

The impact of private horticultural investments on the food security of the non-participating locals: zooming in on the rural area of Debre Zeit, Ethiopia



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Abstract

Ethiopia is one of many African countries that welcomes private horticultural investments in rural areas. The reason behind this is the development strategy of the Ethiopian government to offer food security at the national and local level by increasing productivity through labor-intensive agriculture. When looking at changes at the macro level, export-oriented agricultural products do not jeopardize the availability of food on the domestic market. At the micro level, the population has better access to food, because income has increased and purchasing power also. These conclusions are based on people engaged in the agricultural sector, and local consumers. However, it remains unclear how these investments affect the livelihood of the non-participating rural locals. The purpose of this study is to investigate what kind of resource utilization changes a private company triggers and how these changes affect the food security of the locals who are not participating in the business. The study was conducted in a village nearby the city Debre Zeit, called Dalota village. The results of the research showed that the resource utilization change that took place in the study area regards land. Smallholders gave parcels of agricultural land up to investors in return for compensation. The consequence of this is that villagers lost crop and graze land, which caused a loss in agricultural productivity and a decline in their food supply. The main way in the village to compromise land loss is by participating in the informal land market as demander. Unfortunately, farming on informally transacted land brings the farmer a lower production than before. Furthermore, the companies' agricultural practices cause soil degradation on surrounding parcels of land on which villagers farm, which poses risks on the capacity of the land to produce. Food insecurity is the result for the rural locals who are not involved in the investment.

Keywords: private agricultural investment, non-participating locals, food security, land loss, environmental degradation

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Tables of content

List of figures and tables	5
1. Introduction	6
2. Theoretical framework	7
2.1 The ruling party in Ethiopia.....	7
2.2 The rise of global capitalism.....	8
2.3 Ethiopian political economy.....	9
2.4 The goal of food security.....	9
2.5 Private agricultural companies' business model.....	10
2.6 Marketing effects.....	12
2.7 Limited resource access.....	13
2.8 Coping strategies.....	15
3. Regional framework	17
3.1 Characteristics of Ethiopia.....	17
3.2 Horticulture in Ethiopia and its success.....	17
3.3 Research area.....	19
3.4 Land rights in Oromia.....	20
3.5 Host organizations.....	23
4. Methodology	24
4.1 Research questions.....	24
4.2 Conceptual model.....	24
4.3 Operationalization.....	26
4.4 Methods, techniques and sampling strategy.....	26
4.5 Expected results.....	27
4.6 Positionality as researcher.....	28
4.7 Limitations.....	28
4.8 Co-creation plan.....	28
5. The process of land transfer	30
5.1 Consultation.....	30
5.2 Compensation.....	31
6. Locals' access to natural resources	32
6.1 Land.....	32
6.2 Water.....	35
7. Compensating land loss: informal land transactions	36
7.1 Informal land market.....	36
7.2 Demand side: households looking for land.....	37
7.3 Supply side: households offering land for lease.....	40
7.4 Agricultural productivity and food security on acquired land	41
7.5 Transaction insecurities.....	47
8. Compensating land loss: off-farm and on-farm employment	49
8.1 Off-farm employment.....	49
8.2 On-farm employment.....	50

9. Environmental degradation	50
9.1 Soil degradation.....	51
9.2 Impact surrounding households.....	52
10. Companies' contribution to the community	54
10.1 Employment.....	54
10.2 Knowledge spillover.....	55
10.3 Services and provisions.....	55
10.4 Products' end market.....	56
11. Conclusion	56
12. Discussion	58
13. References	60
14. Appendices	63
14.1 List of respondents.....	63
14.2 Interview questions for village administrators	63
14.3 Interview questions for local farmers.....	64
14.4 Survey questions for local farmers.....	64
14.5 Code tree.....	68

List of figures and tables

List of figures

Figure 1: Evolution of the export value of horticultural products for developing countries in Africa.. 13

Figure 2: Map of Debre Zeit, Ethiopia..... 20

Figure 3: Map of administrative regions, Ethiopia..... 22

Figure 4: Conceptual model..... 25

Figure 5: St Mary’s University, Addis Ababa..... 29

Figure 6: Greenhouses of a private company, Dalota village..... 33

Figure 7: Crop land of a farmer, Dalota village..... 34

Figure 8: Former grazing land, Dalota village..... 35

List of tables

Table 1: Total production of major vegetable crops in Ethiopia between 2004-2013..... 18

Table 2: Total production of major fruit crops in Ethiopia between 2013-2018..... 18

Table 3: Differences of variables between participant and non-participant households as demanders in informal land market..... 40

1. Introduction

The fact that Ethiopian horticultural farms were first state-led and now in the hands of private companies, leads to the problem of large-scale investors using areas where locals have been living before the establishment of companies, and thereby causing some locals to lose access to the resources on which their livelihood depends (Cotula, 2009). Investors are competing for scarce resources such as land and water that are necessary for the production of horticultural crops, but that the local population also needs and has been using for generations (Dell'Angelo et al., 2017). The research question of this thesis is therefore: *what kind of resource utilization changes does a private horticultural investment trigger and how is this affecting the food security status of the local community that does not participate in the project?*

Ethiopia is one of many African countries that welcomes private investments by making the investment climate more attractive through policy and legislative reforms (Davis et al, 2014). This was not always the case. When the EPRDF government came to power in the early 1990s, there was still a centralized, authoritarian state in charge of all resources and decision-making, including economic decisions. The EPRDF ultimately ensured that a reform took place: democratization of politics, decentralization and liberalization of the economy. However, the government has developed such a model that the developing state is linked to the liberalized market. In this system, the government plays an active role in the field of guidance and intervention in the market. Anyway, achieving an economic transition to a market economy where private ownership is increasing has been an important goal for the EPRDF. The government wanted to shift economic growth guided by the public sector to growth guided by private investments, in order to promote growth in the long term (Lie & Mesfin, 2018). Attracting foreign private investments is also part of this liberalization, because it is as a source of capital and knowledge that enriches the Ethiopian economy (Haile & Assefa, 2006).

One example of the type of investments that are growing in Ethiopia are agricultural investments. The reason behind this is the development strategy of the Ethiopian government to offer food security at the national and local level by increasing productivity through labor-intensive agriculture. At the same time, trade is encouraged to use export earnings for the finance of technological imports, which will lead to industrialization in Ethiopia. This development strategy is based on the argument that 85% of Ethiopians are dependent on agriculture, and development must therefore happen in this sector. The core, according to the Ethiopian government, is to implement technologies that will lead to revenue, but do not replace labor, so that employment is not lost. Food security will ultimately be the result of the increase in agricultural production (Lavers, 2011). However, this agricultural strategy aimed at small farmers did not go according to the planning of the Ethiopian government. In recent years, both stagnation in the small-scale agricultural sector and the ever growing interest of private companies in investing in Ethiopia have led to a greater need for the government to emphasize agricultural commercialization as a development strategy for rural areas. The government opened the door for private investments to support the development of large-scale commercial agriculture (Lavers, 2011). For years, the focus of the Ethiopian government has been on poverty alleviation through providing a secure food situation. The idea is to create access to food by promoting purchasing power and market-oriented production; export is an important part of this. In other words, the government wants to fight poverty through economic growth that can be established by promoting private agricultural investment (Joosten, 2007).

Research has been done into the relationship between privatized, large-scale, export-oriented agriculture and food security, which is the goal of the Ethiopian government. Conclusions on food security have been drawn at both macro and micro levels. When looking at changes at the macro level, it can be said that export-oriented agricultural products do not jeopardize the availability of food, food production for the domestic market is not negatively affected, and a favorable trade balance is the result. At the micro level, the population has better access to food, because income has increased and purchasing power also (Van den Broeck & Maertens, 2016). These

conclusions are based on people engaged in the agricultural sector, and local consumers (Joosten et al., 2015). Whether the whole population in Ethiopia benefits from private investments is still a question. It would be interesting to dive deeper into food security at the micro level, and investigate whether food security is not only reachable for the locals who are included in the business through employment and contract farming, but also whether this is the case for the locals who are not. Such research would be a favorable addition to the existing literature that has only focused on the food security of employed locals and contract farmers. It is therefore needed to find out more about the impact of the growth in private, large-scale agriculture on the food security of the locals who are not part of the business.

For a long time, agricultural companies in Ethiopia have mainly invested in the production of products such as coffee, leather and meat. Until recently, the horticultural sector was not thought to generate revenue in the area of export, as it belonged to the most underdeveloped sectors. Now, most horticultural companies have been privatized, and vegetables, fruit and flowers are being grown for export. A number of sectors within agriculture are intended for domestic private investment, but the horticulture sector is also open to foreign direct investment. The government of Ethiopia wants to build an economy in which a modern and productive agricultural sector dominates. Commercialization and privatization of the agricultural sector is considered crucial to achieving the government's goal. The expansion of the production and export of horticulture is an important part of this policy (Joosten, 2007). The focus of this research will, therefore, be on the horticultural part of the agricultural sector.

How investments in horticulture done by private companies directly influence the local food security because of the use of natural resources such as water and land, can only be investigated by being in a rural area where private agricultural companies are implemented, and giving the non-participating locals an opportunity to speak about how these investments have influenced their livelihoods. For this research, a village (Dalota) nearby the city of Debre Zeit will be used as case. The participants that will play an important role in answering the research question are living in the same area as where companies and their agricultural activities are settled. By filling this research gap within the literature, private horticultural investors can get information on the food situation of the locals who are not involved in the business, so that these people can be taken into account in future policy of the company.

2. Theoretical framework

In this chapter, a couple of topics will be elaborated. Before diving into the impacts of private horticultural investments on the local community, a background will be provided in order to make the establishment of agricultural companies understandable. Namely, agricultural privatization is happening in the context of global capitalism and with that the political economy of Ethiopia. Another relevant context is the goal of food security, which is an important concept for this research. Then rural transformations, that are happening as a consequence of large-scale agriculture and the business model of private horticultural companies, will be discussed. Here, the impact on the participating local community will be central. Finally, by presenting changes that are happening in rural areas, a transition will be made to the impacts these changes have on the non-participating locals.

2.1 The ruling party in Ethiopia

The Ethiopian People's Revolutionary Democratic Front (EPRDF) finally took power in Ethiopia in 1991 after an armed struggle that lasted a decade and a half; the result of this battle is that the military regime of former President Mengistu was overthrown. Before the EPRDF came to power, the party consisted of a coalition of four ethnic resistance groups led by the Tigray People's Liberation Front (TPLF). The EPRDF has succeeded in building a constituency in the rural areas of northern and central Ethiopia by seeking support from agricultural communities that opposed the practices of the

Mengistu regime. The EPRDF also tied ties with the neighboring Eritrean People's Liberation Front (EPLF), which provided military and logistical support to the party in exchange for a pledge to separate Eritrea from Ethiopia after Mengistu was overthrown. The secession of Eritrea finally became a reality and was fully completed in 1993. However, this was not received positively by the Ethiopian people for two reasons: national pride played a role and access to seaports was blocked, because Ethiopia was now being blocked by Eritrea and is surrounded only by land. In 1998-2000, a conflict broke out between Eritrea and Ethiopia related to the borders between the two countries and various economic issues, leading to a persistent divide within both the TPLF and the EPRDF. Prime Minister Meles stuck as the head of the EPRDF government, but not without difficulty. In power in Ethiopia, the EPRDF remains an alliance of four parties and also works closely with five other regional parties. The EPRDF has participated four times in national and regional parliamentary elections since 1995. The 1995 elections were boycotted by opposition parties, which eventually led to a war in 2000. Although the opposition gained some seats in the legislature, there was strong public support for the EPRDF. In 2005, the opposition had made great gains, especially in Addis Ababa and other urban centers, but more than 200 opposition leaders were subsequently jailed for refusing to take their seats and claiming the opposition had won. In 2010 - most recently - the EPRDF and its allies obtained 99.6% of federal and regional parliamentary seats. The 2010 election results demonstrate the extent of the political control of the EPRDF. Nevertheless, since 1991, the EPRDF has faced - and continues to face - multiple threats, both inside and outside the country, that contribute to its political insecurity (Berhanu & Poulton, 2014).

2.2 The rise of global capitalism

The type of economy that is globally dominating is capitalism. This form of economy has had transformative effects on the world as a whole and on every region integrated into the capitalist system. Capitalism has had, for example, major implications for Third World countries in Africa, Asia and Latin America, which are becoming increasingly integrated. The more integrated the countries are, the more they experience fundamental changes in the structure of their society and economic activities. Developing countries have undergone such a transition, that it has given them an important role on the world stage (Robinson, 2012).

Countries that have implemented capitalism, have converted an economic system in which all activities are in the hands of the government, into a system in which the public sector takes a step back and gives the private sector more ownership. How economic changes have taken place in the developing countries can be summarized on the basis of four important developments related to global capitalism. Firstly, work in developing countries has been deregulated; this means that economic activities have become flexible. Secondly, developing countries are open to capital accumulation through privatization, whereby investments and making as much profit as possible are central. The laws of the market play a central role in this. Thirdly, the establishment of the World Trade Organization has taken place. This means that Third World countries can be part of a worldwide trade. The fact that developing countries are part of global capitalism is mainly noticeable through their expansion of exports. And fourth, the neo-liberal model is imposed on the basis of structural adjustment programs that created conditions that are necessary for the free exploitation of capital within and across borders. In addition, capital accumulation is harmonized through political and legal conditions (Robinson, 2012). All these criteria have ensured that developing countries, including Ethiopia, can be an important actor in global capitalism.

Implementing neoliberalism was necessary to make developing countries part of global capitalism. Capital was freed from the state and the market took over. For developing countries, this ultimately resulted in major transformations in the political field, namely the breaking down of national and regional autonomies. In addition, various regions have been given a new profile, in which they are specialized and with which they have rewarded and retained their place on the world stage. Gaining a certain profile goes hand in hand with commodifying nature – the conversion of natural resources into goods through privatization (Castree, 2008). Commodification of natural resources is a typical feature of capitalism. Capitalism seeks to prevent moments of crisis - economic

instability - by exercising control through the commodification of resources. An example of this is maintaining stable agricultural production by placing agricultural land and the associated resources in the hands of private companies (Moore, 2015). This phenomenon is also called accumulation through expropriation and alienation, and is necessary for the development of capitalism, or in other words: economic growth (Castree, 2003). In the following texts, the privatization of the Ethiopian economy will be presented. Also, the commodification of Ethiopian natural resources will be elaborated.

2.3 Ethiopian political economy

Achieving a transition within the Ethiopian economy to a market economy has been an important goal since the EPRDF came to power in the early 1990s. The government has devised a long-term economic growth and strategy, whereby the economy is run by private companies. However, this policy is not fully implemented in practice, as it is intended in theory. The government says it wants to give the private sector more freedom in the area of economic activities, but in reality has difficulty with this and limits the progress of the private sector. This does not mean that the private sector is not developing in Ethiopia - which is the case - the government only needs to find willpower to put the economy in the hands of private companies (Lie & Mesfin, 2018).

This willpower can mostly be noticed in the agricultural sector, which is the most important sector within the economy of Ethiopia. Agriculture has a major influence on the economic growth of this country. It is a source of income for 85% of the population; 90% of the export consists of agricultural products and 70% of industries' raw materials comes from agriculture. However, it is also a sector that is the least developed. Agriculture in Ethiopia is still dependent on rain water. In addition, agriculture is not practiced through modern technology, and most activities are done in the traditional way. The government has therefore made it a priority to transform small-scale agriculture to large-scale agriculture by increasing and improving agricultural production, and developing agricultural commercialization and industries on the basis of private investments. The government ultimately wants to achieve an annual increase in production of around 8%. Ethiopia managed to increase agricultural productivity, but the complete transformation of agriculture is still a problem due to the issue of land ownership (Lie & Mesfin, 2018).

Both small-scale farmers and the national Ethiopian economy face the challenges of land scarcity and land rights. Only 66% of the total land area of Ethiopia is suitable for agricultural production. Small-scale farmers account for 96% of agricultural production. Due to a lack of property rights, there is also no need for small-scale farmers to further develop agricultural production. The remaining 4% of the land that is suitable for production is used for private and commercial agriculture. Although the government wants to achieve the development of large-scale agriculture, it has not applied any principles of a free market to land for a long time. The government has resisted an increase in the establishment of private companies in rural areas because it was afraid that the sale of land would stimulate a migration between city and countryside. The government feared for the phenomenon that millions of farmers would migrate to cities, while the cities do not have the capacity for this (Lie & Mesfin, 2018). However, this has changed, and the Ethiopian government has realized that the establishment of private companies could help to achieve large-scale agriculture, which will be explained in the following section.

2.4 The goal of food security

One of the biggest challenges for Ethiopia is overcoming food insecurity. This problem is the result of unproductive agriculture. A combination of a number of factors in the short and long term can explain this, such as high population growth, climate fluctuations where droughts have regularly occurred over the years, and a lack of technological innovation; these three causes have led to a significant decrease in agricultural productivity per rural household. The government wants to tackle the problem of food insecurity through a strategy that focuses on both the supply and demand side of food; that is, food must be available at both national and household level. Attention is paid to the use of different food production zones in Ethiopia - areas with fertile land and sufficient water - to achieve the goal of food security. The government's strategy can be summarized on the basis of

three points: (1) increasing food availability through an increase in agricultural production; (2) ensuring that food-deficient households have access to food; and (3) providing emergency food assistance to the people in need (Adenew, 2004).

To meet food security, it is important that all people have physical, economic and social access to sufficient and nutritious food that not only meets their nutritional needs but also their food preferences for a healthy and active life (Upton et al., 2016). There are a number of indicators to measure food security for households. Firstly, the availability of food is an important aspect. This availability is measured on the basis of sufficient quantities of food of the right quality. Secondly, food security is measured by access to food, where it is important that individuals have access to the proper means by which they can acquire food in order to have suitable food. Another indicator is the use of food, which involves sufficient food, clean water, sanitation and health care to achieve food well-being. And fourth, stability is important; a population, household or individual must have access to sufficient food at all times to experience food security. There must not be a risk of losing food. These four indicators need to be taken into consideration in order to achieve food security (Joosten et al., 2015). Furthermore, a lack of food security can be divided into two categories: chronic and acute. Chronic food insecurity is often seen as a consequence of poverty due to lack of resources; it takes place in the long term. Acute food insecurity is seen as a phenomenon occurring in the short term and caused by unusual shocks such as drought and war. Both chronic and temporary problems of food insecurity are present in Ethiopia (Adenew, 2004).

In order to increase the supply and demand of food and thereby achieve all the criteria of food security, the government has decided to encourage the private sector to improve the efficiency of the agricultural system. The government focuses on creating a favorable business environment. The idea behind this is that market reforms can increase agricultural productivity – including the increase in horticultural crops. The production of small-scale farmers is prevented by a lack of efficient agricultural input, such as water, seeds, pesticides, fertilizers, and feed. Moreover, the use of irrigation is low and most food crops are grown by rain-fed agriculture. A lack of irrigation is the result of too high costs for the right equipment, the right knowledge and techniques, the digging of wells, and the lack of shallow groundwater, which means that high costs are involved in tapping deep groundwater sources. Private companies can solve these problems by providing the right elements that are needed for a productive and efficient agriculture. Private companies provide the right agricultural inputs, market connections, efficient technologies, and employment (Adenew, 2004). The government is therefore increasingly opening its doors to private investments in order to realize large-scale agriculture; this means that natural resources find themselves in the process of commodification. Risks of failed harvests will be reduced and the chance of achieving food security will be increased. It is therefore crucial for the government to give more freedom to the private sector.

2.5 Private agricultural companies' business model

The way in which private horticultural farms – and agricultural farms in general – operate can be explained on the basis of their business model. A business model explains what the most important components are of a company's way of working. The result of such a model leads to transformations in rural areas, which will be presented in this section. As mentioned earlier, the rise of privatized agriculture in Ethiopia has happened in the context of providing food security at a national and household level. Private companies try to achieve this by introducing new forms of production, logistics, labor, technologies, and organization. In other words: small-scale agriculture is introduced to value chains. The main purpose of a value chain is that products and services are produced with added value so that they can be placed on the market. To make this happen, small-scale agriculture must undergo transformations, as it has to deal with a number of restrictions that stand in the way of being part of a value chain. These restrictions are related to market access, market orientation, available resources and the necessary physical infrastructures and institutions (Trienekens, 2011).

Small-scale agriculture in Ethiopia must therefore undergo development on a number of points if the objective of food security is to be achieved by private companies. It is not only sufficient

to gain access to markets to be able to start selling products. Farms must also have sufficient workers, technology, skills, knowledge, and supporting infrastructures for successful agriculture. These factors make it possible for value to be added to their agricultural activities. Developing countries, including Ethiopia, are confronted with these limitations because they lack specialized skills, have no access to technology and the market, and do not have the right input. In addition, it is necessary for a country to have institutions that support the positive development of agriculture. Developing countries are often characterized by a lack of the right institutions, which means there is also an absence in schemes that support the market (Trienekens, 2011). Private companies try to fill these gaps and thus give the farms a push in the right direction.

One of the ways in which private companies operate is by involving the local community in the business. Locals can be involved through the creation of employment, that can lead to a sufficient income (Davis et al., 2014). Work opportunities are created on the large-scale plantations of the company and established on the basis of contracts. Because the plantations of private companies are large-scale, it is necessary to have enough workers who help with production and make it as successful as possible. The locals who get employed by the company, get a chance to make a contribution to the company's value chain. In Ethiopia, wage labor for locals in rural areas is a common characteristic of the way in which private companies implement investments (Lavers, 2011). Contracts increase the stability of income flows, as employees regularly receive wages, which also increases the capacity to spend more on food (Schoneveld et al., 2011); this means that they are getting more access to food, which can positively contribute to food security. From this perspective, a positive rural transformation is taking place, as the employed part of the local community benefits from the presence of the company.

Another positive rural transformation that is happening as a consequence of large-scale agriculture, is the phenomenon of contract farming. In the case of contract farming, the company works together with small-scale farmers and has control over their production process, the quantity, quality and timing of this production. There is a contractual arrangement for a fixed period between a small-scale farmer and a company, whereby trading conditions and production conditions are established, the necessary resources are provided to the farmer, and the farmer keeps using the agricultural land. Companies enter into contracts with small-scale farmers because this guarantees the quantity and quality of products (Prowse, 2012). There are a lot of reasons why contract farming is also beneficial for the farmers. First, contract farming can help small-scale farmers through technical assistance (Bijman, 2008). This is because there is a transfer of agricultural technology from companies to small-scale farmers, to ensure that the quality and quantity of agricultural crops is where it should be. Farmers can learn a lot from this, especially if they have no previous experience with mechanizing methods of cultivation (Glover, 1984). In addition to technical assistance, there is also the distribution of crop-specific information. Farmers receive information from investors about growing crops; this mainly concerns specialized information about new crops. Such specialized information relates to food safety, timing, harvest, management, product quality, and other technical and market information (Simmons, 2002). As a result, farmers experience an increase in production due to successful cultivation and a reduction in crop waste in the value chain (Joosten et al., 2015). Minimizing waste leads to stability when it comes to food. Also, getting the right market information is necessary, because this can open doors for small-scale farmers to participate in the agricultural value chain (Simmons, 2002). Participating in the value chain means an increase in income and therefore increases purchasing power, just like employees are experiencing (Van den Broeck & Maertens, 2016). In addition to growing crops for the market, the farmers are also able to grow crops for their own livelihood due to an increase in agricultural production. This combination increases their food access and supply, resulting in food security. Thus, the establishment of private agricultural companies appears to be a win-win situation for all parties involved (Robertson & Pinstrup-Andersen, 2010).

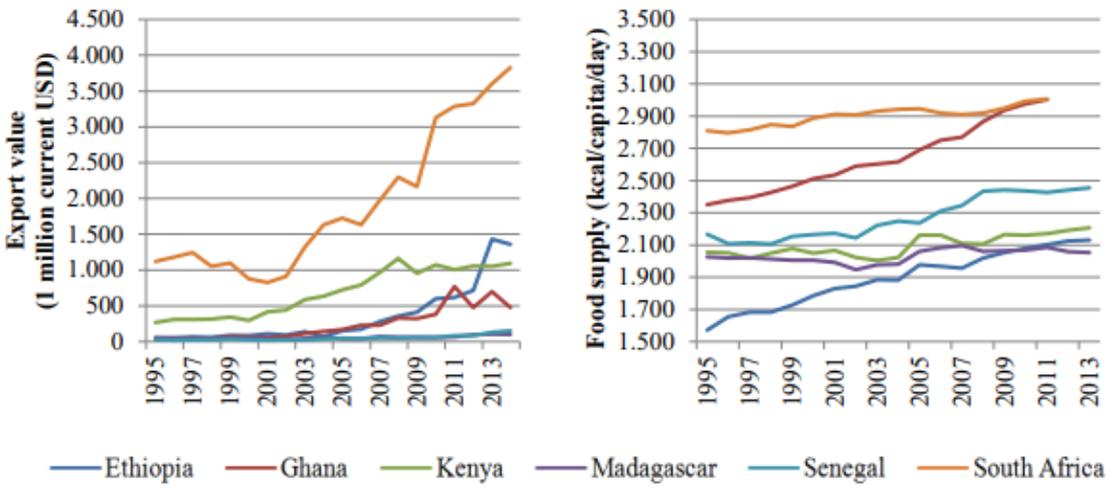
2.6 Marketing effects

When market effects due to large-scale horticultural investments are analyzed, the availability of food is relevant. Food availability means that there is sufficient food in terms of quality and quantity in a certain country. When there is talk of a food supply at the macro level, then food production within the borders of a country, food supply levels, and net food imports are considered. The food supply is therefore measured in terms of the number of calories per capita per day, food imports and national food production. In Ethiopia, horticultural exports have increased sharply in the last two decades, while the availability of food has also improved. This improvement is related to an increase in national food production and food imports. There is no negative relationship between the growth of horticultural exports and food availability in terms of production and imports. In addition, the horticultural export contributes to a positive trade balance of a country, which increases the capacity of a country to import food. However, an increase in horticultural exports can lead to greater dependence on global food trade and a decrease in food availability. These concerns were the greatest in 2008, as there was a food price crisis, and a strong dependence on imports and international market prices were considered harmful to the food security of developing countries. However, this has not been the case in practice, and food security has remained surprisingly stable (Van den Broeck & Maertens, 2016).

The export of horticultural products can also reduce the availability of food in a country. This negative result is the result of competition between products intended for export and food products intended for the domestic market. If horticultural companies place more emphasis on exports, and land and labor resources are allocated to export production, the number of food products available for the domestic market can decrease. This is mainly the case because multinational companies dominate horticultural exports, creating uneven competition and reducing national availability of food. It may also be that the competition for land is not that tough, due to greater availability. The expansion of the horticultural sector and the dominance of private companies do not affect the availability of agricultural land for small-scale farmers in this case. In addition, there may be complementarities between the export production of horticulture and the food production for the domestic market, because contract farming increases the productivity of small-scale farmers, thanks to an improvement in soil fertility, which farmers have learned from private investors. Technology transfer also makes a positive contribution to increasing productivity. In these cases, large-scale private agricultural investments lead to an increase in food production for the domestic market through technology and investment spill-over effects (Van den Broeck & Maertens, 2016).

Private investment in agriculture does not necessarily have to lead to negative consequences for the availability of food at the macro level. As mentioned earlier, there may be competition between products intended for export and products for the domestic market, but whether this competition immediately leads to a reduction in food availability depends on whether this reduction is offset by the increase in food imports. In addition, horticultural exports can grow at the same time as production for the land itself. In short, large-scale agriculture that is controlled by private investors and where the products are exported abroad, can also mean an increase in the number of available agricultural products on the domestic market (Van den Broeck & Maertens, 2016). These products are available for all Ethiopians, but whether everyone has access to this available food on the markets is not yet clear. Having a certain income is necessary to be able to purchase this food in order to get access to it (Joosten et al., 2015). Contract farmers earn this income through selling their agricultural products to investors, and employees through working on the company's plantations, but how non-included locals buy products on the market – and whether they are even able to do that – needs to be investigated.

Figure 1: Evolution of the export value of horticultural products for developing countries in Africa



Source: Van den Broeck & Maertens (2016)

2.7 Limited resource access

Another rural transformation that is happening as a consequence of large-scale agricultural investments, is the fact that these investments are changing the agricultural landscape and can have significant negative consequences for the livelihood of the rural population that is not involved in the investment. The social implications associated with the expansion of large-scale agricultural production through land acquisitions ensure that their sustainability is questioned and influence the livelihood mainly at the household level of those not working for the horticultural investment. The phenomenon of land acquisitions by private investments raises concerns about human rights violations, expropriation of the commons, and an unequal balance of power. Traditional users are excluded from decisions regarding large-scale investments that affect their well-being and livelihood and have to find a way to deal with the results of these decisions. There is an unbalanced power dynamic between investors and local land users (Dell’Angelo et al., 2017).

Land is needed for a large majority of the rural population in developing countries for livelihood and agricultural production; it includes a number of values that cannot be expressed in money. On the other hand, a price tag is attached to the land and the resources, and services are sold by private investors. The investments often take place in the presence of common ownership systems, where the land is governed by traditional and indigenous institutions. These institutions have evolved through centuries of practices, with the local community managing natural resources, unsustainable practices and over-exploitation. The sustainability of these practices becomes vulnerable to external pressure such as land acquisitions. In other words: land investors use the 'commons' of the locals, because land, nutrients and water are the three most important resource needs for producing horticultural crops. The investments often take place under three additional circumstances: the acquisition of land that was previously used by the local community in a traditional way, unclear properties and rights of use, and inequality of power. A global agricultural transition is happening, with agricultural production being a sign of profit at the expense of traditional land users (D’Odorico et al., 2017). Of course, this does not count for contract farmers, since these farmers are still using the same lands they have used before and even experience an increase in agricultural production because of the help companies offer. However, private companies are not only working together with contract farmers, but are also producing their own horticultural

crops with the help of employees. It is about these parts of agricultural land that the investment has taken over and that the non-participating local community cannot use anymore.

Not only is investing in land a problem, but also the fact that water is part of the same land and that investors are equally interested in water resources for the production of horticultural crops. Land acquisition for agricultural purposes is ultimately expressed in the development of irrigation systems. Land and water acquisitions are therefore connected to each other. In other words: owning land also means owning water (Dell'Angelo et al., 2017). Land acquisitions go hand in hand with water acquisitions, especially because companies like to invest in areas where there is enough water. The water-related effects of large-scale investments can be serious for traditional water users. Since the arrival of private companies in rural areas, canal water has been shared with the local community and vice versa. Farms irrigate their open fields all year round. Water is covered by groundwater that is extracted from wells, but also by canal water. Water for large-scale agricultural investments is needed for drip or spray irrigation, computer-controlled water control for maintaining a certain moisture content, and water recycling systems. Local farmers, on the other hand, use irrigation water during the dry season and, unlike horticultural businesses, are completely dependent on canal water, which they have to share with the companies. Irrigation water abstractions can reduce water at critical times, while the same water is used by local communities for fishing, transport, water supply and agricultural practices. This in turn influences the activities of the non-participating local community (Bossio et al., 2012).

Agricultural transition, thus, changes ownership and the ability of people who are not participating in the business to access and take advantage of the same natural resources, which ultimately has a negative impact on the livelihood and food security of the non-participating local community. Because land is given away to investors for the development of large-scale plantations, rather than being distributed to improve access to land and water of the local community as a whole, self-sufficiency of the non-participating locals is limited (D'Odorico et al., 2017). The majority of the local community in rural areas is self-sufficient, which causes households being unable to feed themselves, because the pieces of land on which they grow crops and on which their cattle grazes are often too small. Moreover, they are forced to settle in areas where the capacity for producing agriculture is minimal and they therefore have to compete against the investors for access to land and water (De Schutter, 2011). They do not only compete with companies but also with other locals for access to resources. Competing for productive assets has serious adverse consequences for the food security of the local population, because their ability to make use of these assets is seriously put in danger. This food vulnerability has been the reality for generations (Gudeta, 2012). A limited access to water and land leads to a limited food production, resulting in a decrease in food supply and an increase in food insecurity. These locals are direct victims of the increasing pressure on the land. Furthermore, the rural population is growing and the plots of land per household are becoming increasingly smaller. This pressure on the land affects the ability of the non-participating population to get a decent income from agriculture. Fishermen, shepherds, agro pastoralists, forest dwellers and farmers (not involved in contract farming) are confronted with the increasing scarcity of areas where their practices could be implemented for generations, negatively affecting their livelihood. Land is reduced to the productive elements it has to offer; it is treated as a commodity, while it means social status and a lifeline for the local community. Land commodification involves enormous risks in terms of livelihood (De Schutter, 2011). A livelihood is sustainable if it can cope with shocks, recover from it, retain capacities and resources, and offer opportunities for the next generation. Household livelihood is defined in terms of shelter, health, and food. In times of food insecurity, maintaining productive assets is a major concern for the locals that have lost their land. Large-scale investments lead to assets being alienated from the locals, which ultimately results in a loss of living, making their livelihood unsustainable (Maxwell & Wiebe, 1999).

Livelihood assets enclosure can be summarized as the process whereby previous land users lose rights to common land with the associated natural resources as a result of the use of agricultural land for the benefit of an investor. The most common factor in the development of enclosures is the lack of participation of traditional land users in the negotiations and the execution of land

transactions. User participation can be poor in three ways. Firstly, selective exclusion occurs when a group of land users is excluded by not being represented at all in land use negotiations. In this case, the consultation between investors and local land users is absent. Secondly, traditional land users can participate in negotiations directly or through representatives, but these negotiations may be skewed due to an uneven distribution of resources needed in negotiations such as legal knowledge, legal support, technical knowledge, language skills, financial resources, political positions and networks. Thirdly, a coalition between the State, investors, and local land users can result in the exclusion of outsiders. The local community can thus be confronted with an asymmetric participation if they have no prior knowledge of the land transactions. Compensation for community members is also something to consider. The non-participating locals are not offered alternative land after the investment has settled and they have lost the land that they have used. Even if land is compensated at a fair value, it does not replace the land. This type of compensation is therefore not sufficient to restore the livelihood and only leads to an increased number of landless locals (Gudeta, 2012).

For some of the local land users, their livelihoods are limited, while other land users - locals included in the business through employment and contract farming - are hardly negatively influenced or even benefit from the presence of the company; this results in selective marginalization (Oberlack et al., 2016). Where land acquisitions promote economic growth, they can also create contradictions between the expansion of economic activity and limit natural resources that the locals use (why this limited access in natural resources happens will be explained in the regional framework). Negative effects on the food security of the non-participating local community can eventually arise, while the participating locals do not experience this food insecurity (Dell'Angelo et al., 2017). For investments to provide a win-win situation, it should strengthen the food security status of the whole community (Shete, 2011).

2.8 Coping strategies

The non-participating local communities are trying to find ways to help combat the livelihood uncertainty that investments bring to them (Cochrane, 2011). Local land users must learn to cope with changes in the size and management of arable and grazing land, and tree cover. As for the tree cover, the natural tree cover decreases. The main reason for cutting down wooded land is arable land, which is associated with the presence of large-scale farms. In addition, there is an increasing demand from the companies for building timber. Crop-producing households experience reductions in arable land areas. One way to deal with this is to plant new arable land on bush or pasture; while some convert grassland into arable land, others do the opposite. However, with grazing land the problem of overgrazing is involved. Other ways are growing in former wheat growing areas and in the forest. Large-scale agriculture by private investors is forcing the non-participating local community to come up with new strategies, and to change the management policy for arable land. An example of this is changing the seed varieties that would better suit new growing areas. Another change in arable land management is the reduced use of irrigation, which has adverse effects on crop yield, crop production and crop diversity. The main reasons for changing farmland management practices are a lack of water, and the need to increase production through a reduction in the amount of land that locals can use. The lack of water is caused by the fact that river water is withdrawn by the companies, so that households have to stop irrigating their crops or switch to crops that need less water. A solution for this can be drip irrigation or digging a well to increase the water supply. Small farmers – who are not collaborating with the investors – also have to deal with the increase in insects and pests on their own land; this is due to the increased use of pesticides by the horticultural investments, which ensure that the vermin brings to the arable land of the surrounding small-scale farms. As a result, these small farmers will also have to use pesticides to reduce pests. The negative effects of large-scale agriculture mean that agricultural management is being changed and the locals have to find new productive assets to secure themselves of food (Zaehring et al., 2018).

Although there are various coping strategies for expropriated land, these strategies should not be considered as voluntary, but only as strategies in response to agricultural transition processes. Some of these strategies minimize the negative effects of large-scale agricultural investments, but

this does not mean that food security for households has improved. The main strategies that farmers generally use to improve their livelihood can be summarized in three categories: (1) protecting their remaining land through the use of plantations; (2) using remaining land or gaining access to new land for an alternative livelihood production; and (3) finding work outside the farm to supplement their income or as a complete alternative to farming, which is mainly the case if they have lost their land (Suhardiman et al., 2015).

Protecting the remaining land through plantations mainly takes place through a cooperation between farmers. The farmers learn from each other's success and experiences, and are encouraged to also start a specific plantation. Not only does cooperation take place through sharing information, but also through actually working together on the plantations. Farmers can be involved in both self-sustaining agriculture and a wide range of agricultural activities. In this way there is competition with the large-scale activities of companies. However, this competition can only take place if farmers have the right means for land preparation and the right means for production and transport. In addition, these farmers must also have the right connections with companies to whom they sell their products, and have the right political connections through which access to land can be established. Extensive plantations are a tactic to stop companies from conquering agricultural land. Because companies cannot remove all agricultural land at once, farmers can ensure that no further land take-up will take place. However, the company must agree to allow the farmers to continue their plantations. The company's approval can be explained by the lack of interest in providing compensation for the land and existing investments. In other words, if the company were to include the land in its plantation, compensation would have to take place. This obligation was largely felt when it came to farmers who are the most prosperous in the village and politically most connected. Political connections are used to negotiate and prevent land loss. Thus, people with capital and political connections can find ways to preserve their land (Suhardiman et al., 2015).

While large farmers are busy with large plantations to safeguard the land, many medium-sized and small farmers are switching to alternative production on leftover land. Farmers who have lost a large part of their land to companies are moving to producing a certain crop that offers payment security and reliability; that is, the crop is not only meant for home consumption, but also for some sale. In this case, farmers have private wells for household use that they use for production, and some also use groundwater for cultivation. In addition, some small farmers have shops at the nearby market. Medium-sized farmers are also explicitly acquiring new land for alternative production. After these farmers have lost land and farms, they sell their cattle and use the proceeds for new land acquisition. The idea of many of these farmers is that the profit from alternative production is invested in an even larger production for generating income. In contrast to medium-sized farmers, small farmers often rely entirely on their home consumption of basic food. Thus, instead of using the proceeds of agriculture to increase income for investment, small farmers mainly switch to production that generates income to preserve home consumption. Small farmers are mainly active in self-sufficient agriculture. This is because these farmers have no savings to invest in other farming activities and because they own a very small parcel, and they want to be sure that they can feed their families. Their lack of capital for investing is most evident from the fact that farmers relied on common natural resources (Suhardiman et al., 2015).

There is also a part of the non-participating local community that does not have the resources to change their production. Because these people are unable to directly or indirectly produce enough food for home consumption, they are forced to do paid work. In contrast to the above-mentioned group of small farmers who have been unable to save enough to invest in other types of agriculture, yet still rely on sufficient food for the household, there is also a group of farmers who lack additional resources such as capital, social connections and political connections, to continue their farming activities after they have lost their farmland to farms. In some cases, they combine activities on the farm and activities that do not take place on the farm to generate income and continue to produce for their own consumption; income outside the farm is the main source of income for this group. It also happens that these farmers have left agriculture altogether, either because they have found better employment opportunities compared to working on the small piece

of land that they now have after the establishment of companies, or because they have completely lost their land and have insufficient capital (Suhardiman et al., 2015).

There are also different ways in which families supplement their food supply. Livelihood activities such as gathering wild food from the forest, harvesting wood and selling fuel, beekeeping, hunting various wild animals, eating wild plants, and the production and management of livestock by allowing them to roam freely are important for the household's food system. The felling and burning of trees in connection with investment activities by companies will endanger such sources of livelihood. Large-scale investments, therefore, not only affect the agricultural activities of local farmers, but also alternative sources (Shete, 2011). The food security of the non-participating locals is, therefore, influenced in different ways.

3. Regional framework

3.1 Characteristics of Ethiopia

Ethiopia is the second most populous country on the African continent. The country is very diverse, both in terms of ethnicity and nature. For example, Ethiopia has more than 70 ethnic groups and the nature consists of highlands, lowlands and even deserts. The majority of the population lives in the highlands, while the lowlands are sparsely populated. The main reason for this is that malaria and other vector-borne diseases occur in the lowlands. Other reasons are related to geographical location, history and socio-economic explanations. About 80% of the population lives in only 37% of the total landmass, which is mainly in the developed part of the country; the remaining 20% lives in 63% of the total land area. Ethiopia is also known for the fact that the country is an agricultural nation. Agriculture contributes to over 40% of GDP and employment, and over 80% of exports. The highlands consist of mixed farming, such as grain and livestock; pastoral production is prevalent in the lowlands because of natural vegetation. As for the poverty level in the country, it is high. Ethiopia was ranked 174th out of 187 in terms of the Human Development Index in 2011. Millions of Ethiopians depend on food aid. One bright spot, however, is that the Ethiopian economy has become one of the fastest growing economies in the world in recent years, as evidenced by the many private investments taking place in the country (Berhanu & Poulton, 2014).

3.2 Horticulture in Ethiopia and its success

The horticultural sector has become enormously popular in recent years. The sector consists of fruit, vegetables, flowers, herbs and spices. There are more than 130 horticultural investments, consisting of local investors, foreign investors and joint ventures. Flower farms cover at least 1.426 hectares, while fruit and vegetables contain at least 11.371 hectares. The sector is the fifth largest foreign revenue generator in Ethiopia. In terms of flowers, Ethiopia is the fourth largest non-EU exporter in this area and the second largest African flower exporter. The major part of flower production consists of roses, and Ethiopia is known for its high quality. In addition, a number of farms are busy with a variety of other types of flowers, such as gypsophila, hypericum, limonium, chrysanthemum, carnations, static plants, potted plants and summer flowers. In terms of fruit, the country has a long history of producing fruit in a traditional way for both home consumption and export. The main fruits that are produced are mangoes, bananas, papaya, avocados, citrus fruits, pineapples, strawberries, grapes, passion fruits, pears, and plums. The vegetables grown in Ethiopia are green beans, snow peas, carrot, kale, cabbage, broccoli, asparagus, cherry tomatoes, beet root, cauliflower, eggplant, cucumber, onion and garlic. The main spices are ginger, hot pepper, fenugreek, turmeric, coriander, cumin, cardamom and black pepper. A minimum of 122.700 hectares is used for the herbs (The Ethiopian Messenger, 2017).

Table 1: Total production (tons per hectare) of major vegetable crops in Ethiopia between 2004-2013

Crop	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	% increase (2004-2013)
Kale	213,6	262,5	180,8	159,2	238,4	281,6	274,2	331,6	323,2	371	173,7
Garlic	135,4	196,7	107,2	68,3	103,5	156	179,7	128,4	124	222,5	164,4
Onion	216,7	229,7	175,9	178,5	175,1	148,9	169,3	236,9	328,2	219,2	101,2
Cabbage	8,6	15,2	12,9	10,1	11,8	24,1	20,4	19,5	43,5	23,2	270,8
Beet root	14,1	16,5	16,3	14,4	16,9	20,1	10,1	14,4	24,5	16,8	119,5
Carrot	10	17,9	6,9	6,7	Na	13,5	18,2	12,3	13,6	5,1	50,9

Source: Mengistu (2017)

Table 2: Total production (tons per hectare) of major fruit crops in Ethiopia between 2013-2018

Crops	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Avocados	18	54	54	65	81
Bananas	340	478	440	538	494
Guavas	1	4	2	4	3
Lemons	5	8	7	8	8
Mangoes	72	91	100	105	105
Oranges	31	31	28	21	31
Papayas	32	40	48	50	54
Pineapple	0,5	0,4	0,3	1	1

Source: Foreign Agricultural Service (2018)

However, Ethiopia does not yet use the full potential of irrigable land on which fruit and vegetables can be produced, which is an amount of 3.7 million hectares. In a country like Ethiopia, where people live mainly from grains, fruits and vegetables can be a very important source of vitamins, minerals and proteins, as these are the elements that the majority of the population lacks. Ethiopians consume less than a quarter of the recommended fruit and vegetable consumption; this contributes to the public health problem. Increasing horticultural production for the domestic market is therefore necessary. In addition, there is an increasing demand for fruit and vegetables intended for export. Ethiopia is strategically positioned to export fresh produce to the Middle East, Europe and other African countries. Horticultural export has therefore risen enormously, but is not yet where it should be. The horticultural sector is not sufficiently developed, because it is not able to provide sufficient food to the people and generate sufficient income from exports. Agriculture is still dominated by small-scale farmers who are not organized and produce low-quality products. In addition, production is characterized by low input, poor management, pests and diseases, harvest losses, uncertain markets and poor organization. To improve the situation, the government has opened the doors to private investment, which has led to the emergence of companies. Private horticultural companies are focused on production for local consumption and export. The government of Ethiopia has also drawn up a five-year plan to transform small-scale horticultural production into large-scale production, whereby the production of fruit and vegetables must be increased, and as many hectares of land as possible must be used. This goal cannot be achieved by existing traditional horticulture, and it must make way for an intensive and privatized production system (Mengistu, 2017).

The goal of the government's horticultural strategy can be achieved, because the Ethiopian horticultural sector has enormous potential for success and is already becoming successful. There are a couple of reasons for this. Firstly, this success can largely be explained by the Ethiopian marketing system. Most fruits and vegetables produced in Ethiopia are consumed locally. The production takes place both on a large scale by private investors and on a small scale by small farmers. After the harvest, the fruit and vegetables are transported to local market centers, and exported mainly to Europe and the Middle East. Flowers, on the other hand, only have their market in Europe. Furthermore, there are various participants involved in the marketing process, such as input suppliers, producers, wholesalers, processors, transporters, retailers and consumers. Producers are important participants in the supply chain, because their job is to ensure that goods are available for transaction. Traders are involved in purchases and transport arrangements, and selling in markets or distribution points. They go along the farms and buy horticultural products; sometimes they are even involved in the harvest. They also determine the price they want to buy from the farmers. Within the marketing process, traders are the most powerful participants because they determine the price on the market. The most important buyers of traders are retailers, institutions and processors. Transporters facilitate the movement of the goods from the production point to the consumption point. Suitable means of transport are required for this, both for the relocation to the local market and abroad. Bicycles and motorcycles are used from village to commercial centers. Large-scale commercial growers use trucks to transport the products to the airport, from where the products are brought to the final destination. Transporters therefore play an important role in the field of distribution. Retailers store very small quantities of the product because of the high costs and the limited demand from consumers. The most important buyers of retailers are individual households (Ahmed, 2007). The fact that all these participants are involved in the marketing system of Ethiopia determines the success of the horticultural sector.

Another important source of success is that Ethiopia has many natural resources, and water is one of them. This gives the country great potential to attract private investors. The land also has a huge arable land, and therefore a huge potential for growing a large variety of crops. However, Ethiopia itself uses only 2% of its water and a quarter of the potential arable land (Woldemeskel, 2008); private investments take advantage of this, especially of the available water resources. In the States of Oromia, Dire Dawa and Harari, irrigation is used to supplement horticultural production during dry seasons. The amount of water required for irrigation depends on the stage of crop growth, the depth of the roots and the capacity of the soil. Fruit and vegetables must regularly receive sufficient water in the period between flowering and harvest. The amount of water required for irrigation also depends on the land size; a large area requires more water for irrigation than small areas on land. Anyway, companies invest in irrigation systems. In Ethiopia irrigation water can be obtained from various sources, including boreholes, river, ponds and lakes. An agricultural development strategy is also to harvest rainwater by installing ponds. Boreholes and pumps are generally the most used irrigation voices, followed by sprinklers. Because Ethiopia is rich in water resources, irrigation is made possible and the country has pleasant conditions for horticultural investments. Other favorable natural conditions that Ethiopia offers is the texture of the soil, the altitude and the temperature that are suitable for horticultural activities (Emana & Gebremedhin, 2007).

3.3 Research area

The biggest State of Ethiopia in terms of population number and how big the area is, is the regional state of Oromia. This state consists of land that is fertile and suitable for farming. Furthermore, Oromia is rich in natural resources such as water, minerals and livestock. These characteristics are the main reason why private agricultural companies are interested in establishing their large-scale farms in this particular state; investors use about 1.319.214 hectares of land for agricultural production with a domestic and foreign destination. In Ethiopia, 51.2% of the total crop production and 44% of the total amount of livestock is generated by Oromia (Tura, 2018). Debre Zeit and its rural areas are an example of a city within this State where there is an high concentration on private

agricultural businesses. Not only is the presence of natural resources the reason why a lot of companies prefer Debre Zeit as the location for their large-scale farms; the development of this area also plays a role. The development of Debre Zeit is expressed in a couple of ways: (1) the city consists the required sources of technical, research and business expertise; (2) it is convenient in terms of logistics; (3) it is possible to purchase raw materials, processing infrastructure and packaging; (4) the city is connected to other areas – including the capital – because of a well-developed infrastructure, which facilitates transport; and (5) it is close to its clients (Brethenoux et al., 2012). On the basis of these criteria, Debre Zeit is one of the best locations in Ethiopia for agricultural investments.

Figure 2: Map of Debre Zeit, Ethiopia



Source: Parisotto (nd)

3.4 Land rights in Oromia

To understand how it is possible that rural locals who are not involved in the horticultural businesses experience a limited access in natural resources as a consequence of land acquisitions by private investors, it is necessary to elaborate on Ethiopia's law and practices regarding land rights with an emphasis on the State of Oromia – since this is the region where the fieldwork takes place. There are a couple of ways in which the existing land laws and practices lead to exclusion and expropriation, which will be elaborated in this section. These laws and practices apply to people from all regions in Ethiopia, but have the most negative impact on the people in Oromia, because most of the private agricultural companies in Ethiopia have established in this particular state (Tura, 2018).

Ethiopia has retained state (public) ownership of land since 1975. Since this law was enacted, the land has been jointly owned by the Ethiopian government. However, this does not mean that small farmers, shepherds and private investors cannot make use of the land. Private investors have the right to use the land on the basis of payment arrangements. Farmers and shepherds, on the other hand, can use the land free of charge, have the right not to be deprived of their possessions, and may use the land indefinitely. Farmers and shepherds are allowed to use the land forever, unless expropriation by the government takes place (Tura, 2018).

What are then the causes of flawed expropriation laws and land grabbing in Ethiopia? The answer is the political ideology of the ruling party and the state ownership of the land. First, the creation and enforcement of land laws are influenced by the ruling political party: the EPRDF. This

party is creating such a political and economic structure that is associated with authoritarianism; it uses the law and policies to achieve its political and economic hegemony in Ethiopia. Second, the ideology of the ruling party plays a role; for it has contributed to the expropriation of enormous land of small farmers and shepherds. According to the EPRDF, poverty is a threat to Ethiopia's economic development. The party aims to fight poverty through a rapid mobilization of natural, human and financial resources. The idea behind this is that the expropriation of agricultural land and the transfer of this land to private investors will transform the national economy in a positive way. However, these policies and associated practices are detrimental to the livelihoods - in particular food security, the environment and human rights - of the local population. Third, state ownership of land gives the ruling party too much power to control land users. The government considers the land to be its property and implements laws in ways that suit the plans of the government the best (Tura, 2018).

The following parts analyze Ethiopia's legal and institutional frameworks regarding land issues, which facilitate land expropriation and cause marginalization in Oromia. However, the laws discussed here have not been adopted specifically for the people of Oromia, and are also applied in other regions of Ethiopia. First, Oromia's legislative and administrative powers on land and other natural resources cause problems for the rural locals. Ethiopia has adopted an ethnic federalism since 1995 that consists of a federal government and nine regional members of the federation. The federal and regional states have legislative, executive and judicial powers. Both levels of government must respect each other's competence. The federal government is empowered to enact laws for the use and conservation of land and other natural resources. The regional states have the power to manage land and other natural resources in accordance with the federal government. The aim is to create an economic community, by retaining legislative powers with the federal government and administrative powers with regional states. However, the problem that arises here is that a lack of legislative competence at the regional level regarding the use of natural resources limits the ability to protect the rights of local peoples. Oromia in particular is facing challenges to protect smallholders from land acquisitions. The regional states are unable to implement laws regarding land issues that violate federal land laws (Tura, 2018). Because of this, the ability to solve the problem of expropriation and marginalization lies in the hand of the federal government, making the regional states unable to do anything about it.

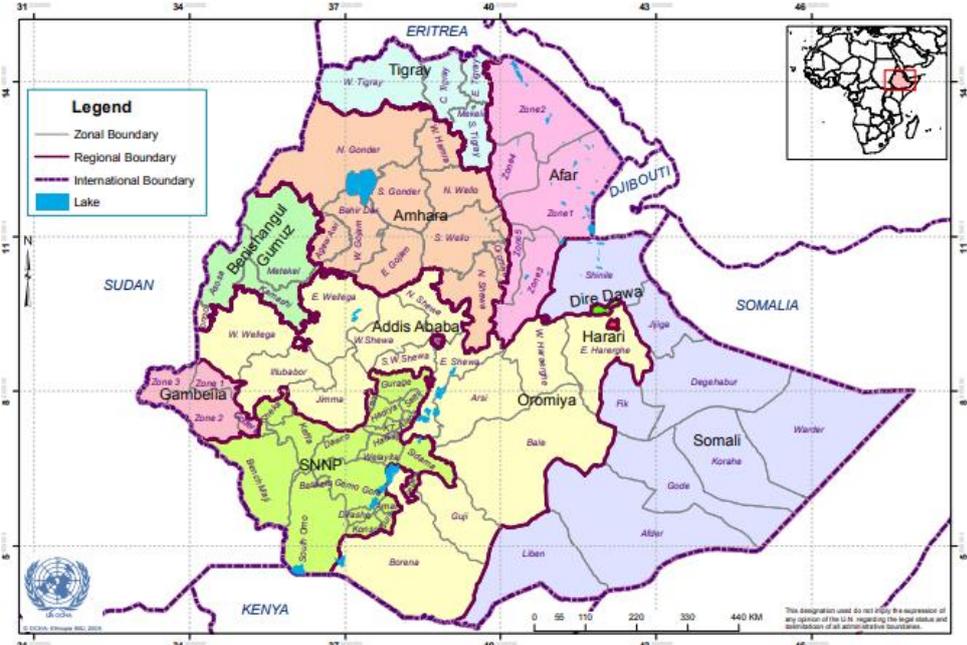
The second problem within the Ethiopian legal and institutional framework is the fact that all land in Ethiopia is jointly owned by the state and its peoples. The constitution states that the land will not be sold or subject to any other medium of exchange. What is not clear, however, is whether the terms 'state' and 'peoples' mean regional states (such as the Oromia State) and ethnic groups (such as the Oromo people). Using the term 'common property', it appears that the constitution gives all Ethiopian peoples the right to own land. It is unclear why it is then that the federal government in Oromia and other states would have natural resources, while there is a local government (the State of Oromia) responsible for affairs within the state. The regional states can only manage natural resources in agreement with the federal government (Tura, 2018). This means that in reality natural resources are not considered as common property.

Third, Ethiopia has incorporated self-determination in its constitution, which by definition stands for the right of people to have access to natural resources. Moreover, by no means should people be robbed of these sources. This gives the Oromo people the right to own, control, manage and use land and other natural resources. However, there are restrictions on the exercise of the right to self-determination by the Oromo people. First, the constitution only emphasizes the political, social and cultural sides of self-determination, and remains silent on the economic element: the content of which refers to a people's right to property, control and use of land and other natural resources. The exclusion of this has a negative impact on the possession and use of natural resources by peoples. It limits their right to pursue economic development, limits their ability to use resources, and it violates their right not to be robbed of this. Secondly, there is a lack of judicial independence in Ethiopia, which ensures that human rights are enforced judicially. The result of this is that the ruling party expropriates smallholders from their land under the guise of private investments (Tura, 2018).

Fourth, there is a problem with the way in which the Ethiopian law presents human rights. International law recognizes the rights of indigenous people. Moreover, the United Nations adopted in 2007 a declaration on these rights, which forbids the states to expel indigenous people from their lands and other natural resources without prior consent, consent and agreement on the compensation they get. Likewise, the Ethiopian constitution explicitly recognizes the right of farmers and shepherds not to be expelled from their land. In practice, however, it is a different story: the rights of farmers and shepherds are not respected. The reason it is different in practice from how it is presented in the constitution is because Ethiopia has not ratified the international law of indigenous peoples. In addition, the UN declaration on the rights of these peoples is not binding on Ethiopia (Tura, 2018).

And last but not least, Ethiopian law defines 'public purposes' broadly, namely as the importance of peoples to benefit directly or indirectly from the use of land and to realize socio-economic development. When a government decides to take private property rights to promote public ends, such as building common goods or stimulating private investment, it must ensure that the purpose for which it is held is actually beneficial to all. In addition, just compensation must have taken place in advance. When expropriation is exercised, it is important that socio-economic development is experienced by all peoples. Legal expropriation must have taken place in a just manner. However, the vague and broad definition of 'public purpose' allows the government to expropriate and possess land without boundaries. It is also unclear what a public purpose is according to the law. Despite the constitutional recognition of the rights of farmers and shepherds to use land free of charge and the right to protection against eviction, the constitution appears to exclude the right to fair compensation. It seems that the right to compensation is limited only to the expropriation of 'private property'; land does not constitute private property under the Ethiopian constitution, and farmers and shepherds are therefore not sufficiently compensated. Farmers and shepherds can receive compensation for private property located on the land and for any permanent improvement made to the land. In addition, a farmer whose land has been expropriated can receive compensation for moving his/her farming activities somewhere else (Tura, 2018). Thus, farmers' right to use the land indefinitely is not true in practice.

Figure 3: Map of administrative regions, Ethiopia



Source: Lie & Mesfin (2018)

Thus, deficits and violations of land rights standards have been identified in Ethiopia in general and in the State of Oromia in particular. Ethiopia designs land laws that are vague and incomplete. For example, it is unclear whether regional states and local peoples have the right to own the land and other natural resources. The right of self-determination is also incomplete, as it excludes the economic aspect. In addition, only the federal government is allowed to enact laws regulating the use of land and other natural resources in the country, and the regional states act only in accordance with the federal government. The State of Oromia and other regional states do not have the authority to pass and implement laws if they violate federal laws. Furthermore, the rights of farmers and shepherds as regards protection against expropriation are not respected; on the contrary, eviction processes are being legalized under the pretext of promoting commercial agriculture (Tura, 2018).

3.5 Host organizations

An organization that is interested in this research topic and with which a collaboration took place is LANDac. The Netherlands Land Academy works on issues related to land governance, in order to establish equitable development. LANDac focuses on what the impacts are of large-scale land investments, including investments in agricultural lands for the production of food and biofuels. The organization ensures that human well-being is at the center of these investments, on the basis of a participatory approach and the involvement of different stakeholders. One group of important stakeholders that LANDac works with includes academic researchers (LANDac, 2019). Since the research topic of this paper is related to the impact of large-scale agricultural investments on the livelihood of rural communities, and LANDac is particularly interested in making sure that the benefits of land deals are equally spread, a collaboration is possible. Another organization with which a collaboration took place is the St Mary's University in Addis Ababa, Ethiopia. The university is an environment of academics that are doing research. In addition, since my topic is related to the negative consequences of agricultural transformations that are happening in Ethiopian rural areas, and the aim is to make a positive contribution to solving this problem, a collaboration with the university was also possible.

4. Methodology

This section presents the steps of the research methodology. It starts with the main research question and sub questions, the conceptual model, the operationalization, methods of data collection, as well as the expected results, positionality as researcher, limitations within this research, and collaborations that have taken place.

4.1 Research questions

The literature made clear that private horticultural businesses are affecting food security on national scale and local scale. On national scale large-scale farming leads to an increase in food availability. On local scale the results are contradictory: employees and contract farmers experience an increased access to food, while villagers who are not part of the investment experience limited resource access. However, from the literature it is still not fully elaborated how this limited access in land and water has an impact on the food security of the non-participating locals. This thesis tries to fill this gap in knowledge. The research is guided by the main research question:

What kind of resource utilization changes does a private horticultural investment trigger and how is this affecting the food security status of the local community that does not participate in the project?

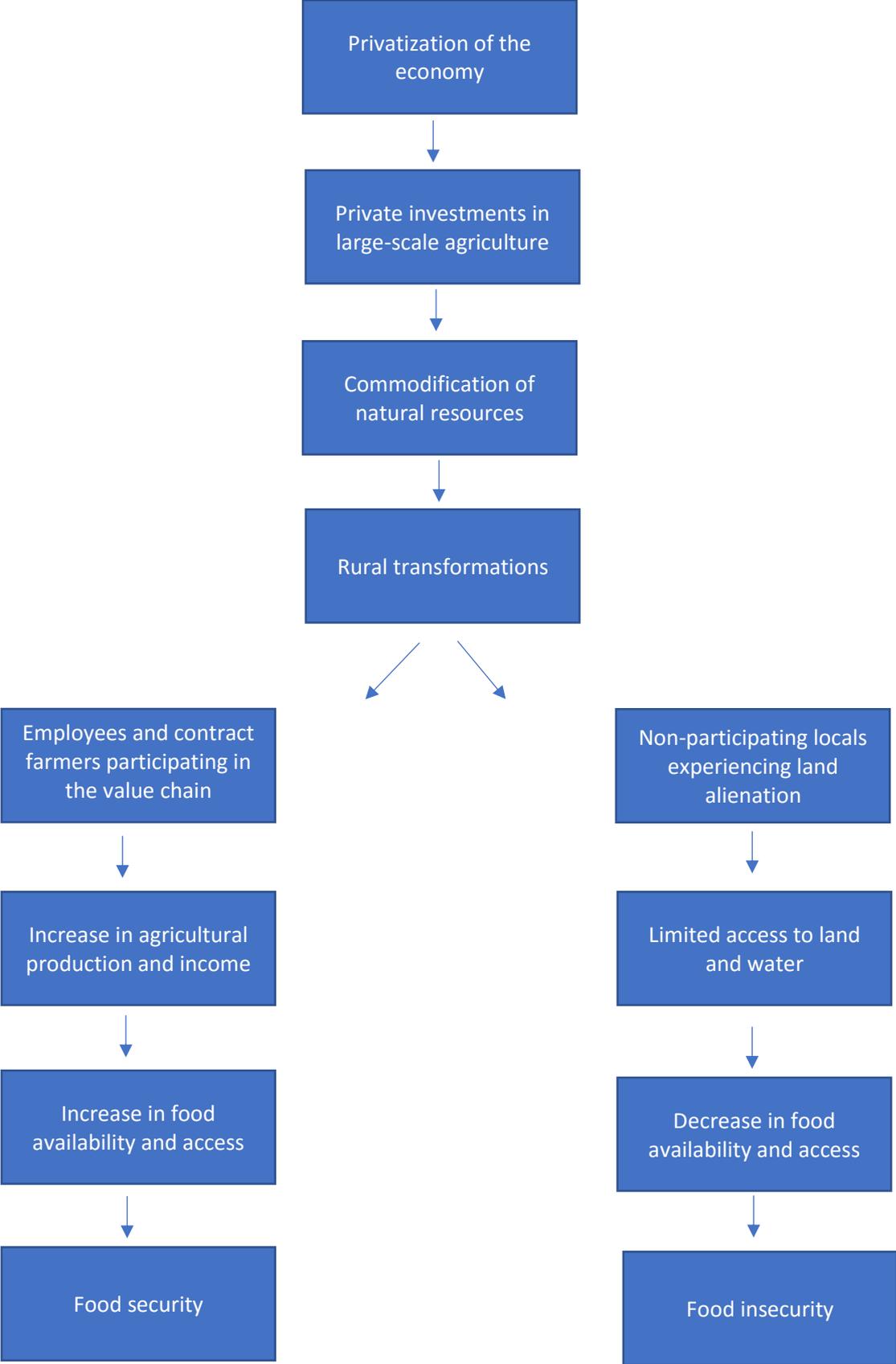
To address this main question, the research is divided in sub-questions:

- (1) What kind of resource utilization changes does a private horticultural investment trigger for the people who do not take part in the investment project?
- (2) How is this resource utilization change affecting the access to natural resources of the non-participating locals?
- (3) What are the consequences of the limited access to natural resources for the food supply of the non-participating locals?
- (4) How do the non-participating locals get access to food that is available on the domestic market, and in general?

4.2 Conceptual model

The conceptual model, see figure 4 on the next page, presents the main concepts of the theoretical framework. The model shows what the relationship is between the establishment of private horticultural companies, the resource use and the food supply of the rural locals who are not involved in the business. At the same time, the model shows a contrast, namely the consequences for the food security of the ones who are involved.

Figure 4: conceptual model of theoretical framework



4.3 Operationalization

One of the most important concepts of the research question is food security. There are a number of indicators to measure food security for households. For this qualitative research, a selection of three indicators is made. Firstly, the availability of food is an important aspect. This availability will be measured on the basis of sufficient quantities of food of the right quality. Secondly, food security is measured by access to food, where it is important that the non-participating locals have access to the proper means by which they can acquire food in order to have suitable food. And thirdly, stability is important; a population, household or individual must have access to sufficient food at all times to experience food security. There must not be a risk of losing food (Joosten et al., 2015). These three indicators will be applied at the household level of the non-participating locals and will be asked during the interviews and questionnaires. Questions about availability, access and stability will be the main focus of the interview and questionnaire.

Another concept that needs to be elaborated is resource utilization change. The resources that are meant in this context are natural resources, with the focus mainly on land and water. Utilization change stands for a change in the use of these resources for the non-participating locals, as a consequence of the establishment of the horticultural company. The intention is to find out, whether the local community needed to adapt to large-scale agriculture in terms of using land and water, and what strategies they use to assure themselves of this use. In other words: what water and land-related changes has the company caused for the non-participating local community, and which ways has the non-participating local community found to deal with these changes? Questions about resource utilization change will be linked to the concept of food security: how has this change affected the food security of the non-participating locals? During the interviews and questionnaires, attention will be paid to these questions in order to get a clear picture of rural transformations.

The third concept that needs to be explained is the domestic market. By domestic market it is meant the markets nearby the living area/village of the local community; this includes the markets that can be found in the city of Debre Zeit. During the interviews and questionnaires, non-participants will be asked whether they have access to horticultural crops that can be found on these markets. The definition of food access – which is explained earlier in this section – will be applied for this question. In other words: are the villagers able to purchase products on the market, and if so, how are they able to do that?

The last important concept is non-participating locals. This group of locals has a couple of characteristics, on which has been paid attention during participant recruitment. First of all, this group is not employed by the horticultural company and also not collaborating with the company through contract farming. The main focus during the selection of participants was on these two criteria. Secondly, the non-participating locals are located in a rural area, nearby the city of Debre Zeit. Questions related to the concepts of food security, domestic market and resource utilization were only asked to the locals that do not participate in the horticultural business. Only in this way, the results can be representative of the target population.

4.4 Methods, techniques and sampling strategy

As is already mentioned, the study population consists of the group that is not participating in the horticultural investment. This group is able to provide the most relevant and detailed information on the research topic. The group that is chosen to be participants, is defined in the operationalization. There are certain additional criteria for segmenting the study population. Demographic criteria are as following: all gender groups are included; the profession of the villagers is farming; and the participants are formal land users and older than 40 years, because this group has experienced rural transformations. Also, village administrators were interviewed to get general information. When it comes to the geographic criterium, the setting of the field work is in the Dalota village: a rural village close to the city of Debre Zeit where a lot of private horticultural companies are established, which is also the reason why this specific location is chosen as research area.

Now comes the most challenging part of the research: participant recruitment. A couple of strategies for recruiting participant have been used, so that shortcomings of one method could be

offset by complementing it with another method. The first strategy is the use of gatekeepers; they have a recognized role in the local community, they have knowledge about the locals, and they can encourage them to participate in the research (Hennink et al., 2011). The gatekeeper that was used for this research is a formal local animal doctor who knows the rural area and the city very well. He worked for the Agricultural Research Centre in the city of Debre Zeit for several years. This person was found by the taxi driver, because the driver needed help with finding the field work location. Having a formal doctor as a gatekeeper provided me access to the city administrators who explained to me where I can find the village administrators of the Dalota village. The village administrators then helped me find the right farmers to talk to, namely the ones who have experienced land loss. This is a perfect example of the snowball recruitment (Hennink et al., 2011). Having one of the village administrators and the animal doctor with me during the search for farmers helped me get access to these people, because villagers were willing to talk to these men. Another way of using the snowball recruitment strategy was to ask a local who has already participated in the research whether he/she knows other locals in the community who can participate in the research. After talking to this referred person, the same question was asked, namely whether this participant knows anyone else who can be useful for the research. This process led to an increase in the amount of participants. The benefit of this strategy is that a familiar person – namely the one who has already been recruited – is linked to potential participants, and therefore giving them the trust and confidence to participate (Hennink et al., 2011). An important thing for the recruitment process that I focused on is to ask specifically whether the locals are contract farmers or employees. When this was the case, the searching process continued till the group of non-participants was found. Regarding the language barrier, the formal doctor helped me out, since he knows the local language of Debre Zeit and English as well.

The first part of collecting data was done on the basis of in-depth interviews and surveys. Because individual experiences of the locals about their livelihood, and specifically resource utilization changes and food security, are central in this research, interviews can provide the right information. This method also make the context clear in which people live, such as the economic or the socio-cultural context. Furthermore, interviewees got a chance to tell their story and present their background and identity characteristics, which helped with the interpretation of the story. Another method of interviewing that has been used for data collection is focus group discussions; this is an interactive discussion between a couple of participants. The goal was to create an environment in which locals that belong to the same group can express their opinions. In this way, a lot of data can be collected in a short time. The third way of collecting data in the field was through questionnaires, because surveys can help in making general conclusions (Hennink et al., 2011). A total of seven respondents have given the information needed to give a direction in the search for secondary data: five farmers and two village administrators.

The second part of collecting data was done on the basis of literature. This is because of the corona pandemic that caused the fieldwork to be interrupted. This meant that primary data had to be supplemented by secondary data. This was done in such a way that everything that was said by the respondents was elaborated through literature. The literature has also been applied in such a way that it fits in with the research questions.

4.5 Expected results

The expectations of the results before the start of the field work were the same as the theoretical framework has presented. This means that it was expected that the livelihood of the people that do not participate in the horticultural investment is negatively influenced. The competition for natural resources between locals and investors, and the negative consequences for the food security of the local population because their ability to feed themselves is put in danger, due to limited access to land and water, and therefore a limited access to the production of food, were expected to be present during the research.

4.6 Positionality as researcher

The aim was to not create an environment in which it seems as if the locals were only being used for the research. Of course, getting the right information was the purpose of the interviews and surveys, but the aim was also to show genuine interest in the stories of the participants, and to make a change in case there needs to be made change in order to improve livelihoods. The purpose was also to not create a journalistic sphere. The best way to do this was to put a microphone on the clothes of the translator, so that the voice recorder was not that distracting and creating uncomfortableness during the interview. Also, another strategy to create a non-journalistic sphere was to sit down with the locals and make a conversation, instead of standing and strictly asking questions. It was mentioned to the locals that the results will be shared with the university, however that everyone will stay anonymous. In this way, the participants had a certain trust in the research and their involvement in it. Also, it was important to stay neutral during the research process, and to not do anything behind the city and village administrators' backs.

4.7 Limitations

There were some limitations that showed up. Firstly, this happened during the participant recruitment. Since the topic of this research is sensitive, it was challenging to get permission from the city administrators to go to the village administrators of the Dalota village. When I finally received permission from the city administrators – due to the help of my translator – a new challenge came up, namely to convince the village administrators to do my research in the village; luckily, this happened. Talking to the locals who have experienced resource utilization change was also not without ease. It was noticeable that the non-participating locals were afraid that the company would find out that they spoke negatively. Furthermore, since the interview questions were mainly about the livelihoods of the participants, this created uncomfortableness, causing them not to talk about it in detail. Another limitation was having the right translations from the translator: even though I have found a man who knows the English language well and the language of the rural community, it was obvious that the whole conversation was translated through summarizing it, instead of translating all the details of the participant's story. Also, since I could not do my research without a translator, it was a challenge to take the lead during the conversations with the villagers. Namely, the whole interview was in the hands of the translator and it was therefore difficult to direct the interview in the way that is suitable for the research.

4.8 Co-creation plan

During my field work, I worked together with St Mary's University, which is established in Addis Ababa, Ethiopia. The collaboration was expressed through me working together with a researcher from the St Mary' University, called Senait Getahun. She was my local supervisor in Ethiopia. This researcher was in the Netherlands during my period of writing the pre-field research proposal, and was involved in the process of specifying my thesis theme from the beginning. The reason why she was involved with my research, is because she is doing her PhD about food security in the context of large-scale agricultural investments, also. She was helping me out with deciding on a concrete research, by giving this topic as an example. Together, we then decided that this will be the definite direction of my research. Most of the communication was happening online, but we also set down together a couple of times. During these face-to-face meetings, she said to me that she will be giving me practical tips about finding the right translator for the rural area around Debre Zeit, since she does not know the language of this region. Also, she gave me practical tips regarding transport to the local community/village. In Addis Ababa, she gave me a tour on the university and made sure I could use the library any time I wanted to. Moreover, she was there for me when I needed more practical tips regarding my field work.

Figure 5: St Mary's University, Addis Ababa



LANDac was also involved from the beginning of this research. One member of the organization was helping me with establishing contacts with horticultural companies in Ethiopia. However, this was unfortunately not a success. The fellow was not able to find a company that is welcoming students who are interested in this type of topic. The reason she was contacting horticultural investors, is because the thesis topic was still broad at the beginning of the course. It was not decided which group of people will be investigated. When this eventually was decided, the LANDac fellow was still trying to contact companies, because it seemed like an interesting experience to get to know the business model of a certain horticultural company. When she came to the conclusion that it is very difficult to convince the investors of my presence there, we did not consider this as a problem. That was the point when it was decided that I will be working as an independent researcher, which was an interesting challenge. Also, since my focus group were the locals who are not included in the investment through employment or contract farming, being an independent researcher was even better. Namely, the topic is sensitive and it could seem as if private horticultural companies are being criticized, which makes a collaboration difficult. Being independent on the field was, therefore, more effective, because there were no tensions.

5. The process of land transfer

This chapter explains the process of land transfer in the Dalota village, to find out what kind of resource utilization changes private horticultural companies trigger for the non-participating locals. The process consists of two important elements: consulting actors involved in this process, and compensating the ones who are giving up land.

5.1 Consultation

Consultation starts with private agricultural companies applying to the government that they want certain parcels of land to invest in and farm on, which happened about 15 years ago in the Dalota village. The government needs to give permission to the companies for this investment to happen. The next step is that the government then discusses with the farmers who have been farming on the land in which the companies are interested in, how much money they want as compensation, because the government will eventually pay the farmers. When the agreement has been made between the farmers and the government, the company also needs to get permission of the city administrator – because the Dalota village falls under the city, even though it is a rural area. The company then goes to the place where it wants to establish its farms. In this phase of the process, an agreement is being made with the village office and its administrators, and paperwork is being done. After all of the consultations have taken place and are finished, the last step of the process is the point of exchanging money. Money for every square meter is paid by the government to the farmers who are giving up the land on which they have been farming on.

An important step in the process of establishing the company in the village is the agreement between the government and the farmers. According to one of the village administrators, getting the farmers to agree on the establishment of the companies, has been the case in the Dalota village; this has also been confirmed by other respondents/farmers who have experienced land loss. This means that there was transparency to a certain extent during the land transfer. The process of land transfer was explained to the locals and how the land was going to be used; this happened when officials came to the smallholders' farms to talk and convince them. However, the villagers were informed about the investment, but were not given the right information; this is because the investors were not honest about how the locals would benefit or be affected by the investment. Namely, the investors made different types of commitments to the locals and were also mentioning that their interests would be protected; these promises were not kept by the investors – which will be elaborated in the section 'services and provisions' later on. This was also the reason why the locals of the Dalota village agreed on giving their agricultural land up for some compensation and were not protesting, because they were hoping to get benefits from the investments in the long term, as was told to them. Namely, farmers who gave up the land they have been using, were not only hoping for money in return, but also for the development of the village.

*“A lot of people were happy because of the hopes that they had for the development of this area.”
(Respondent #2 interviewed on 19.02.2020)*

The same was said by five of the farmers in the village: making a positive change in the village was also how they were convinced by the government and private companies to participate in giving land up. In other words: they had an expectation in their mind and they were convinced on the basis of this expectation. The government said that the investors would provide the community development in different ways: infrastructure, electricity and water. Anyone living in the rural area would benefit from these positive changes. Giving up the land they have been using was done for a higher goal and went beyond own interests. It would contribute to the general welfare of the whole community. Also, farmers were experiencing pressure from the rest of the community that already has decided to give their parcels of land up. So, farmers who have not done this yet were convinced by other

farmers who had. Even though there were farmers who were not enthusiastic about participating in giving land up, they were told to do this for the development of the community; this created pressure to follow the rest of the community.

A farmer explained how he was pressured:

“At first, I really was skeptical about the presence of the companies. When I heard that a lot of locals were asked by the government whether they are willing to give up their land, I knew what I was going to say when it would be my turn. I knew for sure that I would say no. I just immediately had a bad intuition about the problems that I would cause by giving my farm land up. But, unfortunately, I was convinced by everyone else in the community. They were saying to me that I will earn a lot of money by giving the land up. Also, they were pressuring me, because if I decided to not give my land, I would not have the community’s interests in mind. That is what they were saying to me. That I would be considered as selfish and not think of the development of the village. This really bothered me. I had to say yes. I was not comfortable with the fact that everyone in the community would see me as a selfish person. I was convinced, but against my will.” (Respondent #4 interviewed on 05.03.2020)

Another thing that the farmers mentioned is that there is minimal communication between the local community and the private horticultural companies in the village. The farmers are angry about the fact that the companies were communicative at the beginning of their presence in the village, because they wanted to convince the locals to cooperate, but when the companies succeeded in getting the land they desired, this communication – with its promises – completely stopped. While there was so-called transparency in the beginning, this transparency has now disappeared. The locals are not aware of the activities and plans of the companies anymore. They feel like the companies have gotten from the locals what they wanted from them and are now not putting an effort in being open with them anymore. Also, the locals feel abandoned by the investors, and, more importantly, fooled.

5.2 Compensation

Not everyone in the Dalota village gave up agricultural land to investors, because there are still areas where villagers farm for their livelihood. Also, there are farmers who still have some parcels of land left, after giving up huge parts of land to investors. Unfortunately, it was not possible during the fieldwork to find out how many farmers have lost their land. What is clear, is that the ones who have agreed to giving the parcels of land they have been using for farming purposes to the private companies, have received compensation for this loss; the compensation was received in the form of cash. According to the village administrator of the Dalota village, the farmers made an agreement with the government about the amount of cash they should receive as compensation. The payment was done per hectare: the average amount of money given per hectare land was 50 Birr rounded, which is not a lot (€1,21). The farmers and village administrators from the Dalota village could not give an explanation for why the government chose this price. If a farmer has given up more land than another farmer, this farmer would receive a higher compensation. At the time of agreement, the farmers considered this compensation adequate.

“I was happy with the payment I received. We made an agreement and the money was given to me. I was paid not more than 50 Birr per hectare land that I had. In total I had 6 hectares of land, so I received 300 Birr. At that time, which is about 15 years ago, I thought this was a lot of money. I was not thinking about the consequences of giving up land for this amount of money.” (Respondent #3 interviewed on 28.02.2020)

As time went by, the farmers did not consider the size of the compensation as sufficient to compensate the losses anymore. The reason why their minds were changed and why they are now

considering that they deserved more, is because the promises that the companies made at the beginning of their establishments, were not kept. No signs of development have occurred in the Dalota village. Farmers from this village agreed on a certain price for the land, because they thought that they would get something back for it in return, namely that the whole community would benefit from it. That is why the farmers now feel like they deserved more cash for compensation, because they gave a lot up for nothing in return. If they knew this would happen, they would have asked for a higher compensation, or would not have agreed at all on cooperating with the companies' desires. The fact that promises made by the investors were not kept, made the farmers feel like they were tricked and that their land has been expropriated for a small amount of money. The compensation received did not make up for the losses they experienced, because not only did they lose their land, but the community's welfare did not benefit from the presence of the investors.

"I am not content with the amount of money I got, because no development happened in my village. I have big regrets." (Respondent #3 interviewed on 28.02.2020)

Other critics that the locals have given regarding the compensation is the fact that the amount of cash that is now given to farmers who are giving their land up, is much higher than it was when the respondents have done this, namely twice higher: now the compensation is rounded 100 Birr per hectare. This means that multiple land acquisitions have taken place at different times at the Dalota village, and are still taking place now. Land acquisitions that are now taking place are done on the basis of higher compensations. There is a reason for this, namely that the Dalota village used to not be part of the city of Debre Zeit. This situation has changed and about two years ago this particular rural area has become part of the city. That is why the compensation has increased. So if an investor wants to buy a piece of land now, it is more expensive than it used to be, because the value of the land has increased. Location value is now part of the compensation and was not taken into consideration before. That is also why the amount of cash that the government gives to farmers is much higher now. Farmers who have given their land up before this increase in value find it unfair that their compensation is lower than the compensation received nowadays.

Under-compensation jeopardizes the livelihood of the locals. The money received is not enough to compensate what they have lost; it was mainly used to purchase food on the market in Debre Zeit, and, therefore, quickly ran out. The money was not enough to get access to other land by, for example, renting it. Not only is the loss of land risky for the households' food consumption – in the case of not being able to find other parcels of land to farm on – but indirect losses such as not being able to be involved in trade activities to earn a certain income are also not counted in the compensation price.

6. Locals' access to natural resources

The goal of this chapter is to explain how the transfer of land affects the villagers' access to natural resources, and what the consequences of the limited access to natural resources are for the food supply of the non-participating locals. Also, it will be made clear how villagers get access to food.

6.1 Land

In the Dalota village, there are a couple of private horticultural companies established, but not all of them have caused land alienation, since a lot of the companies are farming on land that the local community has not made use of. However, three horticultural companies are now farming on parcels that locals have been using for generations long: Yassin, Roshanara PLC and Rainbow. Even though there was an agreement made between the government and the non-participant locals about giving parcels of land up for compensation – meaning that the locals agreed on doing this – they now feel

like their access to agricultural land is limited, and therefore regret this decision. Some farmers gave all of their land up for investment, and some farmers kept some land for themselves. The village administrators gave no information about how much of the land is distributed to private companies or how many farmers have lost their land. What is clear, is how much land farmers have now: the average of landholding size is 6 hectares. Yet farmers experience a limited access to land as a consequence of the presence of horticultural businesses. This limited access is expressed in a couple of ways, which will be described below by elaborating the previous land uses, and is the cause for the loss of livelihood opportunities, because of the economic impacts land acquisitions have: losing land meant losing income and food production for the household.

Figure 6: Greenhouses of a private company, Dalota village



Before giving up land, one of the main ways the land was used was for the purpose of growing crops. Crops were grown for the household's food consumption, but also for sale to earn a certain amount of income and to be able to purchase other food products on the market. Common crops that were grown are teff, chickpeas, wheat, barley, vetch, sorghum, lentils, and maize. The production of crops is an important source of food in the rural area. A lot of the livelihood activities in the rural area evolve around arable farming. However, since parcels of land have been given to investors, difficulties occurred regarding the household's income and food consumption. The crop supply has since then reduced and caused food insecurity problems, because of a decline in crop production or having no crop production at all – in the case of giving up all the parcels of land.

One farmer explained his livelihood after he gave up land to investors:

“I gave a huge part of my land to the company. I still have some parcels left, but this is not a lot. The parcels of land that I still have are not providing enough room for growing the amount of crops that I used to grow when I still had all of my land, and are not enough to provide my household of enough food. After the land transfer, I experienced a huge decline in food production. I ended up in a situation where I had to purchase more food from the market or borrow food from my neighbors and family, otherwise my family would be hungry.” (Respondent #4 interviewed on 05.03.2020)

Because of this negative impact on crop production, some farmers chose to change the way they use land; land that was used for animals to graze on is now converted in crop land. This was the case for farmers who were not able to purchase food on the market or borrow food. The decline in grazing land, however, had its own consequences, which will be described below.

Figure 7: Crop land of a farmer, Dalota village



The other purpose of land for the local community is for animals to graze on. This is not only done on land that is meant for grazing purposes but also on cropland after the crops have been harvested. For the locals, losing land means also losing the ability to graze their livestock. Prior to the land transfers, grazing land was held in common by the local community. The land was important and was needed to feed the animals. After the transfer of land, a shortage of pasture arose in the village. This led to a couple of problems. First of all, because of a decline in pasture, there were some farmers who sold all of their cattle, which resulted in a price decline, because a lot of farmers were selling their animals at the same time, meaning that not a lot of profit could be made by this sale. Those farmers who did not want to sell their livestock came up with another solution, namely to convert crop land into grazing land (land use changes therefore either had a negative impact on crop production or on cattle production); however, this resulted in a decline in crop production, which was also not beneficial for the food supply. Not only was land being converted, but also animals. There were some farmers who exchanged animals that graze a lot – like cows and oxen – for animals that do not require much pasture – like sheep and goats. The second problem of the decline in grazing areas is the fact that farmers are confronted with the death of their animals due to hunger.

The loss of communal grazing land had a negative impact on the livelihood of the non-participant locals, because of a loss in productivity. A decline in the livestock holding due to a shortage of grazing areas leads also to a decline in animal products. For example, milk and dairy are important sources of food and income in the Dalota village, but the decline in the amount of cows owned has led to a decline in these products, which had a negative impact on households' food supply. Also, in the Dalota village, producing crops is another important farming activity; oxen are needed for draft power and a decline in oxen means a decline in crop production. These are examples of how grazing land means a loss in productivity because of reduced cattle and crop production, and with that a loss in income and food. Shete & Rutten (2015) have made a comparison between the food consumption of households that are affected by land acquisitions – in terms of land loss – and households that are not: the monthly consumption for the affected once declined after land loss and was lower compared to the ones not affected. This indicates that having no income through selling crops and/or animal products means purchasing less food on the market. So, not only does less land mean less food for own consumption, but also less food available for trading activities to earn money to be able to purchase food.

Having animals is crucial for a sustainable livelihood in rural areas. Besides the fact that having cattle also means having a stable food supply, cattle also plays an important role in times of drought: having animal products makes it possible to cope with food insecurity. The fact that animal products can serve as a cash source is beneficial in the case of crop failure, because crops can still be purchased on the market by selling the products. Farmers' livelihood, therefore, depends on livestock. In rural areas where there is a long dry season, like the rural area of Debre Zeit, it is good to have enough livestock so that it can be served as a source of food and income during times when crop farming is not an option. That is why the decline in pasture is even more problematic.

"We have a lot of problem with drought here. It sometimes happens that I have not a lot of crops, because the drought simply did not allow the harvest to be successful. At those times it is very important that I have my animals." (Respondent #7 interviewed on 11.03.2020)

Because of lost land opportunities, and the food insecurity issues that exist as a result of this, farmers in the Dalota village were forced to make a complete change in their previous way of making use of agricultural land, to compensate this loss. This land utilization change will be elaborated later on (in 'compensating land loss: informal land transactions').

Figure 8: Former grazing land, Dalota village



6.2 Water

When it comes to the use of water in the Dalota village, the locals have mentioned that the companies have not limited their access to this natural resource. For generations, locals have been getting water for irrigation purposes out of a small pond in the village. Also, their cattle drinks from it. The whole community uses the same water source, because there aren't any other sources available in the rural area. This has always been a problem for farmers. In addition, the pond does not comprise a lot of water and in times of drought the amount of water is reduced to a minimum, which causes harvest problems. Luckily, the private companies that are established in the village do not use this pond for irrigation, and use ground water instead. Because investors do not use the same water source as the local community, the farmers have not experienced a direct change in their use of irrigation water. However, there may well be an indirect link between the use of ground water by investors and the amount of irrigation water available for villagers on the long term: reducing

ground water supplies will possibly negatively affect water levels in the pond, and may also result in aridification of farm lands – also of smallholders. The respondents have not noticed that the water level in the pond has reduced since the presence of the companies, but this does not mean that this will not happen in the future. If this happens, local farmers will not have enough water available for their agricultural production. As for water for drinking purposes, it is bought in the city of Debre Zeit, since the rural area has no source of drinking water. The only source of water in the village is the pond, but this water is not safe to drink. This situation has not changed since the presence of the companies and was not different before the investors came.

7. Compensating land loss: informal land transactions

Farmers in the Dalota village who have given agricultural land to a company in return for some compensation, needed to find ways to compensate this loss of land. In the village, the main source of income comes from farming activities, because there are no other employment opportunities in the rural area. Because they needed to continue farming in order to secure themselves of food, they found a new way to get access to land, namely through participating in the land market, which is the main way of compensating land loss in the village. This chapter presents the change in land utilization that has happened to locals who gave up their land to investors, namely the use of informally transacted land, and how this change has influenced their agricultural production and food supply. Furthermore, a couple of factors contribute to getting access to new land, or rather: what makes it possible to compromise the loss of land given to investors with acquiring other crop areas and/or grazing areas in the village. More importantly, this chapter elaborates whether there is a productivity difference between informally transacted parcels of land and land that farmers made use of before it was used by investors. By making this comparison, it can be made clear whether locals' agricultural production and food consumption have decreased or increased since they started farming on informally transacted land as a consequence of land loss, and how this resource utilization change has influenced their food security. Also, analyzing land cultivation on informally transacted land can give the answer whether participating in the land market as demanders compensates the loss of land sufficiently. The chapter finishes with explaining how insecurities regarding the informal land market make it difficult for the land-poor to count on long-term use of the informally transacted land, or even using it at all.

7.1 Informal land market

The two village administrators explained that there are three main ways to obtain access: borrowing, sharecropping and cash rental (also known as fixed rental). All of these three ways are based on informal agreements, because landlords who offer land do not have formal land ownership, since the land is officially from the government and not theirs (explained in the 'regional framework'). The same applies to the ones acquiring land, because they have no user rights. Land transfers are, therefore, done informally. Transferring land informally to the ones demanding it has been the case in the Dalota village even before the arrival of companies.

Sharecropping

Sharecropping is the traditional way of overcoming the loss of agricultural land. Sharecropping in the developing part of the world is seen as an alternative to fixed lease, because no money needs to be paid beforehand and production risks are being shared. In sharecropping, the tenant needs to share his harvest with the landlord; how much is shared depends on what has been agreed. Mostly, the share includes one third or one half of the harvest. So, the landlord allows the tenant to cultivate his/her land, but expects a share of the produced crops in return; this is beneficial for both parties involved. Sharecropping arrangements happen with landlords who have abundant land. In most cases, the landlord provides inputs that are needed for production, like labor and purchased goods.

This, however, varies across contracts. Here too there may be an extension of contracts, but the difference with cash rental is that sharecropping-contracts are recorded orally; the reason behind this is because a sharecropping-arrangement happens in the context of close social ties, which is not the case with fixed rent. Also, sharecropping happens in localities where markets are not fully developed and agricultural production is purely intended for the household, since some part of the production is given to landlords. This explains why most of the farmers in the Dalota village are involved in fixed rent.

Fixed lease

Fixed lease is another strategy to overcome land loss. During the data collection in the Dalota village, only respondents who are involved in fixed lease were found: a total of five farmers. Fixed lease is when a farmer pays cash – a fixed rental fee – to a landlord before he can make use of the land. In the study of Tolossa (2003), different heads of household have explained that the rate for land leasing varies with the quality of the land. The better the quality, the higher the payment. The reason for the difference in payment is because better quality of land results in higher agricultural productivity. Furthermore, the tenant pays not only for the land, but also for all of the needed inputs. Also, the farmer does not need to share his production with the landlord and keeps all of the harvest for his household. This means that the tenant also bears all of the production risks. As far as the contract is concerned, it is mostly written. The contracts for fixed lease are usually based on one year, but can be renewed. Cash lease is mostly chosen if the farmer intends to be involved in commercial farming and sell the products to earn a certain income – in addition to his own food supply – because then he does not have to share his harvest with the landlord. In the Dalota village, the farmers are involved in trading activities: they sell their agricultural products – like milk, dairy and crops like teff and vetch – to be able to make purchases on the domestic market; this concerns crops that they do not cultivate themselves, such as sugar, coffee, oil, etc. Farmers in this particular rural area have the opportunity to sell their products because of the developed market of Debre Zeit and, therefore, opt for cash lease. Also, the surveyed farmers had the money to pay a fixed rental fee to the landlord, because of these trading activities they did before they gave their land up to investors.

“Renting made it possible to continue my life. I was lucky that I had some money to be able to pay rent. I learnt that money through trading activities. I am still trading now.” (Respondent #5 interviewed on 11.03.2020)

Borrowing

Land borrowing is another transaction that the landless can make use of, and is a rare form of land transaction. These fields are given to landless farmers for free. This means that no money needs to be paid for the land and the production output does not need to be shared with the landlords; nothing is expected in exchange and because of that, this transaction is seen as a gift. However, even though it is not obliged to give the landlord something, the borrower mostly gives an agricultural product as a present to show appreciation. The borrowed fields are given by close relatives or people with whom the landless have had a long term and close relationship (in other words: related to through kinship). Borrowing is a temporary arrangement and is often meant for one production season. When it comes to making the agreement, this is orally done (Belay & Manig, 2004).

7.2 Demand side: households looking for land

There are a couple of explanations, according to Amare (2013), Belay et al. (2017), and Belay and Manig (2004), for the difference between households acquiring land and households that do not do this.

Landholding size

The first difference regards size of landholding. Farmers who cultivate only their own plots and are not involved in land transactions, have more land on average than farmers who are involved, and are content with the amount of land they have. So, households with a large size of landholding are less likely to add more land. Smallholders who have little land need to enlarge their farm to the optimal size, to increase their agricultural production. This finding corresponds with the fieldwork in the Dalota village: the farmers who are acquiring land have small plots or no plots at all, after acquisition by the companies. Land transactions give them an opportunity to continue their livelihood activities (Amare, 2013).

Age

Another reason that explains the difference is age. According to this study, households that are adding land have a lower mean age than households that are not adding. This implies that the land market is mostly used by young farmers, who have higher entrepreneurial skills, which is required by today's farming (Amare, 2013). Amare (2013), however, did not make clear whether young farmers have less land and whether not having enough land is the real reason why they acquire land.

Livestock ownership

Livestock ownership is also found to be an important indicator for a household's participation in the land market. This finding not only shows an important difference between those who acquire land and those who don't, but also shows who actually has opportunities in the market. Namely, landlords who offer land favor access to households that have better assets. Having livestock means wealth, because it is a source of income. In the study of Amare (2013), those who have informally acquired land have more livestock than those who did not. Particularly if a household has oxen, it is more likely to get access to additional land than a household that does not. Those who have lost land to private companies and not own livestock, cannot compete with those who do. Oxen ownership implies that the household has the ability to cultivate on more land to produce a certain surplus and to supply this to the market. Such an arrangement enables these households to increase their farming activities and at the same time offer the household that offers land a certain income, who would otherwise not be able to farm their plots because of a lack of draft power. Land moves from households that cannot use it efficiently to those who can; this is why the landlord prioritizes households that own livestock, and particularly oxen. The finding that assets play a role indicates that there is inequality within the land market, because those households that need land for their livelihood to grow crops, but do not have livestock, are less likely to add farm land, because they are less wealthier and not able to deploy their livestock.

Household size

The fourth factor that explains the difference between households acquiring land and households that don't, is the household size. Households that consists of many individuals have the urge to increase the amount of farming land, to secure themselves of enough food. The bigger the household, the more likely the household is to add land, because more individuals means more agricultural products for food consumption are needed. Also, because of more labor power available in a bigger household and the increase in agricultural production that can be a result of more household members working on the farm, decisions to add more land are being made to make efficient use of the household size (Amare, 2013).

Education

The educational level of farmers also plays a role in participating in the land market. If a farmer has a higher educational level, the ability to capture information and use it relevant to farming activities is increased; the use of knowledge improves agricultural productivity. Amare (2013) found out that the farmers who are acquiring additional farmland are more educated than farmers who are not participating in this. Well-educated households are more likely to acquire land, because they know

how to make efficient use of the additional land. Amare (2013) does not deal with the opposite, namely whether farmers with more land get more access to education.

Credit

What is also interesting, is that access to credit increases the possibility to add more land. When a household has better access to credit, it is also more likely to participate in the land rental market. Not only is this household able to buy inputs needed for agricultural activities, but also to pay for the agreed price before the start of the production season in case of fixed rental. In the study of Amare (2013), households adding land were less common among those who had no access to loan and capital. Having little funds makes it difficult for farmers to get access to land, which leads to pricing them out of the market; this results in inequality. Habtu et al. (1997) have the same results: households offering land prefer to do so with wealthier farmers instead of fund-constrained farmers. Respondents in the Dalota village mentioned being involved in the trade of their agricultural products to not only be able to purchase food on the market, but also to be able to add land. Thus, landless households or households with small plots of land, and that do not have the right amount of income or the ability to get engaged in credits, have a minimum chance of getting themselves additional farming land, which makes their farming-dependent livelihood insecure.

Institutions

The last factor in the study of Amare (2013) is the role of institutions. The decisions that farmers make take place in a broader environment, and institutions are part of this environment. If farmers feel like they have the institutional support like advisory and extension service, then they are more likely to make the decision to participate in the land market. Contact with extension agents inspires households to add farming land, whereas lack of contact does not motivate them to do this; this can be explained by the fact that getting the right information and advice about the land market can give the farmer a feeling of security to take the step to participate.

Gender

Other studies have shown that other factors also play a role. According to Belay et al., (2017), mainly male-headed households are acquiring additional farm land. The major part of the landless households in this research that participate in the land market, were men, and a small part consisted of women. These results made Belay et al., (2017) conclude that households offering land are prioritizing men over women, which makes access for women to the market difficult.

Social network

Belay & Manig (2004)'s survey outcome is telling that land transactions are conducted among people who know each other well. The vast majority of the landless respondents mentioned that they are getting land from family, friends and neighbors. This can be explained by the informal nature of arrangements. This is not only the case with borrowing land, but also with sharecropping and fixed rental. That is why most of the land that is acquired by the landless respondents of this research, is located within the village of the respondents. However, there is a group of respondents who acquired land from other villages, which means that land transactions are not constrained by the boundaries of a village. Adding land from other villages is more difficult though, because there is a lack of social network.

Each of these factors discussed above (that can be quantified) are presented in a table below to present how acquiring farmers differ from the ones not demanding land.

Table 3: Differences of variables between participant and non-participant households as demanders in informal land market

Variables	Not demanding land	Demanding land
Size of land holding (ha)	1,769 (mean)	1,229 (mean)
Age (year)	47,377 (mean)	31,743 (mean)
Total livestock (TLU)	5,663 (mean)	6,417 (mean)
Household size (number)	6,038 (mean)	6,400 (mean)

Source: Amare (2013)

All these factors have an independent influence on being able to participate in the land market. The reason that these factors are presented in this chapter, is because they show constraints regarding participation. In other words: not every household that has given up land to investors can get access to informally transacted land. Having no livestock, not being able to get access to credit, not having any important contacts, or being a woman, are factors that make it difficult to acquire land. Farmers that do not meet at least one of these factors have a smaller chance of using new areas of graze land and/or crop land after land loss, than farmers that do meet one of these factors. The consequences of land loss are, therefore, not the same for every household in the Dalota village. Those who are not able to participate in the land market are having trouble with keeping themselves food secure, since it is a challenge for them to find new land to farm on.

7.3 Supply side: households offering land for lease

When it comes to households deciding to lease out their agricultural land, a couple of explanations can also be found, according to the study of Habtu et al. (1997), Gebeyehu (2013), and Amare (2013).

Land cultivation

Farmers who offer land have a certain amount of possessed land. Households that are giving land have a larger average of landholding size than households that do not participate in the supply-side of the land market. Amare's study (2013) showed that the landholding size influenced the household's decision of participation in the case of not being able to make efficient use of all of the land; in fact, the amount of land that is cultivated by suppliers (1.72 ha of 2.55 ha on average) is comparable to those who do not participate in the land market and have a smaller landholding size (1.77 ha of 1.77 ha on average). This explains why households with a large landholding size decide to offer this amount of land to the landless; namely, these households are not able to make optimal cultivation happen, and end up providing land access to those who are productive but have little or no land. The main reason, according to Habtu et al. (1997) and Gebeyehu (2013), for not being able to cultivate all of their lands, is the fact that a lot of landlords lack labor, capital and time; they are constrained by having not enough farm seeds, workers, inputs for planting, and oxen for plowing. The results of Amare's (2013) study show that landlords who are not offering land have three times as many oxen as the ones offering. It is mostly the elderly, poor, disadvantaged, and women, who give their holdings to farmers who are capable of cultivating. The study of Amare (2013) shows that the mean age is higher for those that participate in the land market, than those who do not; probably because these landlords were retired and found a solution to keep cultivating their plots. Because cultivating requires heavy activities like plowing, planting, weeding, harvesting, and water activities, it is difficult for vulnerable groups to succeed in this. On the other hand, the landless households have a surplus when it comes to labor. Also, farming inputs are expensive and if a landlord does not have the money to invest in inputs like fertilizers, offering land to the landless appears to be the best option. Sometimes landlords want to engage in off-farm activities and therefore offer their land. But

mostly, it is because they need to. Thus, land transactions benefit both the landlords by allocating labor and capital to their land, and the landless or those with little land by giving them an opportunity to farm (Gebeyehu, 2013).

Education

Amare (2013) gives another explanation for households deciding to offer their land, namely the level of education. Households participating in the land market as suppliers have a lower level of education compared to those not participating. Farmers who are more educated are less likely to supply their land to the market. Amare (2013) explains this finding by saying that if a farmer is well educated, the farmer has managerial skills for agricultural activities, and will find a way to overcome constraints. Thus, just like the educated landless are more likely to acquire land, so are educated landlords less likely, because of the same reason: having the skills to farm efficiently.

Tenure insecurity

The last finding is about tenure insecurity. In the study of Amare (2013), farmers were asked if they are confident about whether their landholdings will forever be theirs. Households that have decided to give their land to the landless said that they are sure that their plots will remain with them in the future; this is also why these farmers were confident about making the decision to participate in the market. However, farmers who are not secure of their landholdings are also not supplying their land to the land market, because of the fear of not being able to get the land back and lose it completely. These farmers would rather keep the land in case they decide to cultivate on it.

These factors are also independent from each other. The relevancy of this literature part is the fact that farmers who want to acquire land are dependent on the decisions landlords are making; namely whether they want to offer parcels of land or not. This makes it challenging for households that have little land or not land at all to get access to grazing land or crop land of other villagers who do have sufficient amount of land, which poses challenges on being able to agriculturally produce and having enough food to consume.

7.4 Agricultural productivity and food security on acquired land

Werku (2014) has identified major causes of food shortages in the Amhara region, among which the absence of agricultural/cultivable land. According to most of the landless respondents of this study, getting access to agricultural land for farming activities is the solution to the problem of food insecurity; they suggested that obtaining land through sharecropping, fixed rent and borrowing would give them an opportunity to have a certain amount of food supply again. The same was told and experienced by the respondents in the Dalota village in the Oromia region; these respondents even mentioned having a stable food supply due to land transactions. The stability mentioned is about having a stable food consumption and minimum income due to selling agricultural products (trading activities) that are made possible because of the continuation of agricultural production on informally transacted land. Having stability is, among other things, a consequence of choosing the right crops.

Crop choices

Farmers are engaged in different cropping strategies; one of those strategies is choosing the right sorts and amounts of crops, which is associated with minimizing production risks, and the amount of land and type of soil available. Also, the input that is demanded by a certain type of crop plays an important role in choosing this crop, since resources are not available for every farmer. Common crops grown on the transacted land in the Dalota village are teff, chickpeas, wheat, barley, vetch, sorghum, lentils, and maize; the same crops are grown on the land that is now in the hands of investors. Werku (2014) explains why these crops are chosen. Teff, sorghum and lentils, for example, have a low seed requirement. Maize and sorghum are useful for farmers who do not have enough

draft power. When it comes to chickpeas and wheat, these crops are chosen because of their low demand of labor input. Thus, the type of crops chosen by the landless farmers are influenced by the amount of draft power and agricultural supplies required.

Mailosi (2011) analyzed the differences in crop choices between farmers who are farming on informally-contracted fields and farmers who farm on land that they are landlords of. The first analysis that is done in this study is whether there is a difference when it comes to risk aversion between the two groups; the results showed that there are no differences, meaning that both groups farm in such a way that carries the fewest risks. In analyzing risk aversion within the three informal land transactions, it appears that farmers who choose sharecropping, are the most risk averse and have chosen this type of lease to distribute possible production risks; this is also the reason why this type of land transaction is the most dominant one.

For all farmers, the probability of choosing a crop is inversely proportional to the risk associated with the crop. In other words: risk is one of the main considerations for crop choice. Mailosi (2011) found out which crops are the least risky, and therefore chosen by all farmers. The risk-criteria that are taken into account here are crop yield risks affected by frost, flooding and drought; the last criterium is of relevance for farmers in the Dalota village, since the area is characterized by drought and farmers are having problems with this. Frost and flooding are taken into consideration in the study of Mailosi (2011), because research is done in Tigray – the northern part of Ethiopia – where these phenomena do appear; farmers in the rural area of Debre Zeit did not mention having these problems. According to Mailosi (2011), teff was categorized as the least risky one; on the second place comes wheat; then comes maize; and the last place is for barley. Teff and wheat are, thus, crops that are the least risky crops to invest in; these crops are, therefore, mostly chosen by farmers who farm on fields they are landlords of as well as informally-contracted fields, which means that maize and barley are the least chosen. The higher the risk for a certain crop to fail, the more likely farmers are to decrease the amount of land planted for that crop.

The study of Mailosi (2011) is relevant for this research, because it compares the differences in crop choices and production as a consequence of choosing crops that are non-risky and can offer a certain amount of production, between land that is informally acquired and land that is now in the hands of investors, but has been used by smallholders. By making this comparison, it can be stated that no changes in crops take place when a farmer finds new land for farming activities. Land utilization change has no consequences for households that gave up their land to investors when it comes to the choice of crops, and no consequences for the households' agricultural production and food security as a result of this crop choice. In other words: transfer of land to investors does not affect land use patterns. This leads to the assumption that smallholders get the same production results as agribusinesses, under the right circumstances. On the informally-contracted land, the farmer uses less risky crops; but this is also the case on the agricultural land that smallholders have used before, but investors are using now, indicating that renting, sharing or borrowing does not influence the choice in trustable crops. It does not matter on which land the smallholder grows crops, crops are being chosen for the same reasons investors choose certain crops: having a stable food supply, whether for own consumption or for trade. Therefore, on the basis of this study it can be stated that no changes in food supply after renting, sharing or borrowing – or better said: after the loss of land – happen as a consequence of crop choices, because the same choices are being made regarding minimizing risks. If there are no other factors that influence the agricultural production negatively, both smallholders' and investors' harvest is equally successful. When it comes to the amount of land that can be cultivated on informally transacted land, and the income and yield because of this cultivation, it is a different story. Namely, even though changes in food security do not happen because of crops choices, they do happen because of other reasons, which will be explained in next parts.

However, Werku (2014) comes with an interesting addition, namely that crops that do not require much draft power, seeds and labor inputs, are preferred by farmers who obtain land through a transaction. Unfortunately, the study does not explain whether farmers who farm on land they are landlords of value the same crop criteria. Teklu (2004) also emphasizes a difference in crop choices,

namely that annual crops are usually chosen in the case of rental contracts, since the investment on rented parcels is low, because the contracts are usually short-term. Permanent crops are rarely chosen, which causes differences in productivity between lands on which landlords are farming and lands on which renters are farming; this will be elaborated below.

Operational land size and food security

We have seen that choosing the right crops is important in successful farming and that both landlords as farmers who farm on informally contracted land consider this importance. Another element that is of relevance is the amount of land available for farming. Muraoka et al. (2018) explored the relationship between access to land on which agricultural activities are being practiced – in other words: operational farm size – the income of a household, and food security. The results show a positive relationship between operational farm size, the value of crop production, net crop income – which is defined as the value of the total crop production minus costs that were necessary to make this production happen – and net total income – meaning the sum of net crop income, net livestock income, transfer income such as pension and remittances, and non-farm income. The study has shown that the value of crop production and net crop income is higher for households that have a better access to land than for households that don't. Farmers who have given up crop and grazing land to investors have to deal with the consequence of not having much operational land or no operational land at all, which limits the ability to farm and have enough food products for consumption and selling activities to have a certain income and be able to purchase other food products on the market; this increases food insecurity problems. Getting access to land is important for food availability. Muraoka et al. (2018) shows that households that have the highest operational land size – and therefore the highest agricultural production – also consume the highest value of food. This results indicates that land access' main contribution to a households' food security is through their own farm production, meaning that the access to land helps improve food security through the availability of food. In the case of land loss, risks of having a low food consumption as a household is high; acquiring land through informal land transactions offers not only the opportunity to compensate this loss by adding land, but also to farm on it and offer the household a certain amount of food supply.

One renter mentioned the following:

“Even though I have much less land now, because I was not able to rent the same amount of land I had before, I am still lucky that I can farm and produce food for my household. It is less food, but better less than nothing.” (Respondent #4 interviewed on 05.03.2020)

Just like Muraoka et al. (2018) have investigated what the impact of a certain amount of operational land is on the agricultural productivity and food security of households, the same has been done by Holden & Ghebru (2013). This study uses two indicators for food security – calorie availability and BMI which are related to food consumption – and makes a comparison between the food security of households that participate in the land market through adding land and households that do not. According to this study, households that have managed to increase their operational farm size have members with a higher calorie availability and BMI than members of a household that are not adding farm land. Land transactions are, therefore, the most important means to get access to additional plots for food production and consumption to rural landless households.

Farming as renter vs. farming as landlord

Now that the relationship between access to land and food security is explained, the next step is to dive deeper into land cultivation on informally transacted land and how this differs from cultivation on the land that is given up to investors. By making this comparison, it can be made clear whether cultivation on informally transacted land leads to the same amount of food production as on the land farmers made use of before they lost it. In other words: does farming on informally transacted land

lead to the same agricultural productivity or does the productivity decrease? Answering this question will clarify whether access to land from the informal land market compensates land loss sufficiently.

An interesting and relevant addition of Muraoka et al. (2018) is the comparison between parcels on which renters farm and parcels on which landlords farm. Comparing the value of crop production, net crop income and the input use intensity, the results of the study show that there are differences in the value of crop production and net crop income per cultivated area between the two parcel types; this is because of the difference in the amount of organic fertilizer that is used by the farmer, which leads to a difference in agricultural production. On rented land, the value of land productivity and the income that comes from trading these crops is lower than on parcels on which landlords farm, because farmers are less likely to apply organic fertilizers on rented land than on land that is not rented; this is, however, not the case for chemical fertilizers, which is even higher on rented parcels. There is an explanation for this: organic fertilizers are being used as a strategy to improve productivity and fertility of the land in the long term, because it takes a few years to notice the benefits of this type of fertilizer. On the other hand, chemical fertilizers show immediate results, and that is why this type of fertilizer is chosen on rented land; farmers do not have the desire to make a long-term investment and wait for the organic fertilizer to show results – which is, according to Teklu (2004), also the reason why annual crops are being grown instead of permanent crops – because renting-in land in Ethiopia is mostly based on informal agreements, which makes tenants insecure about relying on this farm land. That is why tenants do not want to be involved in a long-term investment, where a couple of years are needed to see the desired results, and rather choose for something faster, because they feel like sooner or later they will not have access to this land (Muraoka et al., 2018; Holden & Ghebru, 2013). If the probability to capture the benefit of the investment is low, the probability to invest is also (Teklu, 2004). Because of this lack of investment in land that is rented, organic fertilizers are not being applied by the farmers and the fertility of land – and with that the productivity – is not being improved. Households that gave up land to investors had to adapt their farming activities by applying chemical fertilizers instead of organic fertilizers, leading to a decrease in agricultural production.

Not only is tenure insecurity the reason tenants do not have the incentive to invest on rented land, but the quality of rented land also plays a role. Namely, soil fertility is much lower for rented parcels. That is why the growth of crops on rented parcels is not successful and why farmers do not bother investing in the production. The reason for the fact that rented parcels have a lower quality of land compared to parcels that are not rented, is the fact that landlords who lease out land tend to do this with land that is eroded. The informal land market serves as a way to get rid of the undesired land. Land with lower quality produces less output per hectare of land (Teklu, 2004).

Lower agricultural productivity on rented-in land is therefore a consequence of both renting insecurity that led to not applying enough organic fertilizers needed for an effective production, and the already bad quality of soil, to which landless farmers also had to adapt; eroded and unfertile land makes rental markets perform below their potential, because of the lower agricultural production compared to parcels on which landlords farm, which means that the amount of food supply available for consumption is also lower for households after they have lost their land to private agricultural companies and tried to compensate this loss with rented parcels. Because landless farmers had to adapt to farming on eroded and unfertile land, it is difficult for them to get to the same amount of agricultural production as on the land they gave up to investors; this resource utilization change – the use of rented land because of land loss to investors – has made landless farmers more food insecure compared to their livelihood before the establishment of private horticultural companies. Thus, getting access to land through renting does not compensate land loss sufficiently.

Farming as sharecropper vs. farming as landlord

We have seen that farming on rented land does not lead to an equal agricultural production as on the land on which farmers have been farming before giving it up to investors. The goal of this section is the same as the previous one, only now sharecropping is the case. There are a couple of studies (Deininger et al., 2013; Deininger et al., 2008; Belay et al., 2017; Pender & Fafchamps, 2006) that

have compared the level of productive efficiency of the most dominant form of land transaction – sharecropping – with the productivity on plots on which landlords farm. These studies help with finding out whether farming on sharecropped plots also leads to a lower productivity. According to the study of Deininger et al. (2013), the results show a difference in yields between the two types of plots. Landlords’ yields are higher than the yields of sharecroppers. A concept that is related to the lower cultivation of sharecropping is Marshallian inefficiency, meaning that sharecropping leads to a lower agricultural output than activities of farmers who are not involved in sharecropping. There are a couple of reasons for this. First of all, the intensity of family labor is lower on sharecropped plots. Farmers who are not involved in sharecropping work together with household members; on sharecropped plots this is less the case. The second reason is that organic fertilizer application is much lower on sharecropped land, which is consistent with the finding of Muraoka et al. (2018)’s study: organic fertilizers help improve the quality of land and with that the agricultural productivity. Thus, farmers’ limited supply of labor and effort in applying fertilizers makes it difficult to get an optimum level of productivity (Deininger et al., 2013; Deininger et al., 2008; Belay et al., 2017). Belay et al. (2017) came to the result that the limited use of fertilizers is not the only example of low input use; the application of manure and irrigation practices are also minimal. Taking all of these results together, it can be stated that landless farmers who choose sharecropping as a solution for their livelihood had to adapt their way of farming – just like farmers who rent – namely by making a change in the use of input and labor. Making use of sharecropped land decreases the amount of agricultural products that are needed for a households’ consumption and trade – compared to the productivity on the land they gave to investors – which means that sharecropping does not sufficiently compensate the loss of land.

This inefficient way of farming, however, disappears when landlords monitor and participate in the decision-making process of sharecroppers regarding the input needed for production (Belay et al., 2017; Pender & Fafchamps, 2006). In other words: not only the output is shared with the landlord, but also the input. According to this study, productivity is no longer different between sharecropped plots and plots on which landlords farm on in this case, because the involvement of landlords in the production process can provide sharecroppers with the incentive to use optimal levels of inputs, resulting in an optimal level of productivity. Landlords share a small part of the input for production in sharecropping, which helps in applying the right amount of input needed for an efficient agricultural production. In addition to the input share, a lot of monitoring and enforcement takes place in the sharecropping contracts in the Ethiopian villages of the study area of Pender & Fafchamps (2006), making sharecroppers pressured to use more inputs; landlords do this because they also benefit from the production output of sharecroppers.

Thus, landless households that choose sharecropping as their solution for compensating land loss and their change in the use of land, will only experience a reduced agricultural output and food supply – compared to what they had before they gave land up – if landlords do not share a part of the input and/or not monitor the productivity on the sharecropped plots enough; if they do, then sharecropping would be considered as a well compensation for the loss of land.

Comparing land cultivation between rented, sharecropped and borrowed plots

Now that a comparison has been made between the productive efficiency of sharecropping and the productivity of plots on which landlords farm on, it is not more than logical to make a comparison between the three forms of informal land transactions – renting, sharing and borrowing – that the landless can make use of, and to see which type of transaction leads to the highest level of agricultural productivity, to find out which transaction compensates land loss the best. It is important to make this comparison, because it shows which type of land transfer offers the most effective production and food supply. In other words: which informal contract makes landless farmers the most food secure and is the best choice for landless farmers? Gavian & Ehui (1999) have compared land productivity levels of informal land transactions with land on which landlords farm, and came to the conclusion that production is lower for all of these three contracts, making this research result consistent with the result of Muraoka et al. (2018). Borrowed land has the lowest output, using the

same input; shared land comes on the second place with a less lower output compared to borrowed land, but still lower than land on which landlords farm; and rented lands (fixed/cash rent) are the least inefficient out of the three informal arrangements, meaning that fixed rent leads to the highest agricultural productivity and is the best option to compensate land loss.

According to Gavian & Ehui (1999), the lower output of informally arranged agricultural land is not due to a low level of input that is necessary for farming activities. In fact: all the informal contracts have a sufficient amount of inputs. In Pender & Fafchamps (2006), no difference has been found between the amount of inputs used on cash rented plots, shared plots, borrowed plots and plots on which landlords farm. Most of the inputs consist of chemical inputs, like fertilizers and herbicides, but also animal power, human power and seeds were a huge part of the input. A reason for the application of chemical inputs this study has given is the insecurity of informal land arrangements; that is why on borrowed lands chemical inputs are mostly used, since this type of arrangement is the most insecure. The relationship between tenure insecurity and chemical inputs has also been brought up in other studies that are discussed earlier in this section (Muraoka et al. 2018; Deininger et al. 2013; Deininger et al. 2008; Belay et al. 2017). Thus, the high amount of input that is applied on informally arranged land, in combination with low agricultural productivity levels, make Gavian & Ehui (1999) come to the conclusion that the limited output on borrowed, rented and shared parcels is not the consequence of not investing enough in this land.

Several reasons are given by Gavian & Ehui (1999) for this high input-low output combination on parcels that are informally arranged. The first reason is that informally-contracted land has a poor soil quality, which is also confirmed by the study of Muraoka et al. (2018). Especially borrowed fields do not consist of rich black soils, which is characteristic for Ethiopian land; this explains why borrowed land has the lowest output compared to the other two informally-contracted fields. Also, borrowers are stuck with what they are given, compared with renters and sharecroppers who search for land that consists of better quality. However, Muraoka et al. (2018) found that the land quality of shared and rented land is also low. Thus, the type of soil decides whether farming activities will be efficient or not. The second reason is that land-acquiring farmers do not use labor efficiently. Borrowers usually do not have the amount of people and animals needed to plow borrowed parcels, because they are obligated to contribute labor to the farm of their family that has gifted them the parcels; helping the family with farming is a way of paying them back for the parcels that they have given. Unfortunately, this is at the expense of their own agricultural productivity on the borrowed fields, which is another reason why this type of transaction leads to the lowest output out of the three transactions.

Borrowed parcels result in the lowest agricultural production. However, Gavian & Ehui (1999) do not make clear what the difference in output is between sharecropped plots and cash rented plots; this is why the study of Zeng et al. (2018) is relevant. According to the findings of this study, sharecropping increases the probability that improved crop variety will be adopted on the parcels; for fixed rental, the changes to choose diverse and better crops are smaller. A reason given for this difference is that sharecropped plots are more fertile and make it easier to cultivate improved crop varieties, leading to a higher agricultural productivity than on cash rented plots. Thus, rented-out plots have a lower fertility than plots that are sharecropped – leading to the assumption that landlords want a share of the crops when their land is fertile, and do not want to share production risks (fixed rent) when their land is not fertile. Therefore, improved crop varieties are applied on sharecropped plots, because the fertility of these plots makes choosing crops of higher quality possible.

Comparing land cultivation between the three informally contracted lands to decide which type of contract is the most beneficial for land-poor farmers is difficult to say. On the one hand, Gavian & Ehui (1999) are saying that renting leads to the highest output because of the more efficient way of farming, and on the other hand, Zeng et al. (2018) mention that sharecropped plots lead to the highest agricultural productivity because of the more fertile soil compared to rented land. What is clear from this section is that compensating land loss with informally transacted land does not lead

to equal agricultural production as on land that is given to private companies. Studies have shown that shared, borrowed and rented plots lead to a lower output compared to plots on which landlords farm (except for sharecropping in the case of shared input) and, therefore, a lower food consumption – even though non-risky crops are being chosen. Having access to land does, therefore, not necessarily mean that poverty can be overcome. Farmers in the Dalota village mentioned having a stable food supply because of the renting opportunity. About whether their agricultural production is influenced by the loss of land, mixed responses were given: on the one hand, there were farmers saying that this is not the case and their agricultural production and food consumption stayed the same, because renting solved the problem of land loss – which is not consistent with the findings of the studies described above – and on the other hand, a couple of farmers said that their production is indeed negatively influenced since losing land to companies; an explanation given for this is because these farmers now have less land for farming activities than they had before, due to the fact that money needs to be paid for renting and they do not have enough money to buy the same amount of land that they gave up to investors; this also means that their food consumption has decreased. Regardless of the fact that agricultural production is lower on informally transacted parcels compared to the land that is given up to investors, access to land through informal land markets offers landless farmers or farmers who have not a lot of land to farm on still an opportunity to farm and have a certain amount of food supply, even though it does not compensate land loss sufficiently. However, landless farmers cannot choose from these options and have to deal with the options that are available in their village, just like renting is the dominant form of informally transacting land in the Dalota village, according to the village administrators. Unfortunately, they did not mention how many villagers make use of this type of land transaction.

7.5 Transaction insecurities

Even though the informal land market offers landless farmers an opportunity to continue their farming livelihood, there are some insecurities regarding this continuation. Because of these insecurities, compensating land loss by participating in the informal land market is not a guaranteed solution, and does certainly not mean that the goal of food security is achieved. In fact, explaining transaction insecurities will make clear how the transfer of land to investors has made villagers food insecure, because they do not have the stability in having the land to agriculturally produce.

Since Ethiopia has no clear policy documents regarding land issues, legal frameworks provide mixed signals about land transactions: on the one hand, farmers are encouraged to borrow, sharecrop or rent-out their holdings, but on the other hand, the freedom to practice land transactions is limited, because there are restrictions for landlords when it comes to the size of holdings and the amount of time for offering land. In addition, landlords who offer land have no official land ownership and landless farmers who acquire land have no user rights. Because of these uncertainties, landlords prefer to be informally engaged in the transactions (Gebeyehu, 2013). So, when the landless get access to land through sharecropping, borrowing and renting, they do this in an unofficial way. The fact that land transactions happen informally, make the landless even more vulnerable: not only are they not able to make use of the land they gave up to investors anymore, but they also have no legal backing in case the holdings they are sharing, borrowing or renting are taken away from them. During their fieldwork in the Amhara region of Ethiopia, Belay et al. (2017) have found a couple of consequences that have taken place due to the lack of legal backing. One of the findings of this study is that respondents who offered their landholdings to farmers who needed land, did this for more than 25 years; however, the government permitted this long-term leasing of land for 25 years, which was the legal agreement. When the government found out that these landlords were not holding on to the agreement, they were forced to reclaim their land. Consequently, landless farmers who were making use of this acquired land, now had to distance themselves from it, even though they also had an agreement with the landlord about being able to use the land. This is an example of a situation that causes mistrust and conflict among contract parties.

Tolossa (2003) has asked landless farmers how they feel about informal land transactions. There were mixed responses. The landless farmers in all of the communities they did their fieldwork felt insecure about the access they had to land they were farming on through borrowing, sharecropping or renting-in. There are a couple of reasons for this. First, the respondents have mentioned that the arrangement they have made is based on one season, and whether the contract will be renewed for the next year is based on what the landlord decides. Agreements of short durations is common in informal land transactions (Belay & Manig, 2004). Another reason for their insecurity is the fact that farmers who give their land to other farmers, always look for farmers who can pay them the most or who can apply all the inputs that are needed to achieve the highest agricultural production. This means that there is competition and inequality between landless farmers: the ones from whom landlords will benefit the most will be chosen. The third reason, according to this study, is that landless farmers fear that landlords will ask for a higher payment in case of renting or take away the land when the quality of that land has been improved. So, landless farmers who gave land up to investors not only lose land to farm on, but also lose having a secure livelihood. Another problem regarding the quality of land is that some landless farmers acquire land of high quality and some of low quality; there is no equal distribution when it comes to distributing land of good quality, which means that some land-acquirers have a higher chance of getting efficient production than others. The fact that land-acquiring farmers have no user rights and no legal backing makes them very insecure about these informal land transactions.

Another insecurity that landless households have to deal with regards expenditures. Every household has certain expenditures to sustain their livelihood. However, rural landless have more expenditures than those who did not give up their land to investors, because they have to pay a certain amount of money in the case of fixed rent to make use of that agricultural land, and buy inputs for cultivation in the case of fixed rent as well as sharecropping. Of course, inputs always need to be bought; the difference, however, is that on transacted parcels the farmer has to start from the beginning, while the farmer who did not lose land to investors already has a certain amount of input. In addition, since landless households are resource poor, they are also more vulnerable to diseases, which means that healthcare costs are also higher for them than they are for landlords. Werku (2014) has made a list of major expenditures for rural landless households: healthcare, purchasing food, purchasing inputs like fertilizers and seeds, and renting-in land if that is the case (instead of borrowing land or sharecropping where no certain amount of money is needed to make use of the land). According to the findings of Werku (2014), the respondents who rent-in land spend on average 30% of their income on renting, which means that cash is essential if one wants to rent. If a farmer who wants to rent-in land does not have the money to pay to the landlord, the farmer cannot make use of the land, which is risky for the household's agricultural production and food consumption, leading to a food insecure livelihood. Four of the five respondents from the Dalota village mentioned being insecure about whether they would always be able to pay landlords the money that is needed to rent; these landless farmers pay the rent through trade activities, but they are not confident about whether trading will always be possible or whether they will always be able to earn enough rent-money with it. Landless households that compensate their land loss through renting land have extra ordinary costs, making their livelihood more challenging than farmers who did not lose their land to investors, and don't need to have a certain amount of money to pay rent.

One of the renters expressed his worries:

"I worry so much about the possibility of not having enough money later in life to continue renting. That is why I am so engaged in selling the crops and animal products that I have, so that I can put that money aside for when it is needed. I am really insecure about the future, but I am doing my best to not get myself and my family in trouble. These are the things I did not have to worry about before I gave the land I farmed on to investors. I did not have to worry about whether I will still have the money to be able to farm. And now I have to. That has no become my biggest concern in life."
(Respondent 3 interviewed on 28.02.2020)

Landless farmers also worry about whether they can participate in informal land transactions. According to the study of Deininger et al. (2013), landless households are not always able to acquire the amount of land that they desire to cultivate on. An explanation for this lies in the inequality that exists within the land market. Households that have more animals are more likely to get access to land than households that have less animals; this finding is consistent with the study of Amare (2013): oxen ownership implies that farmers will cultivate more, leading to a higher agricultural output, from which landlords will also benefit in the case of sharecropping. In addition, access to credit or having a certain amount of income as a household will also increase the chances of getting access to land, because landlords – in the case of fixed rent as well as sharecropping – give priority to farmers who can pay rent and/or pay the amount of input needed for the production. Having wealth leads to having a better position when it comes to land transaction deals, indicating that these imperfections in the land market prevent households from acquiring the desired amount of land. Especially because of the high demand for land, the wealthier ones will get the priority. Many households are, therefore, rationed out of the market participation, or unable to attain their optimum operational landholding size. The land market has its limitations as a solution for getting the landless and land-scarce out of poverty because of the capital that is needed to get access to land and farm efficiently (Holden & Ghebru, 2005).

All of these insecurities make landless households even more vulnerable, because they cannot rely on the informally transacted land and be sure that they can continue their farming activities for as long as they desire to. Landless farmers not only lose land, but also livelihood-security. Even though the respondents in the Dalota village mentioned having a stable food supply, it was not mentioned that this stability was happening on the long term. In fact, informal arrangements lead to insecure futures and make it impossible to have a certain amount of land for the long-term, or even at all. Having no legal backing when deciding to acquire land puts farming activities in danger, and can lead to a sudden decrease in food consumption, making their livelihood food insecure.

8. Compensating land loss: off-farm and on-farm employment

Other ways to compensate land loss is to be employed, both on the farm as off the farm.

8.1 Off-farm employment

The respondents are locals who are still engaged in farming activities, despite the fact that they have given up a large part of their parcels of land, or even all of them. The respondents are still engaged in farming either through participating in the informal land market or making some adaptations on the land, like converting crop land into grazing land and vice versa, or selling cattle when more graze areas are needed. However, according to the respondents, there are also locals who have left the rural area, because they were not able to continue a livelihood based on farming. As a result of loss of crop and grazing lands, some locals of the Dalota village migrated to the city of Debre Zeit to look for employment opportunities and to make a living from it. Some locals who went to the city work as hired laborers in construction work, and others set up small informal businesses and work for themselves – which mainly involves informal trading: the selling of goods or services on the streets. To set up such a business, locals get engaged in informal credit facilities where they can borrow money from in order to be able to invest. Farmers in the village mentioned that money is mostly being borrowed from relatives or neighbors. But there is also the possibility to borrow money from people in the village who are always available for lending money and with whom there is no close relationship with. This is how the rural landless who want to start a business in the city get access to money. Not only is the opportunity of borrowing money used for business purposes, but also for farming purposes.

8.2 On-farm employment

Just as there are employment opportunities in the city of Debre Zeit, so are there in the Dalota village. Having no land to farm on, but also having no desire to work in the city, brings landless locals to the decision of finding work in the rural area. Two main ways of being employed are through working on someone else's crop land as cultivator, or graze land as pastor. So, instead of making use of land that is allocated by the government to them, they are now making use of other land. Landless farmers can only do this type of work for households that have not given their land up to investors. Landlords and the landless are setting up an informal contract with a duration between one year and several years, depending on the agreement. The laborers get a monthly payment for the work they are doing and can even keep some of the agricultural production for themselves; this type of agreement is similar to sharecropping because of the production that is being shared, only with sharecropping farmers do not receive a payment. Working for others gives the landless an opportunity to earn a certain amount of income to be able to purchase food for the household. This type of protection helps the landless out of the situation of food insecurity. Another employment opportunity in the rural area of Debre Zeit is working in the construction of locals' houses. However, this type of job does not provide the long-term security as farm activities provide.

"I do not have any land anymore. After I gave up my land, I started talking to a local in the village I knew still had land. I said to him that I would like to work on his farm and he offered me a job. Now I am cultivating his crops and I am making sure his cows are fed." (Respondent #5 interviewed on 11.03.2020)

In the case of not being able to work on someone else's farm – farm employment in the Dalota village is not something that every landless farmer can be engaged in, because there is not a high offer in it – and not being able to participate in the informal land market, there is no other option than to migrate to the city of Debre Zeit in search for employment opportunities there. It is important for the ones who lost land that there are options other than agricultural sources of income, and luckily, Debre Zeit offers these options. Another thing that needs to be mentioned is the fact that it is not possible to continue the farming livelihood 'together': the population pressure in the Dalota village is high, which is another reason why landless farmers started looking for income opportunities in the city.

Unfortunately, due to a lack of fieldwork time, it was not possible to find respondents who have experienced land loss and got employed in the city or in the rural area. The information given is, therefore, limited, because it came from the village administrators. Whether on-farm and off-farm employment compensated land loss sufficiently and whether this employment contributed positively to the food security of the employed ones, is not clear.

9. Environmental degradation

This chapter presents another consequence of the establishment of private agricultural companies that non-participant locals in the Dalota village have to deal with – other than land loss – which is environmental degradation due to the companies' agricultural practices. Environmental degradation also causes a resource utilization change, because it forces villagers into the challenge of finding new agricultural land to farm on, due to the negative impact this degradation has on their food production. This chapter makes clear how their access to land is affected and what the consequences of this limited access is for the food supply of local farmers.

9.1 Soil degradation

The village administrators and all of the interviewed and surveyed farmers in the study area have mentioned that parcels surrounding the companies' farm lands are negatively influenced because of soil degradation. They have noticed that since the presence of the companies, the quality of surrounding land has declined. They are assuming that the companies use a lot of chemical inputs to increase and improve their production, and that these chemicals are the cause of their land becoming more destructed.

One of the farmers mentioned the following:

"A lot of damage has been done to the land I farm on since the presence of the company. I farm on rented land since I gave my land to the company in return for compensation, and I have noticed a change in the quality of this land over the years. I think this is because of the chemicals the company uses. My animals are grazing on the land that is surrounding the land of the company, and I am noticing that this makes them sick. Also, I am noticing a change in my crops, because they are not growing in the same way as they used to. I am not the only one in the village that has this problem. I talk to a lot of other locals about this, and they are also noticing a change in the growth of their crops and the health of their cattle." (Respondent #5, interviewed on 11.03.2020)

To dive deeper into the explanation of this example of environmental degradation, and to find other examples that could have caused the soil degradation mentioned by the locals in the Dalota village, a couple of studies are brought forward (Dheressa, 2013; Bekele, 2016; Elias & Abdi, 2010). This section will discuss different cultivation practices of private companies and the impact these practices have on the locals who are not participating in the companies' practices, but are influenced negatively by it.

One of the possible reasons why soil degradation is happening in the Dalota village, and what has been mentioned by the locals, is because of the use of chemicals. Private agricultural companies are known for using chemical inputs, whether this is in the form of fertilizers or pesticides, to make sure that nothing stands in the way of the growth of crops, and the crops get stimulated to grow faster. This is beneficial for the companies' production. However, these chemicals ensure that an acidic reaction is happening in the soils (Bekele, 2016). Soil acidity has a number of consequences, namely for the fertility and productivity of the plant. The availability of nutrients, like magnesium and calcium, declines, which has a negative impact on the fertility of the soil. Having soil that is not fertile results in limited growth of crops, which eventually results in a decline in the productivity as well. This is probably what is happening in the Dalota village and what the village administrators and farmers were talking about.

Another reason that could have been the cause for soil degradation in the Dalota village is the change in vegetation covers (Dheressa, 2013; Bekele, 2016). Companies clear vegetation covers from the land to make room for cultivation. Agricultural companies mainly target grazing lands, fallow lands and lands that are close to forests and that are open. Everything that can be found on the lands is being cleared: grasses and vegetation are being removed, and trees are being cut, which results in deforestation and the total removal of vegetation. Slashing and burning processes are also being used to remove grasses and bushes to make room for cultivation. These processes of removal are common processes for private agricultural companies and are leading to the consequence of damaging the soil and the nutrients that are present in the soil – the same as with the use of chemicals, only now the cause of damaging nutrients is land erosion, which makes nutrients slide away; this reduces the fertility of the soil, with a negative impact on productivity.

Bekele (2016) has done an analysis on the soils of private farms on which changes in the vegetation cover has taken place. It is not only the removing practices that damage the soil, but also converting land from natural vegetation to the production of crops, which leads to the imbalance of soil nutrients; this is because micro-nutrients that are present in the soil are being exploited.

Converting grazing and forest land to crop land results in the reduction of the soil's nutrients; specifically iron, copper, zinc, and manganese. These nutrients are necessary for a successful and healthy growth of plants. Another indicator of the quality of soil is soil-bulk density. If soil is more dense, it is also rich in nutrients. The density of soil decreases especially in the case of monocropping. Cultivating the same crops without crop rotation for a couple of years results in exploiting important elements of the soil. The decrease in soil nutrients could be the case in the Dalota village.

Another important indicator for soil quality is soil-carbon. Dependent on the crops that are chosen and grown by the company, the soil-carbon stock will increase or decrease. So, even though changes in the vegetation cover can lead to soil erosion and less nutrients, selecting certain crops for cultivation can compensate these negative consequences by the improvement of soil-carbon stock in the land. Having a certain amount of carbon in the soil is necessary for the land to be fertile; it is therefore of necessity to choose the right crops so that the quality of soil stays intact and the degradation of soil is compromised. However, soil-carbon can be lost in the case of using heavy machinery for farming activities (Bekele, 2016). It could be that the private horticultural companies in the Dalota village grow certain crops that are not beneficial for the carbon in the soil, and/or are using machines for cultivation, which causes carbon losses; either way, soil degradation can be the result of this.

9.2 Impact surrounding households

During the fieldwork, locals were asked what their perception is towards environmental degradation as a consequence of the establishment of private agricultural companies, and what kind of resource utilization changes and impacts on their livelihood they have experienced since this establishment. Because of the agricultural practices of private companies, rural locals have noticed the quality of land getting worse, making their access to land for cattle grazing and growing food crops limited, because the changed quality of the soil simply does not allow this to happen without badly influencing the cattle and crops. Locals' access to pasture and arable land is negatively influenced by the environmental damages that private companies cause. This is happening, because the soil degradation on the companies' land – which the study of Bekele (2016) has made clear – also spreads towards parcels surrounding this land, which poses risks on the productivity of locals' land, increasing the chances of failed crop production and/or cattle not being able to graze, which has a negative impact on the households' food consumption.

"I blame large-scale farming for the problems that I have with my production." (Respondent #7 interviewed on 11.03.2020)

This limited access to land of good quality as a consequence of environmental degradation leads to resource utilization changes for the locals, whereby it is needed for them to find new land for grazing and crop-growing purposes, because the households' food supply depends on it. This resource utilization change applies to both farmers who have lost their land to private companies and are farming on informally transacted land as farmers who haven't lost their land to investors. Either way, the farmers need to find a way to continue their farming activities without the companies' negative influence on these activities. If the farmers decide not to find other cultivable land, they will have to accept the fact that there will be less food available for consumption and for trading activities, which means that less food can be bought on the domestic market.

One farmer expressed his worries:

"I am really considering moving to another area where I hopefully will not have this problem. If I stay here for a longer time, I will have serious production problems. I will lose my animals and I will not be able to rely on my crops. This will mean that I will have less food, which is a huge problem. I

understand that the companies do this because of their own production, but they are not considering mine and others that are not involved.” (Respondent #6 interviewed on 11.03.2020)

However, the respondents find it challenging to find other parcels of land in their village to grow crops on or to let their cattle graze on.

“You know what irritates me the most? I thought that by renting land I have come up with a good solution for the fact that I gave my land to the company, and that I can just continue my life without any problems, but now these companies are causing another problem, which is even more difficult to deal with, because it is not easy to find other land to farm on. When I was searching for landlords that are renting-out, it was not an easy search. Since a lot of people have lost their land to companies at the same time as when I have lost it, a lot of farmers wanted to rent, so there was competition. Now, because a lot of farmers are experiencing the same problem with the soil as I am, the demand for land is high again. Only this time, not a lot of land for cultivation is available anymore. Especially the search for grazing land is problematic.” (Respondent #7 interviewed on 11.03.2020)

Elias & Abdi (2010) have explained why it is specifically hard to find grazing areas for cattle. Namely, because private companies create soil degradation and make it impossible to graze on the land surrounding the companies' farm, this creates an enormous pressure on other land due to overgrazing. Putting this in other words: a lot of locals are trying to find grazing land, and because of this high demand for pasture, loss of vegetation cover and soil erosion are happening on other parcels; this is all happening because these areas are constantly exposed to the grazing of animals, which destroys the structure of soil and make it difficult for new vegetation to grow. This eventually results in the lack of adequate grazing areas and a decline in animal productivity. Thus, locals in the Dalota village and other rural areas where agricultural companies have established, end up in a vicious cycle: agricultural companies create soil degradation on surrounding farms, forcing the locals to find other grazing areas, but because a lot of locals end up in this situation, a high demand and competition is created for pasture, causing even more soil degradation in the rural area because of the loss of grass, which means that locals once again have to move.

The problem of high demand for grazing land and for cultivable land, and the fact that not a lot of land is available to compensate the loss of good-quality land due to soil degradation, is a problem in the Dalota village. There is not much land left to get access to, and when there is land left, this land is not useful for farming purposes, because of the high pressure the land experiences. Therefore, in order to be able to continue a farming livelihood, the locals will eventually have to find other ways to make sure that their food supply is stable, like moving to another village where there is enough cultivable and grazing land available, because relying on current parcels will make their livelihood vulnerable, since they are already noticing a decline in agricultural productivity and food supply. Private horticultural companies, thus, trigger environmental degradation, which leads to a limited access to land for local farmers, causing them to change their current use of land by finding other parcels to farm on to secure themselves of food, because staying on the same farm will lead to no agricultural production at all on the long term. However, it is not clear whether private companies have deal with the consequences of environmental degradation, and if so, how they deal with it.

Concerns were expressed by a farmer:

“I really hope that my production will not decline enormously and that I do not have to leave this village to continue my farming activities somewhere else. Or that I have to give up farming totally and search for a job in the city, if I cannot find other land to farm on or job opportunities in the rural area, which is really hard. I don't want that. Those are my fears.” (Respondent #6 interviewed on 11.03.2020)

10. Companies' contribution to the community

10.1 Employment

In terms of employment, the private horticultural companies that are established in the Dalota village offer the community limited employment opportunities. According to two of the five farmers in the village and two village administrators, there are some locals who are employed and work as cultivators on the companies' farms; these locals got the opportunity to be part of the business, because they could not support themselves after giving up their land to investors. Investors offered vulnerable locals who were not able to find other agricultural land to farm – for example through participating in the informal land market or working on locals' farms as pasture or cultivator – or who were not able to find non-farm job opportunities, a work place and a monthly salary. By offering these vulnerable locals a job, the investors wanted to compensate their land loss. However, according to three of the five farmers, the salary these employees receive is low and not equal to what these farmers earned through selling their agricultural products to other locals to be able to purchase food on the market, before they gave up land to investors. Compensating land loss by employing locals and giving them a certain amount of income that is lower than what they would have earned in the case of agriculturally producing for themselves, is not considered as a fair compensation. First of all, they are not keeping a part of the production for themselves, and second of all, relying only on an income that is not much, makes them not able to buy and consume the same amount of food as they did before working on the companies' farms. In addition to the low salary, the respondents were mentioning how the fact that the companies' farming activities include the use of chemical inputs negatively influences the health of the employed locals. All in all, working for investors can be viewed from two perspectives: on the one hand, it gives security to the livelihood of locals who have lost agricultural land, and on the other hand, not producing for the own consumption and receiving a low salary means a decline in food supply, and on top of that, inhaling chemicals leads to health deterioration. The same farmers who have mentioned that employees receive low salaries have also mentioned that it is not the companies that have caused a limitation in the amount of locals working for the companies, but the locals have chosen themselves to not work for investors, because of the small amount of money they would receive, making it not worth to make their livelihood dependent on the job. According to these respondents, this is the reason why not a lot of locals from the Dalota village work for the horticultural businesses and why locals from other villages are brought to the Dalota village to work for the companies instead.

One of the farmers expressed his opinion towards working for the companies:

“You know... Even if the opportunity was given to me to work for one of the companies that are established in this village, I would turn the opportunity down and say no. I am farming on rented land now, and I am convinced that I am earning much more money now than I would be if I was employed. I have talked to people that work on the companies' farms and they have mentioned how they expected that they would earn more money than they are earning now. It is not that they do not want to work for the investors anymore, but I noticed the disappointment in them.” (Respondent #6 interviewed on 11.03.2020)

In contrary, another farmer said the following:

“Luckily, I am able to rent land. I did want to work for one of the companies, to be honest, because of the income stability that this employment would create. I know the salaries are not high, but at least you know that you'll receive the same amount of income every month. Farming on rented parcels does not offer this type of security, because you have to pay for the land and sell your products – if you are able to do this – to earn some money. You don't know if you will have the same amount of

money next month as you did last month. I personally think my life would be much easier if I was employed.” (Respondent #5 interviewed on 11.03.2020)

According to this farmer, income stability weighs heavier than receiving a low salary. Mixed answers were, thus, given regarding the employment opportunities private horticultural investors are offering in the Dalota village.

10.2 Knowledge spillover

When it comes to interaction between the companies and the locals from the village who are not included in the horticultural business, it is minimal. Interaction took place via the government and village administrators at the beginning of the land transfer process, when investors tried to convince the local farmers to give up their land in return for compensation and development. Since the locals have agreed on this, interaction completely stopped. Locals do not hear anything from the investors about not only development plans for the village, but also the farming activities that are implemented on the companies' farms. Employees who work for the companies also do not communicate with other farmers from the village about the work they are doing for the investors and do not spread any knowledge about the companies' way of farming. In addition, there are no farmers in the Dalota village who work together with private investors – in other words: contract farmers – which also limits the spillover of knowledge, because these contract farmers could share the knowledge they got from investors with other farmers. Because of this limited interaction, farmers who are not included in the private horticultural investment do not learn anything from large-scale farming and the successes of it. Nothing has changed in the farming activities of the locals since the presence of the companies; no improvement happened, because nothing new has been learned.

10.3 Services and provisions

As mentioned earlier, no development happened in the Dalota village since the arrival of private horticultural investors, even though this development was mentioned at the beginning of their arrival. The companies did not provide any services and provisions for the locals: no water, electricity and infrastructure were provided to the community, while promises were made about developing different segments in the rural area. In this village, locals have problems with having no decent water source for drinking and irrigation purposes. Investors have promised the locals that they would provide them with a water source that can be used for all purposes. In addition, houses in the village have no electricity, while this would supposedly also change; the locals were told that power would be supplied to every house, but this did not happen. When it comes to infrastructure, there are roads from the city of Debre Zeit to the rural area, because of the many horticultural businesses that are established there and the necessity for this connection. However, this infrastructural development concerns major roads; smaller roads that lead to the houses and farms of the locals stayed in the same bad condition as they were before. The stony roads are not replaced by roads that are paved just like the major roads, which makes it hard to drive on. All in all, the farmers and village administrators are disappointed not only in the investors, but also in themselves for believing change would happen.

One of the farmers was describing his disappointment towards the investors and himself:

“I have to be honest... the companies have no contribution to the lives of the locals. Not even regarding the infrastructure. The companies appreciate what the people are doing on their own farms, rather than the people around the farms. Not even some sort of water supply. Drinking water. Electric extension. Nothing. And this is what they have promised. That they would give us water, electricity and infrastructure. We were hoping for some kind of development in this area. But this did

not happen. They are only making promises, but are not keeping these promises.” (Respondent #4 interviewed on 05.03.2020)

10.4 Products’ end market

Regarding the destination of the horticultural products that the private companies in the Dalota village are producing, according to the two village administrators, besides the fact that these crops are meant for export, the crops also end up on the markets in the city of Debre Zeit. Fruits and vegetables from different private companies, like Roshanara PLC, Yassin and Rainbow, can be purchased in the city, which is also done by the local farmers in the village. To be able to purchase these companies’ products, a certain amount of income is necessary; farmers get this, as mentioned earlier, by selling their self-produced horticultural crops and animal products to other locals who demand this, to earn some money and invest this money into buying products that these farmers do not have.

One farmer expressed his opinion about the availability of the companies’ products on the market in Debre Zeit:

“I only grow certain vegetables and have milk and cheese. But I do not grow fruit on my farm or lettuce for example. So, I am very happy that I have the option to buy these types of food in the city and to still be able to eat it. I think it’s good that these companies do not sell everything to other countries and leave some part of it here, so that the locals can also enjoy it. But I have to say, I am also lucky that I can sell my own products so that I can buy other products on the market. Otherwise, I would not be able to do this.” (Respondent #4 interviewed on 05.03.2020)

Since the horticultural companies do not give a part of their production to the local community, trade is an important way for the non-participating locals to get access to food products that are available on the domestic market.

A village administrator said the following:

“I think it would be only fair if the companies gave some food to the farmers in the village, because they gave land up to them for little money. It would be a way of saying thank you for the land.” (Respondent #1 interviewed on 19.02.2020)

11. Conclusion

The main research question of this thesis is as follows: what kind of resource utilization changes does a private horticultural investment trigger and how is this affecting the food security status of the local community that does not participate in the project? To answer this question, a couple of sub questions are presented in the methodology to make the research more transparent. First of all, the resource utilization change that took place in the study area regards land and not water; private horticultural companies in the Dalota village got permission from the government to establish large-scale farms on the land villagers have been using for generations long. The land did officially not belong to the smallholders, but they had the right to use it. Local farmers used the land for two agricultural purposes: for the growth of crops and for animals to graze on. A lot of the livelihood activities in the rural area evolve around arable farming and feeding the livestock. However, since parcels of land have been given to investors, locals experience difficulties with accessing farm land, because a shortage in crop land and graze land arose in the village. This limited access to land due to land loss had a negative impact on the livelihood of the non-participant locals, because of a loss in agricultural productivity. A decline in the livestock holding due to a shortage of grazing areas led to a

decline in animal products, just as a shortage of crop land led to a decline in crops. As a consequence of this, less food was available for households' consumption. Also, having a smaller food supply meant having less crops and animal products available for trade, which meant that landless farmers earned less income and purchased less food on the market – this is how the non-participating locals get access to agricultural products in addition to their own production. So, not only does less land mean less food for own consumption, but also less food available for trading activities to earn money to be able to purchase food. Some villagers tried to solve this food insecurity problem by converting crop land into graze land, or graze land into crop land. But there are also farmers in the Dalota village who were forced to make a complete change in their previous way of making use of agricultural land, to compromise this land loss: participation in the informal land market as demander. When it comes to water utilization change, this did not happen, since local farmers and investors do not use the same water source for irrigation. However, companies use ground water, which in the long term can cause a decline in the water level of the pond from which villagers collect irrigation water. The prediction is that the villagers will eventually have to find a new water source.

The informal land market gives the landless an opportunity to obtain access to farm land. However, there are some criteria the villagers must meet if they want to have a chance at acquiring some parcels. Sharecropping, renting and borrowing are three ways of how land is being transacted; in the Dalota village, renting is the most common form. Looking at the type of crops that are chosen to be grown on informally transacted parcels, the same choices are being made regarding minimizing risks as on the land that is given up to investors, which means that no changes in food supply happen as a consequence of crop choices. Transfer of land to investors does not affect land use patterns. This leads to the assumption that smallholders get the same production results as agribusinesses, under the right circumstances. But when a comparison is being made between the productivity level on land villagers made use of before giving it up to investors, to the productivity level on informally transacted land that the villagers use now, then it is made clear that there is a difference: renting, sharecropping or borrowing brings the villager a lower agricultural production than before. One of the main reasons for this is the fact that locals who farm on informally transacted land do not want to invest much in that land, because of insecurities about whether they will be able to farm on it for a long time or not; low input use leads to low production. The other reason is that landlords offer parcels of land that have bad soil quality: eroded and unfertile land makes it difficult to have a high productivity level. Therefore, farming on informally transacted land does not compensate land loss sufficiently, because the agricultural output is lower compared to what it was before the loss of land, which means that the amount of food that is available for consumption and trade to be able to buy other food products, has also decreased. Other ways to compensate the loss of land is through on-farm and off-farm employment; however, it is not clear whether these types of employment have had a positive or negative impact on the food security of the ones who are employed.

Land utilization change is not only a consequence of land loss, but also of environmental degradation. Since the presence of the horticultural companies in the Dalota village, the quality of surrounding land has declined due to the companies' agricultural practices, like making room for large farms, converting practices, and the use of chemicals to give a boost to the productivity; unfortunately, soil degradation is the result of this. This limited access to land of good quality as a consequence of environmental degradation leads to land utilization changes for the locals, whereby it is needed for them to find new land for grazing and crop-growing purposes, because the households' food supply depends on it. However, because of a high demand and low supply in farm land, the local farmers have to deal with the problem of soil degradation and the negative consequences it has on the food production.

All in all, the presence of private horticultural businesses in the Dalota village has created food insecurity for the villagers who are not involved in the investment. Because there is zero interaction between investors and the non-participating locals, and the investors are not engaged in solving the problem, the non-participants will have an unsustainable livelihood in the long run.

12. Discussion

Since the fieldwork was interrupted by the corona crisis, the results eventually became a combination of primary and secondary sources. This means that the data found in the field have been further elaborated on the basis of literature. It was still possible to contribute to the theory previously found on this subject. The main contribution of this research to the existing theory is that it investigates how the food security of a group within the rural community that was excluded from the established private horticultural businesses was influenced by their presence. Until now, only research has been conducted into the food security of the villagers involved.

First of all, by presenting the process of land transfer, it was made clear that in the case of the Dalota village, villagers were informed about the companies prior to their arrival. In many cases when private companies want to establish in rural areas, this is not the case and villagers are surprised instead: land loss happens while locals are not even aware that this is happening. Dalota's farmers could prepare themselves on how to adapt their livelihood. Finding out about the consultation gave a new perspective on how changes take place in rural areas. After the agreement between the government and the locals, farmers found themselves in a situation where it was necessary to make adjustments in the use of land, namely to find new land to farm on. Interestingly, it is not mentioned by the respondents that this is the case with the use of water, since the companies do not use the same water source as the locals: investors use ground water and locals use water from a pond. However, the fact that investors use ground water can influence the water level in the pond in the long run. This is currently not the case, but further long-term research in the Dalota village is needed to investigate whether the water level of the pond actually decreases as companies use groundwater as irrigation water. Current literature mainly focuses on the impact private agricultural companies have on locals' access to water in the case of both groups using the same source, which causes direct consequences. In the Dalota village, there are no direct consequences, but this does not mean that there are no indirect consequences. Therefore, this research gap needs to be filled.

The empirical part about informal land transactions is the most extensive part within the results. The reason for this is because in the Dalota village, participating in the informal land market is the main solution to compensate the loss of land for the ones who gave up their land to horticultural investors. Within literature, agricultural productivity on different types of informally transacted land is elaborated. In this research, the information about the informal land market is put into the context of the land utilization change as a consequence of land loss, and whether this change has helped the landless locals get their livelihood back to 'normal'. More importantly: how has this resource utilization change influenced their food security? Existing literature has treated informal land transactions separately and not in the context of compensation. In addition, comparing land cultivation between the three informally contracted lands to decide which type of contract compensates land loss the most is difficult to say, because different results are given by different studies regarding the agricultural output. Additional research in the Dalota village is therefore needed to clear up ambiguities. Other ways to compensate the loss of land is presented as off-farm and on-farm employment. However, this part has not been investigated extensively due to a lack of time. That is why future research needs to put more focus on landless farmers who found work on another villager's farm and landless farmers who found work in the city of Debre Zeit, to find out whether this employment has positively contributed to compensating land loss.

Changes in the use of land happen in the Dalota village not only because of the loss of land, but also because the quality of land decreases as a consequence of the companies' agricultural practices. Environmental degradation because of the establishment of private investors in rural areas is discussed within literature, but this research goes a step further by discussing how villagers make adjustments and how this affects their food security. One thing that is not clear from the part about environmental degradation, is how investors deal with this problem. If the surrounding soil is negatively affected by the farming activities of companies, then this should also be the case on the

land that investors use. Investors supposedly have a solution for this; doing research on this specific topic could help get the answers needed to spread knowledge to farmers about how to overcome the problem of soil degradation.

The last empirical part presents the contribution of companies to the local community, which is what caused the locals to agree on giving up the land to companies in the first place. Having the companies not contribute to developing the Dalota village, makes it interesting to find out why this is the case; this can only be done by arranging a conversation with the investors about their goals and their decision to not keep their promises, because due to a lack of time this was not possible. Also, arranging meetings between villagers and investors so that villagers can share their disappointments and wishes can be a step in the direction of mutual understanding and agreement. Without any interaction, no changes will happen in the village.

A couple of biases were mentioned in the 'methodology' that could potentially influence the results; the process of recruiting participants appeared to be of potential influence. Since the topic of this research is sensitive and a current problem in the rural area of Debre Zeit, it was challenging to get a permission from the city administrator to do the research. The reason why getting into contact with the city administrator was necessary, is because the city administrator helped with getting to the right location – namely the village where people lost land to horticultural investors – and getting into contact with the village administrator of that location. The village administrator eventually helped getting to villagers that have experienced land loss and resource utilization change. However, all of these farmers that participated in the research were farmers who rent land to continue their farming livelihood and to compensate the loss of land they used before. This means that all of the respondents were part of the same group of people: renters. Because there was no diversity of respondents and everyone had the same consequences for the most part, the saturation point in this group was quickly reached; the same things were repeated in conversations. As a result, the research went in a certain direction, where the focus was mainly on informal land transactions as a new way of land use, and too little attention was paid to other livelihood adaptations – which is also due to a lack of time. Having the same type of respondents could potentially have influenced the results.

This topic fits well in the field of Development Studies, because it discusses one of the most popular rural problems in developing countries: farmers losing agricultural land to private agricultural investments because of having no official land ownership, and having only the unofficial right to use the land. This problem caused many protests among Ethiopians, and still does. Land loss goes hand in hand with the development goals of the government, meaning that there are two opposite sides of the same coin. Within literature, the relationship between the establishment of private companies and local's food security is presented from the perspective of contributing positively to the livelihood of the ones involved. Viewing the same topic from another perspective – from the perspective of the ones not involved – can make a change in the way the government views it, so that the rise of the private sector will not only be beneficial for economic development on the national level, but also on the local level.

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14. Appendices

14.1 List of respondents

Respondents	Characteristics
1	Village administrator
2	Village administrator
3	Local farmer who experienced land loss
4	Local farmer who experienced land loss
5	Local farmer who experienced land loss
6	Local farmer who experienced land loss
7	Local farmer who experienced land loss

14.2 Interview questions for village administrators

1. Which companies made the locals lose their land?
2. When did these companies establish their farms in Debre Zeit?
3. Do you know how big the farms of the companies are? How many hectares?
4. For what was the land that the companies now use, used before?
5. Can you tell me about the process of privatizing land that was first from the government? How does that go usually?
6. Did the local community that lives around the farms of the companies make use of the land and water resources that the companies now use, before they were established? If so, how?
7. Would you say that their access to land and water is limited because of the companies?
8. How is the livelihood of the local community influenced due to the limited access to land and water?
9. Did the locals have to find new areas of land and new water resources for their agricultural activities and livelihood in general, because of this limited access? What is their livelihood strategy now?
10. Do you know whether the companies employ locals from the villages around the farm? Or work with contract farmers?
11. What is your opinion about the rise of private agricultural companies in rural areas?
12. Do you think that private agricultural companies can help achieve more food production in this area? If so, do you think the locals benefit from this?
13. Can you tell me where I can find the nearest villages around the farms of the companies? What are the locations? And the names of the villages?
14. Is there any change you would like to see in the way the companies do their work?

14.3 Interview questions for local farmers

1. Can you tell me about how a normal day in your life looks like? What do you do on a normal day?
2. What was your first thought when you found out that private companies would establish here?
3. Which company caused land loss for you?
4. For what was the land used before the company came here? How did you make use of the land that the company now use?
5. Did the government give you something in return, like a compensation, for the land that it now uses? Do you think this is fair? Why?
6. Did you have to find new areas of land that you can make use of for your livelihood/farming activities, because of the presence of the company? Would you say that the company limited your access to land? How?
7. Has this change in access also influenced your food supply? In what way?
8. Does the company offer services and/or provisions like healthcare, infrastructure, or maybe even food and water?
9. What are your strategies to secure yourself of food after you have given up land to the company? And does this strategy compensate the loss of land sufficiently?
10. Do you buy food that is available on the market? How?
11. Would you say that people who work for the company are more positively influenced by the presence of the company than the ones who are not included, like you, for example? Why?
12. Do you think the company has to change/improve its way of working? What kind of changes would you like to see?

14.4 Survey questions for local farmers

NAME COMPANY: _____

1. Respondent is the household head?
 - a. Yes
 - b. No
2. If no, relationship with the household head: _____
3. Age of the respondent: _____
4. Household members: _____
5. Tenancy status:
 - a. Landlord. 'Owned' area: _____
 - b. Tenant. Rented area: _____
 - c. Sharecropper. Sharecropped area: _____
 - d. Borrower. Borrowed area: _____
6. Which crops are you growing?
 - a. Wheat
 - b. Rice
 - c. Cotton
 - d. Sugarcane
 - e. Maize
 - f. Vegetables
 - g. Other: _____

7. Do you have animals/cattle?
 - a. Yes
 - b. No
8. If so, how many?

9. Would you say that the crops and/or animals provide your household of enough food?
 - a. Yes
 - b. No
10. Would you say that your food supply is stable?
 - a. Yes
 - b. No
11. Have you ever had problems with providing your household of enough food?
 - a. Yes
 - b. No
12. If so, what difficulties have negatively impacted your household's ability to meet your food needs?
 - a. Loss of employment/reduced income
 - b. Sickness/health problems
 - c. Death of household head
 - d. High food prices
 - e. Crop disease
 - f. Animal disease/death
 - g. Lack of irrigation water
 - h. Bad climate
 - i. Others: _____
13. If so, how did you deal with this situation?
 - a. Borrowing money
 - b. Stick to simple food
 - c. Reduce expenditures
 - d. Skipping meals
 - e. Selling assets
 - f. Other: _____
14. Do you have an income?
 - a. Yes
 - b. No
15. If so, what is your main source of income?
 - a. From crops
 - b. From livestock/cattle
 - c. Off-farm activities
16. Do you buy food on the market?
 - a. Yes
 - b. No
17. What is your source of drinking water?

18. Do you have enough drinking water?
 - a. Yes
 - b. No

19. What is your source of irrigation water?

20. Do you have enough irrigation water?
- Yes
 - No
21. What is the name of the company that made you lose your land?

22. What was your first thought about the company?
- Positive: _____
 - Negative: _____
23. How was the land that the company now uses, used before?
- Communities' agricultural activities
 - Government's commercial agriculture
 - It was not used at all
 - Other: _____
24. Did you make use of the land that the company now uses?
- Yes
 - No
25. If so, how did you make use of the land?
- Growing crops
 - Pastoral purposes
 - Other: _____
26. Did you make use of the water that the company now uses?
- Yes
 - No
27. If so, how did you make use of the water?
- Drinking
 - Irrigation
 - Other: _____
28. In case of resource loss, do you feel that the company limited your access to land and/or water?
- Yes
 - No
29. If so, did you have to find new areas of land and/or new water sources for your agricultural activities and livelihood in general, because of the presence of the company?
- Yes: _____
 - No: _____
30. If so, did this limited access influence your level of food production?
- Yes: _____
 - No: _____
31. If so, did you need to find new ways to make sure that your household has enough food and/or water?
- Yes: _____
 - No: _____
32. Does the company offer the local community provisions and/or services?
- Yes
 - No

33. If so, what types of provisions and/or services?
- a. Food
 - b. Water
 - c. Healthcare
 - d. Infrastructure
 - e. Other: _____
34. Did you receive some kind of compensation for the land the company now uses?
- a. Yes
 - b. No
35. If so, do you think this compensation is fair?
- a. Yes
 - b. No
36. Did the company offer the local community employment?
- a. Yes
 - b. No
37. Does the company work together with farmers from this community?
- a. Yes
 - b. No
38. Would you say that the people that are included in the business of the company benefit more than the ones that are not?
- a. Yes: _____
 - b. No: _____
39. Would you work with the company?
- a. Yes: _____
 - b. No: _____
40. Do you think the company has to change its way of working?
- a. Yes
 - b. No
41. If so, what changes would you like to see?
- _____

14.5 Code tree

Process of land transfer

- Consultation
- Compensation

Limited access to land

- Less crop land
- Less graze land
- Decline in agricultural productivity
- Decline in food supply

Compensating land loss

- Informal land transactions
- Agricultural productivity on informally transacted land
- Transaction insecurities
- On-farm and off-farm employment

Environmental degradation

- Companies' farming activities
- Soil degradation
- Decline in agricultural productivity
- Decline in food supply

Companies' contribution to local community

- Employment
- Knowledge spillover
- Services and provisions
- Products' end market

Food security

- Access
- Availability
- Stability