employment.

An essential aspect of food utilization is the preparation process. This underscores the mode of energy used for cooking, especially because the time required to prepare food influences the choice of food consumed in a household. The main sources of cooking energy for all respondents were charcoal and kerosene; each had to be bought in the local markets which increased expenditures related to food. Even though these sources of energy are less efficient relative to electricity or gas, employees (6 in total) with electricity in their homes indicated that electricity was not used for cooking. Instead, electricity was used for low energy purposes such as lighting. Finally, in addition to providing meals, companies provided drinking water. Moreover, respondents consumed clean water in their homes, with many boiling water to make it safe for drinking. There are therefore multiple avenues through which floriculture impacts on food security in Uganda, some of which were borne out of the innovativeness of the companies, such as selling food in bulk at affordable prices.

Ethiopia

National context

Ethiopia is a landlocked country in the horn of Africa with a total area of 1,104,300km². The country borders Eritrea to the north, Djibouti and Somalia to the east, Kenya to the south, and Sudan and South Sudan to the west. Ethiopia experiences a tropical monsoon climate that varies within a broad topography that comprise high plateau with mountain ranges that are separated by the Rift Valley. Agricultural land comprises 36.3 per cent of the total; the majority (20 per cent) is under permanent pasture; 15.2 per cent is arable land, while 12.2 per cent is forested. Following Eritrea's independence in May 1993, the coastline along the Red Sea was lost leaving Ethiopia the most populous landlocked country in the world. Even then, Ethiopia boasts the main source of the Nile; the Blue Nile originates from Lake Tana in the northwest of the country (CIA 2015). Ethiopia also has the largest water reserves in Africa and so is considered to be the water tower of Eastern Africa as a result of the 14 major rivers flowing from the Ethiopian highlands (BBC 2004).

With an estimated population of 99.5 million people and a population growth rate of 2.6 per cent as of 2013, Ethiopia is the second most populous country in Africa after Nigeria (World Bank 2015; CIA 2015). The highest proportion of the population, 43.94 per cent, is aged between 0 and 14 years old; 15 to 24 years old comprise 19.98 per cent while 25 to 54 years old account for 29.31 per cent of the population. Next to the high population growth, Ethiopia is endowed with a host of natural resources including modest gold deposits, platinum, copper, potash, natural gas, and hydropower (CIA 2015). Despite its wealth of natural resources and significant population, the country is among the poorest in the world with a per capita income of 470 US dollars, and a GDP of around 55 billion US dollars. However, in the past decade, Ethiopia's economy has experienced profound growth that has averaged 10.8 per cent per year from 2003/4 to 2012/13, which is significantly higher than the regional average of 5.3 per cent. This growth has been majorly driven by the agricultural and services sector, and consequently national poverty has reduced from 38.7 per cent in 2004 to 29.6 per cent in 2009. In its course of economic growth and poverty reduction, Ethiopia has managed to attain the MDGs for child mortality and water, while notable improvements have been recorded in the fight against HIV/AIDS and malaria (World Bank 2015).

Ethiopia offers one of the most intriguing political



histories in Africa, as it fervently rebuffed invasion by the Italians in the famous battle of Adwa in 1896; it also constitutes one of the oldest civilizations in the world (World Bank 2015). Throughout the majority of the 20th century, the country was ruled by extremely centralized governments. In 1991, the Ethiopian People's Revolutionary Democratic Front (EPRDF) took over and has been in power ever since. The country is organized into 9 ethnically based regional states that have autonomous governments within the federal republic. A significant feature of the party's approach is devolution, which has seen the delegation of powers and mandates to the regional states, woredas (district authorities), and kebeles (village authorities). However, despite this seemingly democratic transition, the central government still retains significant control over the country's affairs. The popularity of the government has seen the ruling party win the general elections in 2005, 2010, and recently in 2015, while the opposition has become incredibly weakened over time (World Bank 2015; CIA 2015).

Ethiopia's floriculture sector

The Ethiopian floriculture sector began in earnest in 1997 following the experimentation of two domestic private investors; the pair grew summer flowers for export to the European market. By 2005, 31 flower farms had been established, and two years later in 2007, the number had more than doubled with 67 flowers farms engaging in floriculture in Ethiopia (Gebreyesus & Sonobe 2012). By 2013, there were more than 80 farms that together used an area of 1,200 hectares (Staelens, Louche & D'Haese 2014).

The sector's sheer growth since its establishment is incredible, as it rose from garnering only 0.5 million US dollars in 2000 to raking in around 57 million US dollars in 2007, and almost 100 million US dollars a year later. In the beginning, the floriculture sector in Ethiopia did not receive attention from the government to the extent that the 1998 export promotion agenda did not mention floriculture. The government at the time did not have knowledge of the potential goldmine of the floriculture industry. For the investors in the sector, this meant a turgid experience with logistics, and access to land and finance. It was only after the sector established the Ethiopian Horticulture Producers and Exports Association (EHPEA) that the government dedicated support to the industry in the areas of airfreight, land access, and financing through long-term credit. This cooperation between the Ethiopian government and the private floriculture sector is deemed as one of the key factors behind the success of the sector (Gebreyesus & Sonobe 2012).

The majority of the flower farms in Ethiopia are situated in high altitude areas that are over 2000 metres above sea level, and around Addis Ababa, the capital city, where Bole International Airport is located. Floriculture is a largely foreign-dominated sector, with around 64 per cent being fully or partly owned by foreign investors who are, as of 2007, mainly from the Netherlands, India, and Israel. The Netherlands is the chief market destination for Ethiopia's cut flowers, and locally the industry was ranked fourth in the country's exports and was valued at 217 million US dollars in 2012 (OEC 2015). Despite its late entry into the floriculture industry, Ethiopia is the second largest exporter of flowers in Africa after Kenya, and the growth of the sector has led to direct and indirect employment of 85,000 people in the country (Sahle & Potting 2013; Getu 2013). Like in other countries, the majority of farm employees, around 60 to 70 per cent, are women who carrying out the tasks of picking, sorting and packing flowers. The predominance of women in the sector is attributed to women being more flexible as well as productive and skilled in handling the delicate

flowers. At the same time, the floriculture sector largely attracts a poorly-educated workforce who lack other employment opportunities. This is because the skills required entail carrying out monotonous and repetitive tasks (Barrientos, Dolan, & Tallontire 2003; Staelens, Louche & D'Haese 2014).

The proliferation of the floriculture sector has not come without its challenges. A highly contentious issue entails employment conditions, which have often been criticized for being insecure. Moreover employees face long days and mandatory working hours due to the perishable nature of flowers, exposure chemicals and the related potential health hazards, and notably, the low wages paid in the sector (Hale & Opondo 2005; Riisgard 2009; 2011). These challenges signify that the success of Ethiopia's floriculture sector should not mask the need to ensure that different actors in various positions along the flower value chain also share in the gains.

As the youngest yet the second largest exporter of cut flowers in Africa, the Ethiopian floriculture sector proved to be an insightful case study into the impacts of a burgeoning floriculture industry on local food security and sustainable development, approached from the context of land governance. Information in this country study was gathered from a broad and informative respondent base that included the flower farms, employees of the flower farms, members of the surrounding local communities, and select institutions affiliated with the floriculture sector in the country. The table below contains basic information on the floriculture companies interviewed in the study:

All of the companies interviewed were under Dutch ownership, and all were located in the Oromia Region, a key agricultural region in the country. The farms were established around a decade ago, underpinning the nascence of the sector. Among the investors, the motivation to invest in Ethiopia was impelled by the need to change production location, availability of land and cheap labour, low energy costs, and the tax

Table 10 Agro-investments Ethiopia

Company	Ownership	Location	Year established in Ethiopia	Crops cultivated
1	Dutch	Ziway Oromia Region	2006	Roses
2	Dutch	Ziway Oromia Region	2006	Roses
3	Dutch	Ziway Oromia Region	2005	Roses
4	Dutch	Koka Oromia Region	2005	Cuttings

incentives granted by the Ethiopian government. Given these favourable production factors, the highest costs of operation for the cut flower farms were airfreight, which, as reported by one of the companies, accounts for 50 per cent of the costs. Other inputs mainly include fertilizers and chemicals, and labour. For the cuttings company, the highest costs entailed labour, exchange rate fluctuation, and inputs. All of the companies used the Bole International Airport in Addis Ababa; Ziway lies around 160 kilometres from the capital.

In order to practise floriculture in Ethiopia, the companies were required to have a minimum capital outlay of 100,000 US dollars; this amount has now been raised to 200,000 US dollars. The Development Bank of Ethiopia can offer up to 70 per cent of the investment costs as loans to new investors, an indication to the investors that the government is committed by taking risks in the floriculture business. In addition to the offer of loans, the investors indicated having confidence about success in the business due to the favourable climatic conditions, tax holidays and duty free imports, and assured positive involvement of the government in the sector. As such, besides Ethiopia's natural resource endowment, government interventions have been key to the growth of the floriculture sector in the country.

Scarcity amidst abundance

Land governance

Land governance in Ethiopia is strongly anchored on the Ethiopian Constitution of 1995 which sets out basic laws for governing the ownership, management and administration of land; this document is not to be contradicted by any customary practice or decision by an organ of the state (Woldegiorgis 2014). Land in Ethiopia is under state ownership for the primary goals of insuring social equity and tenure security; it is not subject to sale or to be used as a means of exchange (Ambaye 2012). Article 40 of the constitution outlines the right of peasants to obtain land without payment, for pastoralists to acquire free land for grazing, and the right against displacement. Investors have the right to land following agreement on payments to be made for land use. Article 40 further spells out the right of individuals, where it is underlined that citizens have the full right to immovable property and permanent developments on the land. However, the government holds the right to appropriate private property for the public good; the dispossessed individual must be compensated first to the tune of the property's value in line with the federal land administration law, or granted alternative land. The notion of 'public good' also includes "better development project" undertaken by "private investors", meaning the government can legally appropriate land for investment by private actors who

are required to pay to use the land (Vhugen & Gebru 2012). In the event that the regional government dispossesses the rural landholder, then the region's rural administration land laws will be used to determine the amount of compensation.

Compensation details are contained in Section 3 of the Rural Land Administration and Use Proclamation 2005, which in addition to noting expropriated individuals should be compensated,, also notes that the compensation amount should be tantamount to the costs of replacing the property. In the event that the landholder loses land permanently, an additional payment equivalent to, '...ten times the average annual income he secured during the five years preceding the expropriation of the land' (2005: 3128). In lieu of compensation, the individual from whom land is expropriated can be granted substitute land. The compensation given in this case, which follows confirmation from the woreda administration that the substitute land is arable enough to generate at least the level of previous earning capacity, is equal to the average annual income garnered in the past five years prior to dispossession.

The Rural Land Administration and Use Proclamation 2005 in section 2(8) provides details on how holders of rural land use rights can transfer their rights under certain conditions. Peasants, semi-pastoralists, and pastoralists that are in possession of land certificates are free to lease land to fellow farmers or investors. The lease agreement, however, has to involve all the parties holding the right to use the land in question. Lease duration is dependent on the regional rural land administration laws. Once an investor leases rural land, they can use the lease rights as collateral. In addition to leasing, landholders can use their land use right to jointly partner with an investor to develop the land. Further, landholders with rural land use rights can transfer the land use rights to family members in the form of inheritance.

The manner in which land is to be used is guided by local authorities, in accordance with section 2 no. 13 which notes that, 'a guiding land use master plan, which takes into account soil type, landform, weather, conditions, plant cover and socio-economic conditions and which is based on watershed approach, shall be developed by the competent authority and implemented'. Moreover 'an equitable water use system shall be established between upper and lower watershed communities' (2005: 3141). Following these details, Ethiopia has embarked on major master plans in different regions of the country that have been central to key agro-investments. Regional states have been tasked with establishing institutions to implement rural land administration and land use systems, and

to ensure that the institutions are strengthened to function accordingly.

Competition for scarce natural resources

Ethiopia's natural resources of land and water have played a central role in attracting foreign floriculture investments to the country. However, how does this acquisition of resources impact on local food security? This section presents key research findings, starting with the table below which contains essential information on natural resources vis-à-vis the floriculture companies.

As shown in the table above, Companies 1, 2 and 3 had leased land from a foreign company for less than 10 years, a period that had almost expired at the time of the study. However, upon expiry of the current lease, the Ethiopian government will become the leaser, consequently cutting down the costs of leasing land. Company 4 on the other hand employed a variant approach by leasing land from local smallholder farmers. At first, Company 4 presented a business plan to the Oromia regional investment office in Addis Ababa. The investment office then informed the woredas (district authorities) about the investment plans, who in turn informed the smallholder farmers. In addition, an environmental impact assessment had to be conducted at the cost of the investor. The compensation fees were paid to the district and regional officials, who would then pay the farmers at ETB 135 (€ 6.01) per hectare per year. The investor expects to renew the lease once the 30 years are over, and in the event that more land would be required for future expansion, similar steps would be followed. Despite the land acquisition process being facilitated by government institutions, a number of challenges were encountered. These hurdles include long bureaucratic processes, scanty background information on potential investment locations, investment capital and having to pay land compensation prior to the establishment of the investment.

All four companies were practising floriculture on land

previously used for food production. The previous government food production project came to a halt as part of the privatization process that opened doors for floriculture investments that access land at a fee. Near to Lake Ziway, the land is strategically located for the water-intensive floriculture sector. There were no regulations on the maximum water volumes that companies could extract from the lake, and the investors felt the lake was big enough to satisfy water needs of not only the agro-investors, but also the local farmers and pastoralists. Company 4 obtained water from boreholes and rivers; abstraction limits did not apply either, and even when water licences were issued, checks were not conducted. All the companies employed water-saving techniques such as drip irrigation, hydroponics, and automation systems.

Employment

Working in Ethiopia's floriculture sector

An area in which the floriculture sector had performed amicably is in the creation of numerous employment opportunities for local people in Ethiopia. The numbers require a closer look to comprehend the manner in which employment indeed impacted on local livelihoods, and especially food security. Key employment information is contained in Table 12 below.

The labour intensity in the flower farms was underlined by the data collected and shown in the table above; on average there were around 32 employees per hectare. The average basic wage across the three companies was around 36 Euros per month, and employees worked for 8 hours a day and 6 days a week. The workforce hailed from different parts of the country. The varied origins of employees were indicative of the translocal effects of the floriculture sector that resulted in urban lifestyles in relatively rural spaces.

Background information collected from the employees that participated in the study generated useful

Table 11 Acquisition, conversion, and competition for natural resources

Company	Land size owned (ha)	Mode of acquisition	Water source	Crops cultivated	Previous land use
1	38	Leased from another company for 9 years	Lake Ziway	Roses	Food crop cultivation by the government
2	42	Leased from another company for 8 years	Lake Ziway	Roses	Food crop cultivation by the government
3	42	Leased from another company for 9 years	Lake Ziway	Roses	Food crop cultivation by the government
4	23	Leased from local farmers for 30 years	Borehole and rivers	Cuttings	Smallholder agriculture (teff, wheat, maize, and vegetables)

Table 12 Employment information on the floriculture sector

Company	Number of employees	Average monthly wage* (general employees, ETB)	Working hours (per day)	Additional provisions
1	1,200	--	8	Medical care Crèche
2	1,200	ETB 700 (€ 31.14) (Minimum)	8	Medical care
3	1,350	ETB 800(€ 35.59)	8.5	Medical care
4	750	ETB 950 (€ 42.26)	8	Meals Transport Medical care

* Wages are reported in Ethiopian Birr (ETB); on June 1st, 2015 there were approximately 22.48 ETB for one Euro.

insights about employment in the floriculture sector. The average age of the employees was 30 years; the youngest was 21 years old while the oldest was 50 years old. The majority of 21 employees (14) had attained either primary or secondary school education, three had a college education, two had attended university, and two had not attended school at all. The two that had attended university worked in the positions of production manager and human resources manager, and had significantly higher income than the others: 350 Euros and 884 euros, respectively. The payment offered in the floriculture sector included additional income on top of the basic wage. Excluding the production and human resources managers, the median monthly income for general employees, the majority of employees in the floriculture sector, was 48 Euros. In this case, the median wage was used due to the skewness generated by the high incomes of the supervisors.

For employees, food and house rent constituted the highest monthly expenditures, followed by school fees, clothing, electricity, and charcoal, the last of which is the main source of energy for cooking. Almost all respondents (16) lived in rental housing, and all the employees but the production manager did not receive a housing allowance from the employer. Rental costs for general employees ranged between 9 euros and 22 euros per month. One of the ways in which employees supplemented their incomes was through company loans; in all cases there was no interest charged on these loans. Employment in the floriculture sector provided an income-generating opportunity for many employees who were unemployed and living with their parents beforehand, with others entering the sector after working as casual labourers or micro-entrepreneurs. The gains that had been realized from working in the floriculture sector included financial independence, an ability to meet basic needs, and an ability to support other family members. Key challenges that employees faced included exposure to chemicals,

inability to accumulate savings due to low wages, and the difficulty of engaging in other income-generating activities outside of work in the sector.

Members of local communities located near to the floriculture companies mainly practised small-scale farming and so rarely worked in the floriculture sector. The disinclination to work in the sector was attributed to the low wages on offer and the exposure to chemicals that debilitate one's health. Nonetheless, the investments were deemed to have positively contributed by creating employment opportunities as well as for spurring business opportunities in rental housing. In some areas, community members were reeling from having lost land to the investments in a process that saw the government facilitate land acquisition from smallholder farmers, some of whom were partly or not compensated at all. Compensation, as reported by the smallholders, only took place among those citizens that had lost their land and did not have any other land. When the government demanded land for investments, the occupants of the land had no choice but to follow the orders. As such, the establishment of the floriculture sector has brought with it critical challenges among local populations in an arena that is exceedingly controlled by the government.

Responsible business and technology transfer

The responsible business practices of the floriculture companies originates from both coerced and voluntary initiatives. In general, the adoption of global certification standards such as MPS and Fairtrade as well as of IPM represent the main approaches and has been primarily impelled by the quest to meet global market demands. Besides augmenting the competitiveness of a company's products, the certifications have also improved working conditions such as via the strict adherence to PPEs. Moreover, certification schemes

have fostered environmental sustainability through the use of environmentally-friendly chemicals. In the experience of some companies, however, the use of environmental-friendly chemicals that do not follow the proposed mixing proportions of certification standards results in a lower rating for the company. As such, although standards stimulate sustainable practices, they also derailing progress. In addition, it is difficult for companies to register biological agents even though these reduce the dependence on chemicals; this represents an institutional challenge that is hampering sustainable approaches in the sector.

Communities adjacent to the floriculture companies have benefitted from the healthcare services offered by some companies as well as the primary schools that at times include meals for children. However, the transfer of agricultural knowledge and technology has been largely non-existent primarily due to the high costs and unavailability of the technologies locally, and because the cultivation of flowers greatly differs from the small-scale agriculture practised in the local settings. As observed during data collection, the floriculture companies also subsist as enclaves that are difficult to access for local people, resulting in a stark detachment from the local agricultural environment.

Floriculture for growth or development?

Food security

The subject of food security in Ethiopia evokes critical attention given the tumultuous history of the country that has experienced severe cases of droughts, famines and severe food insecurity. A significant period that left indelible scars on Ethiopia occurred between 1983 and 1985 when the country faced its worst ever famine; roughly 8 million people were affected and around 1 million people died of hunger and starvation. The negative effects of the famine extended to the post-famine period as households were left with little assets to cushion them against future shocks (Webb & von Braun 1994). In 2002, Ethiopia was faced with another catastrophic famine despite having experienced good harvests in the previous two years. The fall in the prices of grains during the years with high yields discouraged farmers from investing in agriculture. This ultimately left around 6 million people in dire need of emergency food aid and a further 15 million Ethiopians who were facing the threat of starvation (Kuma 2002; Gabre-Madhin 2003). These two scenarios indicate some of the severe challenges Ethiopia has had with food insecurity in the past decades.

Presently, Ethiopia is ranked 86th out of 109 countries on the Global Food Security Index (GFSI 2015). According to GFSI (ibid), there are various predicaments

challenging the state of food security in the country including low public expenditure on agricultural research and development; low GDP per capita that hampers among other things, the ability to access food; a high proportion of population below the global poverty line; extremely low diet diversification in relation to low consumption of non-starchy foods; insufficient supply of food in major parts the country; the low proportion of the population with access to potable water; and the dearth of an established formal grocery sector in the country.

Food production in Ethiopia mainly takes place in the high and midlands that receive higher rainfall than the rest of the country. The driest areas are the south and the north eastern parts of the country, where pastoralism is the main agricultural activity. The Amhara and Oromia regions constitute the country's food basket as they produce in excess of 75 per cent of the grains in Ethiopia. At the national level, rural households are poorer and more food insecure relative to urban households. Climatic conditions are deemed the core determinant of the status of food security in the country, especially since the majority of households are dependent on subsistence food production largely without irrigation. As food availability diminishes in the drier seasons, the prices of food rise. As such, poorer households are unable to access adequate food from the market during these times (WFP 2014). The following section delves into the ins and outs of the floriculture sector and local food security.

The food security puzzle

The floriculture sector in Ethiopia was scrutinized over its impact on local food security in a country that has had a telling history of food insecurity. Among employees in the sector, local markets were the primary sources of food, a factor that greatly underscored the primacy of wages. Employees rarely practised agriculture, especially since they were not in possession of land. Food prices were said to be volatile during the year, especially since prices, contingent on harvests, usually rose during non-harvesting periods. In Ziway, local food security had been affected by the closure of a government project that focused on the cultivation of food crops before the land was used for floriculture. According to members of the adjacent community, food availability had deteriorated and as a result food prices had gone up, making food access more difficult.

While the dependence of employees on local food markets promotes local economies, it was also found to be their Achilles' heel. Market operators increased food prices upon knowing that employees in the floriculture companies had been paid. As one of the employees reported, market operators get information from relatives who work at the companies and are therefore

aware when employees are paid. Daily expenditures on food among employees varied significantly; eleven spent between 0.5 Euros and 2.7 Euros, while seven spent in the range of 4.40 Euros to 6.60 Euros. Three others spent between 8.80 euros and 13.10 Euros as a result of large households. Out of all of the employee households interviewed, only 8 could access adequate food; the remainder cited financial constraints as the main barrier to accessing adequate food.

The main foods consumed in employee households were injera, bread, and pasta in combination with beans, peas and vegetables. The type of food consumed was mainly influenced by the amount of money available to purchase food, the amount

of time available to prepare food, as well as food preference, diet variation, and non-perishability of food which influences how long the food can remain palatable. While employment in the floriculture sector had enabled some to access food through the income gained, others felt that having to depend on themselves, rather than their parents, had made food more unaffordable. These respondents were unable to vary the foods consumed. All of the floriculture companies provided potable water to employees, but only a few respondents treated water before drinking it at their homes. The floriculture sector has thus created a number of employment opportunities, but employee households are still faced with challenges particularly related to the low wages paid in the sector.



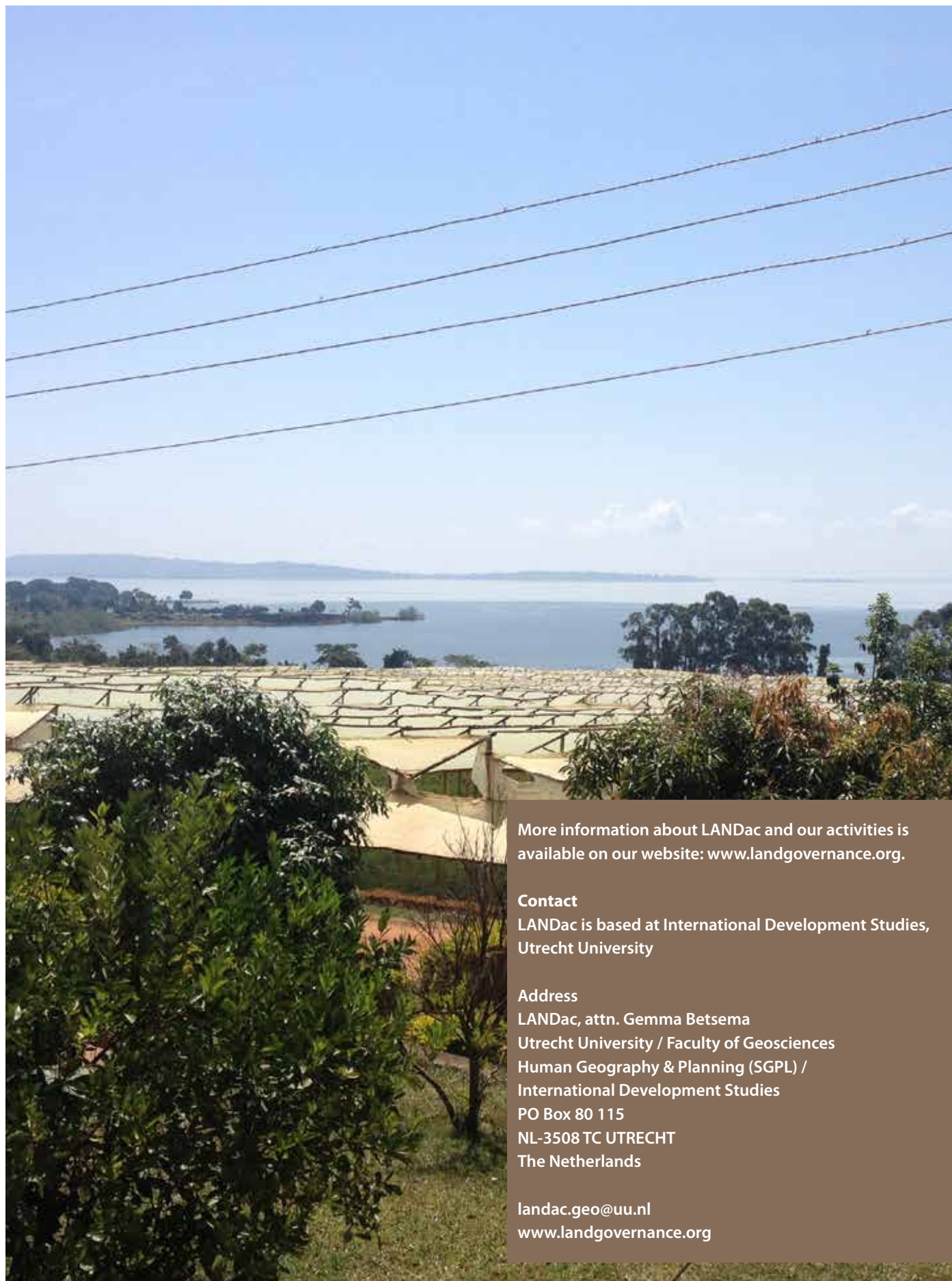
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