

Malt Barley: a short-term cash crop or sustainable investment?

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A study on the impact of the CREATE project on the livelihood and food security of contracted smallholders in Ethiopia.

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## Abstract

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A predominant view to foster rural development and overcome food insecurity and poverty is that more agricultural investments are needed in developing countries. The true question is however not whether foreign direct investment should contribute to meeting investment needs but how its impact can be optimized to maximize the benefits and to minimize the inherent risks for all involved (FAO, 2009). The purpose of this thesis is to contribute to this question by investigating the impact of the CREATE project on the livelihood and food security of local smallholders who have been inserted in the malt barley value chain of Heineken in Ethiopia. The CREATE project was set up as a public-private partnership and makes use of contract farming. The study was conducted in Addis Ababa and Arsi and used a mixed-method approach including interviews, focus group discussions, stakeholder analysis, value chain analysis, and a survey, which was completed by 148 smallholder farmers. It is seen that farmers firstly experienced a shift from market governance to a captive network, offering on the one hand price certainty and a guaranteed buyer, but limiting on the other hand the farmer's freedom to directly act and react to market demand. The results further show that short-term effects on livelihood and food security are positive. Farmers experienced in particular an increase in social and human capital. In terms of food security, farmers stated to have access to a more variate food basket and can now consume three meals instead of two. It was however seen that contract farming has a certain degree of exclusiveness since better-resourced farmers tend to capture the contracts, leaving poorer farmers out of the project. In addition, the contractual agreements transferred the production from the lead firm to cooperatives, which in turn put a smaller risk in the hands of farmers. Concerns are also raised about the long-term effects since the value chain is rather weak since most nodes are currently controlled and supported by one actor, which is Heineken itself. In addition, the majority of farmers is dependent on a single buyer to sell their malt barley to, which is Heineken as well. Looking at environmental issues, the new seeds are high maintenance, disease sensitive, and input intensive varieties. Much chemicals and fertilizer are needed in order to grow these seeds, which might lead to harmful side-effects on the environment in the long run (Environment, 2015). It is thus recommended to develop an environmentally and economically sustainable agricultural value chain to ensure that short-term results become long-lasting.

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## List of Abbreviations

ADLI	Agricultural Development Led Industrialization
ATA	Agriculture Transformation Agency
CREATE	Community Revenue Enhancement through Agricultural Technology Extension
DFID	Department for International Development
DRC	Democratic Republic of Congo
EIC	Ethiopian Investment Commission
EUCORD	European Cooperative for Rural Development
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HDI	Human Development Index
ICCO	Interchurch Cooperative for Development Cooperation
IDS	Industrial Development Strategy
MFI	Micro Financing Institution
NGO	Non-Governmental Organisation
PPP	Public Private Partnership
UNDP	Nations Development Programme
USAID	United States Agency for International Development
WASCD	West African Sorghum Value Chain Development

# 1. Introduction

## 1.1 Problem statement

The agrarian sector has much changed since the 1980s. New and dynamic markets, technological and institutional innovations, and different roles for the state, the private sector, and civil society define the new context for world agriculture (The World Bank, 2008). However, the agricultural sector experiences large uncertainties now that global structures, demands, and needs are altering too. World agriculture faces a threefold challenge as it firstly has to meet the changing demands for food from a larger and more affluent population to its supply; secondly, it has to ensure that the world's poorest people are no longer hungry; and thirdly, this must be done in an environmentally and socially sustainable manner (Godfray, Beddington, Crute et al, 2010). The big question remains how we must solve this global challenge.

World agriculture experiences a new phase as demands, needs and structures are not the same anymore as 30 years ago. One of the most important changes is the growing global population. Although agriculture has been largely successful in meeting the world's food demand, at present roughly 800 million people worldwide are still undernourished (FAO, 2015). It is estimated that world agriculture will have to feed even more people in the future: 9 billion people by 2050, which is around 2.5 billion more than today. This food has to be produced from the same amount or even less agricultural land due to urbanization, desertification, salinization, soil erosion and unsustainable land management. The loss in land is further being exacerbated by policy decisions to produce biofuels, such as corn, wheat, sugarcane and soybean on good quality agricultural land (Godfray, Beddington, Crute et al, 2010). This competition for land makes it also increasingly challenging to ensure that the world's poorest people are no longer hungry. One of the proposed solutions is to stimulate development in the agricultural sector. According to The World Bank (2008), growth in gross domestic product (GDP) in the agricultural sector has been shown to be at least twice as effective in reducing poverty as growth originating in other sectors. Agriculture also contributes to development as an economic activity, as a livelihood, and as a provider of environmental services, making the sector "a unique instrument for development" (The World Bank, 2008, p. 3). This view is supported by the Food and Agricultural Organization (FAO) (written by Liu, 2014), the United States Agency for International Development (USAID (a), 2016) and the G8 Summit (Feed the Future, 2014). These parties argue that growth by means of investments in the agricultural sector is the most important and most effective strategy to realize economic transformation, combat poverty and realize food security and nutrition goals. Agriculture has however left a huge environmental footprint and climate change, rising competition for land and water, and higher energy prices exacerbate this impact (The World Bank, 2008). Agricultural investments must therefore be implemented in an environmentally and socially sustainable manner to limit further environmental degradation (Godfray, Beddington, Crute et al, 2010).

There are numerous views on how to solve the global challenge, varying from the local food movement which aims for more self-reliant and resilient food networks, to biotechnological applications. The most dominated view by political authorities and intergovernmental organizations is to seek more sustainable production systems (Godfray, Beddington, Crute et al, 2010; The World Bank, 2008). This call for sustainable intensification entails that investments have to be mobilized to the agricultural sector in especially developing countries to produce more food from the same area of land while reducing the environmental impact (Godfray, Beddington, Crute et al, 2010; Liu, 2014). Although there is a call for more investments, the agricultural sector has never been a major target of foreign direct investment (FDI). Despite that the share of FDI into the agri-food sector of developing countries almost doubled in the periods 2000-2005 and 2006-2008, it is still low compared to other economic sectors. Over the period 2006-2008 only 5 per cent of the total FDI flows was accounted to the agri-food sector (Liu, 2014). Following the FAO, these low



investment rates in the agricultural sector in developing countries have resulted in low productivity and stagnant production (Liu, 2014). The tables might be turning as two big global crises starting in 2007, the world food crisis and the financial crisis, triggered a renewed interest in agricultural financing based on food security concerns (Miller & Jones, 2010). In order to secure food security, capital rich but resource poor countries have been outsourcing their food production to capital poor but resource rich (developing) countries (Grain, 2008 as cited in Weissleder, 2009). The renewed interest in Africa's land led to a sharp increase in FDI rates. After many years of disappointing numbers, the annual growth in primary industries due to FDI nearly six-folded to 22 million US dollars in 2015 (Mwiti, 2015). However, it is estimated by the FAO that investments should cover 80 billion US dollar every year to make crop and livestock production systems more intensive and more sustainable (Liu, 2014). An emerging vision to reach these investment needs is to redefine the roles of producers, the private sector and the state which should collaborate more actively (The World Bank, 2008). The private sector should invest in value chains to increase market access of smallholders and commercial farms, whereas the state must correct market failures, regulate competition, and engage strategically in public-private partnerships (PPP) to promote competitiveness and investments in the agricultural sector, and support the inclusion of smallholders and rural workers in value chains (The World Bank, 2008; Oxfam, 2014).

The majority of the international community shares the view that more agricultural investments are needed in developing countries to foster rural development and to overcome food insecurity and poverty. Following Cotula, Vermeulen, Mathieu and Toulmin (2011), the impact of FDI on local development depends much on how these foreign agricultural investments are structured as they can take on different investment models. Much of the current debate on investment models in FDI is between land-based investments and socially responsible business models. The former entails the buying or leasing of large pieces of land in developing countries, by domestic and transnational companies, government and individuals (Stop Africa Land Grab, 2016). Proponents of land-based investment argue that these deals can lead to increased productivity and employment, development of agricultural technology, and construction of rural infrastructure such as schools and health facilities (New Agriculturalist, 2009). On the contrary, contesters argue that land-based investments can lead to irreversible natural resource degradation caused by large-scale and harmful capital-intensive commercial farms, livelihood shortfall for smallholder-farmers, loss of indigenous farming practices, and rising in-country food insecurity due to loss of subsistence farming land (Abbink, 2011; Cotula, Vermeulen, Leonard & Keeley, 2009; Fisseha, 2011; Robertsen & Anderson, 2010). Socially responsible business models are based on inclusiveness. According to Vermeulen and Cotula (2010), business models are considered as more inclusive if they involve close working partnerships with local landholders and operators, and if they share value among the partners. Business models which are seen as more inclusive are joint ventures, tenant farming, the plantation/estate model, the hybrid business model, and contract farming (Future Agricultures, 2016).

Contract farming in particular is currently seen as a key inclusive business model in many PPP strategies launched in recent years under the G8's New Alliance for Food Security and Nutrition. The alliance is a shared commitment to achieve sustained and inclusive agricultural growth and raise 50 million people out of poverty over the next 10 years (ActionAid, 2015; New Alliance, 2012). Contract farming, whether formal or informal, can operate as a viable socially responsible business model to incorporate small-scale farmers into value chains and through contractual arrangements enable these farmers to have access to credit, seeds, technologies and markets. However, risks associated with contract farming are high transaction costs, reliance on a single buyer, risks of indebtedness, late payment and side-selling (Miller & Jones, 2010; Da Silva, 2005; Eaton & Shepherd, 2001; Glover & Kusterer, 1990). Glover (1987) even stated that contract farming is just another form of exploitation with limited equity impact, increasing socio-economic differences and transferring production risks to farmers.

One country which has received much attention from the private sector, the public sector, and donors is Ethiopia. Over the last decade, Ethiopia developed a rather investor-friendly climate, attracting more than over a billion US dollars in 2015 compared to only 14 million US dollars in 1995 (The World Bank, (a), 2015). Foreign investors come from all over the world, but economic relations with the Netherlands in specific are strong as over 130 Dutch companies have started a business in the country since 2003. Most of these businesses are found in agriculture and horticulture. The Dutch and the Ethiopian government are increasingly working together in PPPs to strengthen their relations and to reach more developmental impact (Government of the Netherlands, 2016). Since 2013, the Dutch Ministry of Foreign Trade and Development Cooperation has been collaborating with Heineken on the CREATE project (Community Revenue Enhancement through Agricultural Technology Extension). This PPP also involves two Ethiopian Government institutes which are the Agricultural Transformation Agency (ATA) and the Ethiopian Institute of Agricultural Research (EIAR), and the non-governmental organization (NGO) the European Cooperative for Rural Development (EUCORD) (Heineken N.V. 2013). The project makes use of contract farming and aims to increase food security, improve the livelihoods of smallholder farmers, and reduce reliance on imports by developing local barley production and connecting farmers to Heineken's supply chain in Ethiopia (Levy, 2014). Although contract farming has been practised in the world for more than a century, contract farming in Ethiopia is a rather new phenomenon as it has become a more accepted form of production only since the last three to four years. This was mainly due to the privatization of former state-owned breweries to multinational companies such as Heineken. The government is now planning to replicate the practice of contract farming to wheat producing farmers and agro-industries (Gessesse, 2015). Because there is no clear evidence what the impact of contract farming is on the livelihood and food security of local smallholders who work with these breweries, it is important to first investigate this impact before replicating the practice of contract farming to other agro-industries. To avert pitfalls and potential risks that can damage the local people and environment, research on contract farming in Ethiopia is imperative to ensure that future collaborations between farmers and companies, but also between the private and public sector, are sustainable and environmentally responsible solutions that contribute at the same time in meeting the global challenge.

## 1.2 Scientific and developmental relevance

Because contract farming in Ethiopia has become a more accepted and practiced form of production only four years ago, its impact on the value chain position, livelihood and food security of the local population is unexplored. In addition, following the United Nations Development Programme (UDNP, (a), 2015) and Asubonteng (2011), (international) public-private partnerships are limited in Ethiopia making it an unfamiliar subject in the country. Hence, the current literature and case studies on the impact of FDI in Ethiopia might give an incomplete overview. Even in general, only little research on FDI has touched upon the potential disadvantages and advantages of private-public partnerships in the agricultural sector (Hodge, 2004; Narrod, Roy, Okello, Avendano, Rich & Thorat, 2009; Poulton & McCartney, 2012; Oxfam, 2014). This research proves its relevance as it contributes in bridging these knowledge gaps in the foreign investment debate to conduct research on the CREATE project of Heineken. To conduct this research, the sustainable livelihood approach has been used, which enriches the current literature on livelihoods and contract farming. Much research has been conducted on the potential benefits of contract farming in the light of financial and human capital (Miller & Jones, 2010; Manunike, 2009; Da Silva, 2005; Eaton & Shepherd, 2001; Glover & Kusterer, 1990). In contrast, only little research has been conducted on the impact of contract farming focusing on all capitals and several livelihood outcomes such as food security and increased well-being (Kryger, Thomsen, Whyte & Dissing, 2010; Repar, Onakuse, Bogue, 2013). As this research is part of the 'follow the food programme', it contributes in a wider scope to the question what impact Dutch

investors have on local food security. Follow the food programme is a larger and more extensive research on the impact of Dutch agribusinesses on global and local food security. The programme is conducted in Ghana, Kenya and Ethiopia by Utrecht University, The Netherlands; St. Mary's University, Ethiopia; Fair & Sustainable; and Solidaridad. In the perspective of development, this research shows its relevance to investigate whether and in what form foreign direct investment can be beneficial for local development and food security.

## 2. Research objectives and questions

To contribute to the knowledge gap described above several research objectives and research questions had been formulated.

### 2.2 Research objectives

This research was set up to gain more understanding of the impact of the CREATE project on the value chain position, livelihood, and food security of the local smallholders who have been inserted into the malt barley value chain of Heineken. The first objective is to contribute to the question how the impact of foreign direct investment can be optimized to maximize the benefits and to minimize the inherent risks for all parties involved. This research aims therefore to get more knowledge about the impact of foreign direct investment, and in specific of contract farming, on the livelihood and food security of the local population. Second, the Ethiopian government is planning to replicate the practice of contract farming to wheat producing farmers and agro-industries. As contract farming has been a rather new concept in Ethiopia, there is no clear evidence on the impact of contract farming on contracted smallholders. It is therefore important to first investigate the impact of contract farming on the local population and offer lessons learned to ensure that future collaborations will lead to a positive and sustainable impact. Besides these two main objectives, this research contributes to a wider understanding of the impact of a PPP on the livelihood and food security of the local population, and finally, in the light of the 'follow the food programme', it aims to find more evidence on the impact of Dutch investors on local food security.

### 2.2 Research questions

To reach the abovementioned objectives, and to address the knowledge gap described in the previous section, the following main question has been formulated:

What is the impact of the CREATE project on the livelihood and food security of local smallholders who have been inserted into the malt barley value chain of Heineken as part of the CREATE project in Ethiopia?

The main question has been divided into four sub-questions:

1. What are the selection criteria local smallholders should adhere to before being eligible to take part in the CREATE project?
2. What are the terms and conditions of the CREATE project under which local smallholders are contracted?
3. How do the terms and conditions of the CREATE project affect the value chain position of contracted smallholders?
4. How does contract farming affect the livelihood and food security status of contracted local smallholders?

### 3. Theoretical framework and conceptual model

This section defines the main concepts and theories on which this research is based. First, the theoretical framework will discuss four main topics which are foreign direct investment, inclusive business models, agricultural value chain, and livelihood and food security. After, a conceptual model applicable to this research has been developed which shows the interrelatedness of the concepts in a visualized manner.

#### 3.1 Theoretical framework

##### 3.1.1 Foreign direct investment and local development

Foreign direct investment is defined by the OECD as “cross-border investment by a resident entity in one economy with the objective of obtaining a lasting interest in an enterprise resident in another economy” (OECD, 2013, p.1). FDI can be seen as a means for creating direct links between economies and, according to the OECD (2008), it can serve under the right policy environment as an important accelerator for local enterprise development. Benefits are an influx of foreign capital, employment creation and increased know-how, which improves both the recipient (‘host’) and the investing (‘home’) economy (OECD, 2008).

Up until 2007, foreign agricultural investments were mainly initiated to reach vertical (reduce production costs) or horizontal (seek new markets) integration. Since the global financial and food crises in 2007, an additional motive for agricultural investment has evolved. Investing countries are now much driven by food security concerns and appear to be resource-seeking rather than market-seeking (Hallam, 2011). Increased agricultural FDI inflows have especially been witnessed in resource rich African developing countries (Cotula et al, 2009). FDI inflows within African developing countries in general grew by nearly 80 per cent from 29 billion US dollars in 2005 to 53 billion US dollar in 2007 (Weissleder, 2009). One of the largest growths occurred in East African countries, in particular Ethiopia and Kenya. In 2014, FDI flows to East Africa increased 11 per cent, up to 6.8 billion US dollars (UNCTAD, 2015). The strong rise in FDI in African countries has not only been due to the global crises. An expanding global commodities market, consumer demand, population growth, rising corporate profitability of investment, trade liberalization and an increasingly FDI-friendly environment are other reasons to explain this strong growth (Weissleder, 2009; Hallam, 2009).

Looking in specific to FDI flows into the agricultural sector of developing countries, it is seen that there has been a marked rise since 2007-2008. The inflow of FDI in agriculture amounted to more than 3 billion US dollars per year by 2007, compared to only 1 billion US dollars in 2000. If food and beverages are included, the inflow rises to 7 billion US dollars in 2007 (FAO, 2009). Agricultural FDI inflows have been stagnating since 2009, but the inflows in the period 2010-2011 were still higher than the average for the period 2003-2007. The share of FDI that goes into the agri-food sector is however very low compared to other economic sectors, representing less than 10 per cent in 2011 (Liu, 2014). According to Hallam (2011) and the FAO (2009), the main form of recent agricultural investments is land acquisition for food production. Although recent numbers on agricultural foreign investments could not be found, indicators such as the land matrix suggest that globally, land acquisitions involved almost 45 million hectare of land, comprising 1257 land deals up to 2016. The majority of land deals and hectares involved is found in Africa. While land deals in the Democratic Republic of Congo involved the most hectares (more than 3 million), the highest number of actual deals took place in Ethiopia: 96 deals comprising roughly 1 million hectare from 2005 up until now (Land Matrix, 2016).

Despite the upsurge in agricultural foreign investments, the FAO (Liu, 2014) estimates that gross annual investments of 80 billion dollars are needed in primary agriculture and downstream services in developing countries to meet global food needs in 2050. One vehicle to reach the investment needs might be the PPP

modality, endorsed by the New Alliance for Food Security and Nutrition initiated by the G8. This New Alliance is a shared commitment by African leaders, private sector partners, and donors to achieve sustained and inclusive agricultural growth and raise 50 million people out of poverty over the next 10 years (Feed the Future, 2014). Since the beginning of the New Alliance, substantial resources have been allocated to public-private partnerships which work in the African agricultural sector. In 2010, it was estimated that more than 7 billion Euros were invested in companies operating in the world's poorest countries. In addition, donors channelled around 900 million US dollars into the PPP modality, a sharp increase compared to the 234 million US dollars in 2007 (Oxfam, 2014). PPPs are also increasingly used in development cooperation policies. This is for instance seen in the Dutch development policy called the Aid & Trade agenda. The Netherlands is internationally recognized as an expert and innovative partner for agricultural development and food security. To reach worldwide food security, the Netherlands takes part in many PPPs. The collaboration between the Dutch government, knowledge institutes, private sector, and civil society organizations is also called the Dutch Diamond Approach. The Dutch government promotes and offers subsidies to Dutch companies to invest in developing countries to stimulate economic development and contribute to poverty alleviation and food security in developing countries (Ministerie van Buitenlandse Zaken, 2013). At the same time, the Dutch government can via this approach play a leading role in the current issues of resource scarcity and sustainable food production (het Hart, Hoogeveen, Janssen, Kropff & van Rijsingen, 2011).

The true question in the FDI debate is however not whether foreign direct investment should contribute to meeting investment needs but how its impact can be optimized to maximize the benefits and to minimize the inherent risks for all involved (FAO, 2009). Foremost, it is difficult to generalize what impact FDI has on local development since much depends on how foreign investments are structured. Based on the investment model, they may either deliver local benefits or carry environmental and social risks which hit disproportionately the local people (Cotula, Vermeulen, Mathieu & Toulmin, 2011). Partnerships for instance between private and public actors are an increasingly popular investment model to overcome market or government failures since partners can pool their resources, knowledge, and capabilities (Kolk, Tulder & Kostwinder, 2008). Governments in Africa are turning to large-scale partnerships with donors and multinational companies to stimulate investment in agriculture (Oxfam, 2014). The aim is a win-win situation where the partnerships serve firms in establishing a cost-reducing and robust supply chain to offer farmers at the same time a new market opportunity embedded in an improved business environment that may result in additional income generation (Kolk, Tulder & Kostwinder, 2008). Although positive effects such as increased market opportunities have been witnessed, a question can be posed in respect of the durability of the institutional changes induced by partnership as it is not yet clear how the differences in partnership modalities influence longer-term effects (van Wijk & Kwakkenbos, 2011). Moreover, engaging in a development project is often not financially viable or desirable in the absence of donor support due to the high costs of trainings. This illustrates a risk for smallholders if donors decide to pull out of the partnership or if NGOs reduce or even stop their support (Oxfam, 2014; Bachke, 2010). Currently the most widely applied investment model, and probably the most debated one is the purchase or long-term leasing of agricultural land for food production, also known as land-acquisition or land grab (FAO, 2009). These large-scale investments can initiate increased productivity and employment, development of agricultural technology, and construction of rural infrastructure (New Agriculturalist, 2009). On the contrary, land deals may lead to irreversible natural resource degradation, livelihood shortfall for smallholder-farmers, loss of indigenous farming practices, rising in-country food insecurity due to loss of subsistence farming land, and the potential suffering from the natural resource curse (Abbink, 2011; Cotula et al, 2009; Fisseha, 2011; Robertsen & Anderson, 2010). Due to these possible negative effects, it is now argued that this form of foreign investment is the least likely to deliver significant developmental benefits to the host country (FAO 2009; Kugelman & Levenstein, 2013; Hallam, 2011). According to the FAO (2009), other forms of investment such

as contract farming and outgrower schemes can offer just as much security of supply. These forms of investment are based on different business models and hold a certain degree of inclusiveness. Inclusive business models tend to increase access to goods, services, and livelihood opportunities for low-income people and undertake targeted measures to integrate these people in the value chain by means of trainings and extending credit. However, the concept of inclusive business often runs counter to established structures of maximizing profit and minimising costs. Another challenge involves poor understanding of the needs and wants of the low-income target group such as consumption patterns and informal competition by international companies and organisations (Rösler, Hollmann, Naguib, Oppermann & Rosendahl, 2013).

Following Hallam (2011), there is no one-sided answer whether FDI can have a positive impact on local development as much depends on how foreign investments are structured. The key issue is the extent to which benefits from foreign investments spill over into the domestic sector in a synergistic and catalytic relationship with existing smallholder production systems (FAO, 2009). Research conducted in 2014 by the FAO argues that business models which give farmers an active role and leaving them in control of their land have the best cards to do so (Liu, 2014).

### 3.1.2 Inclusive business models and contract farming

The term business model refers to the way an enterprise creates and captures value within a market network of producers, suppliers and consumers. In other words, it reflects 'what a company does and how it makes money from doing it' (Vorley, 2008, as cited in Miller & Jones, 2010). A business model is linked to both the business strategy and business operations (Miller & Jones, 2010). What business model is most appropriate depends on the specific circumstances and the commodity concerned (FAO, 2009).

It is currently argued that inclusive business models have the most positive and long-lasting effects on local economic and social development (Liu, 2014). According to Vermeulen and Cotula (2010), business models are considered as more inclusive if they involve close working partnerships with local landholders and operators, and if they share value among the partners. Some models involve large-scale farming but with closer involvement of local landholders whereas other models bring smallholder farmers into the value chain (Vermeulen & Cotula, 2010). Inclusive business models are intended to circumvent existing market failures and inefficiencies by integrating the poor, either on the demand side or on the supply side. Integration on the demand side as clients means for instance providing consumer products, healthcare, water and sanitation, education, or financial services to the poor. Integration on the supply side as suppliers or employees occurs for example in the agricultural and agro-processing sector, when local crops are sourced from small-scale farmers (Rösler, Hollmann, Naguib, Oppermann & Rosendahl, 2013). Inclusive business models encompass a wide range of arrangements, such as shared ownership of key assets, formalised joint ventures, profit-sharing arrangements, contract farming or local content schemes, community land leases and management contracts, or local service agreements. It is important to note that "none of these models is perfect" (Vermeulen & Cotula, 2010, p. 3).

One type of inclusive business model which currently gains much renewed attention is contract farming. Contract farming is an important component of many current public-private partnerships (PPPs) in developing countries and is considered a key business model in many of these PPP strategies launched under the G8's New Alliance (ActionAid, 2015). Contract farming is a form of vertical coordination within an agricultural commodity chain and is defined by the FAO as follows:

Contract farming refers to long-term supply agreements between farmers and agribusiness processing/marketing companies/buyers that bring mutual gains and normally include price and supply

arrangements (date, quantity and quality). Contractual arrangements may be verbal or written and vary widely, depending on the countries, crops and companies concerned. Schemes usually entail a range of activities (services) that secure access to produce – as in-kind input supply or on credit – extension services, transport for produce, and credit guarantees (Paglietti & Sabrie, 2012, p. 1).

To the extent whether contract farming is inclusive depends on how the model is structured. Contract farming can lead to new, reliable sources of income to farmers and can overcome imperfections in input and output markets by providing credit, seeds, machinery, human capital, and market access to farmers, and offering them a better position in the value chain. But in practice, an inclusive business model can also be exclusionary, as better-resourced farmers tend to capture the contracts, while poorer farmers work as labour on the contracted farms. In addition, without adequate competition among contracting firms, a lack of informed farmers and no rule of law, contract farming may lead to economic serfdom for peasant farmers or a food system that only meets the economic objectives of power elites (Poulton et al. 2008, as cited in Vermeulen & Cotula, 2010).

Despite the potential risk of being exclusionary, contract farming has been a widespread business model in the agricultural sector in both developed and developing countries as a means of commercially organizing agricultural production of both large-scale and small-scale farmers (Strohm & Hoeffler, 2006). Small-scale farmers frequently experience difficulties in the production and marketing of their products. They usually sell their produce to middlemen or on local markets at set prices. This often restricts farmers to cover all the expenses they incur in the production and marketing process. Moreover, they encounter the risk of not being able to sell the entire amount of their produce. Processors in contrast are often not able to get the quantity and quality of the product they are looking for (Strohm & Hoeffler, 2006). According to Strohm and Hoeffler (2006), contract farming is a possible solution to improve such a situation. There are five broad types of contract farming that can be distinguished. The first is the centralised model, in which an agribusiness buys from a large number of smallholders under strict quality control conditions and predetermined quantities. This type of contract farming usually involves providing technical support and inputs, and close monitoring of the production process. The second type is the nucleus estate model in which the agribusiness owns the plantation next to the independent contracted farmers and is most of the times used to guarantee throughput for the processing unit. The third model is the multipartite model and involves diverse actors such as governments, NGOs, and service providers. This type of model is present when it involves dealing with farmers' organisations such as cooperatives, as well as joint ventures between the government and the private sector. This type of model is seen as the best fit to integrate local smallholders. The fourth model is called the informal model and is characterised by individual entrepreneurs and small companies which contract farmers on a seasonal basis. This model has limited resources and its success depends on other actors' support such as the government or other service providers. The fifth and final type is the intermediary model. This model involves intermediaries between producers and buyers who subcontract farmers. Hence, a direct link between producer and farmer is absent which might result in the risk of losing control over quality, quantity and price. In addition, farmers are not protected from market uncertainties. Although these various types of contract farming are seen as distinctive models, they are not mutually exclusive (Melese, 2012).

Contract farming can accelerate several key benefits for the local population. These are access to local and export markets, access to appropriate input supplies such as seeds in timely fashion, increased access to credit despite a lack of collateral, provision of market-focused technical training and assistance, and support in the development and achievement of quality standards and certification. In addition, it reduces market risks and increased income stability for farmers (Miller & Jones, 2010; Da Silva, 2005; Eaton & Shepherd, 2001; Glover & Kusterer, 1990). Various studies support the view that contract farming is a viable business



model in transmitting these benefits and consequently contribute to local development. A case study conducted in the agricultural sector of Malawi showed that much of the economic growth has derived from the emergence of contract farming as it led to an increase in agricultural income for rural and urban farmers. In addition, it was seen that contract farming practices contributed to an alleviation of hunger and poverty (Repar, Onakuse, Bogue, 2013). Manunike (2009) argues that this type of business model reduces the loss of indigenous farming knowledge and stimulates a direct knowledge transfer between the international investor and local farmer. Contract farming furthermore sustains the income generation opportunities of smallholder farmers and provides opportunities to harvest their own crops on the side for subsistence.

Other studies suggest that contract farming is not the panacea to local development as many undesired effects can occur as well. Following Smalley (2013), contract farming can lead the farmer to shift in livelihood strategy from food crops to cash crops, increasing their vulnerability on food insecurity. Adverse effects on local food availability are reported in Kenya, Tanzania and India (as cited in ActionAid, 2015). The view that contract farming in developing countries can result in decreased food production and increased food security due to concentration on contract crops is supported by various other studies (Glover, 1994; Clapp, 1994; Morvaridi, 1995; Rehber, 1998, as cited in Kirsten and Sartorius, 2002). Moreover, according Isakson (2011) it is likely that increased market participation in the long run could lead to the replacement of traditional subsistence farming practices with more uniform agricultural practices. When farmers have improved access to markets, they tend to replace their diverse set of crops with a few high yielding modern varieties that could provide them with higher incomes. However, crop diversity is the cornerstone of long-term food security, as it provides genetic raw material, enabling crops to adapt to changing environmental conditions, including evolving pests and climate change (Isakson, 2011). Other bottlenecks have been witnessed in honouring contracts. A case study in the pineapple industry in Ghana conducted by Harou and Walker (2010) showed that verbal agreements were not honoured due to sudden and unanticipated changes in the pineapple market. Some firms neglected to pick up the fruit from the smallholders, leaving them with unsellable produce and without payment. Although written contracts can mitigate the risk of not honouring contracts by serving as a focal point to enforce compliance, smallholders typically have little capacity to prosecute firm breach of contract and firms are often unwilling to jeopardize the relationships on which successful contracting commonly depends (Narayanan, 2010, in Barrett, Bachke, Bellemare, Michelson, Narayanan & Walker, 2012). Insofar contracts are honoured and contract farming does generate economic gains to participating farmers, this naturally leads to rising spatial inequalities and it can even reinforce geographic disadvantages within countries (Barrett, Bachke, Bellemare, Michelson, Narayanan & Walker, 2012). Other risks associated with contract farming are high transaction costs, creation of dependency, risks of indebtedness, late payment and side-selling (Miller & Jones, 2010; Da Silva, 2005; Eaton & Shepherd, 2001; Glover & Kusterer, 1990).

Despite the serious challenges, in recent years contract farming is being promoted by both African and Western governments and development agencies as a coordination model which can facilitate the integration of small farmers into global agricultural value chains (Norton, 2014; Da Silva, 2005). In addition, private companies increasingly make use of contract farming to set up their own 'sophisticated' local value chain in developing countries to overcome market constraints and link local farmers to global consumers (Norton, 2014). The implications of these new global and local value chains are discussed in the next section.

### 3.1.3 Governance of agricultural value chain

Agricultural markets are rapidly globalizing and generating new production and distribution systems. As a result, agricultural value chains capture a growing share of the agri-food systems in developing countries (Bolzani, de Villard & Dey de Pryck, 2010). A value chain is a set of linked activities that work together to add

value to a product. It encompasses the flow of products, knowledge and information, finance, payments, and the social capital needed to organize producers and communities. This is different than a supply chain, which refers to logistics such as transportation and storage (Norton, 2014).

Value chains consist of a wide range of activities, and an agricultural value chain can include the development and dissemination of plant and animal genetic material, input supply, farmer organization, farm production, post-harvest handling, processing, provision of technologies of production, grading criteria, cooling and packing technologies, industrial processing, storage, transport, finance, and feedback from markets (Norton, 2014). Agriculture in developing countries is often characterized by dual value chains (presented in figure 1) working in parallel for the same product. The first type of value chain is the so-called informal or traditional value chain. Smallholders are frequently involved in informal chains that deliver products to local middlemen who in turn supply to small local stores, generally governed through spot market transactions (Norton, 2014; Bolzani, de Villard & Dey de Pryck, 2010). The second type of value chain is called formal or modern value chain, characterized by vertical coordination and integration, and agro-industrial processing (Bolzani, de Villard & Dey de Pryck, 2010). Formal value chains can supply the same product, usually in better or more uniform quality, from larger farms to more commercial wholesalers and from there to supermarkets or exporters (Norton, 2014). These modern agricultural value chains are growing and becoming more sophisticated as countries industrialize and taking a stronger position in global markets (Bolzani, de Villard & Dey de Pryck, 2010). In addition, as local governments more frequently choose to put restrictions on the import of a certain crop, foreign investors are forced to develop their own “modern” value chains (van Wijk & Kwakkenbos, 2011).

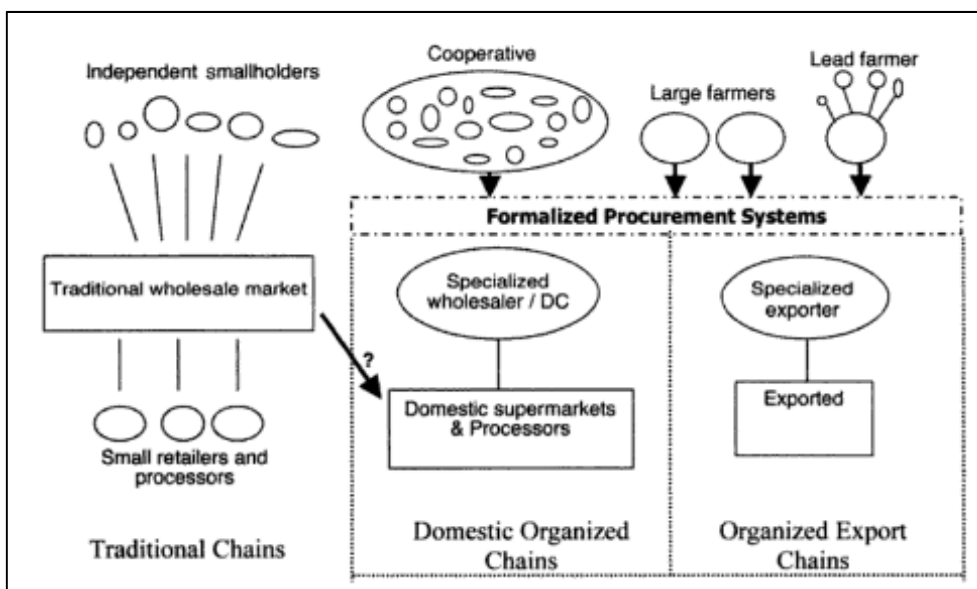


Figure 1: An overview of traditional and modern agricultural value chains (McCullough, Pingali & Stamoulis, 2008, p. 17).

A central concept related to value chains is value chain governance. Following Webber and Labaste (2010), governance is a “description of the dynamic distribution of power, learning, and leadership in standards and strategy setting among a value chain’s firms” (p. 20). The most common distinction of governance types in literature on global value chains suggests five main types of governance which are defined as markets, modular, relational, captive, and hierarchies (Gereffi, Humphrey & Sturgeon, 2005). An overview of governance types is provided in figure 2. The governance types are shaped by the complexity of the information and knowledge that needs to be transferred, the extent to which this information and knowledge can be communicated simply and clearly, and supplier competence (Prowse, 2012). For instance, standard products which require no transfer of information are frequently transacted via markets, which

demand almost no control. On the contrary, highly-differentiated products which require much information about the quality and attributes of a product are transacted through hierarchies where one firm covers and controls numerous nodes in the supply chain. This is also known as vertical integration with internal control coming from one centralised decision-making point (Prowse, 2012; Gereffi, Humphrey & Sturgeon, 2005). Suppliers in modular value chains make products to a customer's specifications, which may be more or less detailed. Relational linkages are characterized by complex interactions between buyers and sellers and are often managed by strategic partnerships. Finally, captive value chains are networks in which small suppliers are dependent on much larger buyers. These networks are known for their high degree of monitoring and control by lead firms (Prowse, 2012; Gereffi, Humphrey & Sturgeon, 2005).

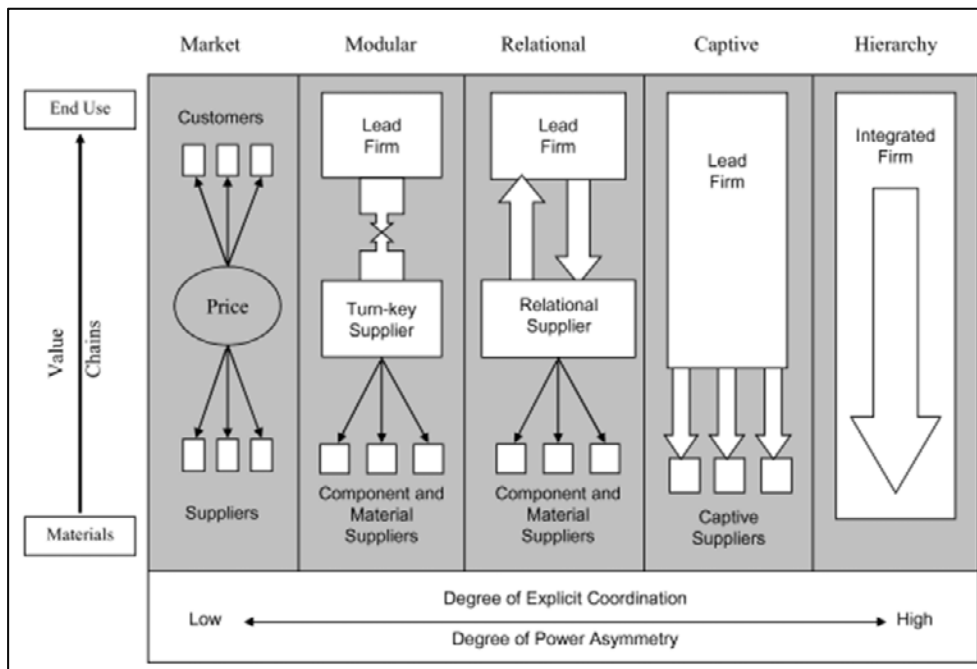


Figure 2: Five governance structures in global value chains (Gereffi, Humphrey & Sturgeon, 2005).

Subsistence farmers in traditional agricultural value chains mostly sell their produce under market governance, themselves deciding to whom, when, where and for which price. No contractual agreements are in place which means that a traditional agricultural value chain is characterized by spot market transactions. This entails that the central governance mechanism is price based and almost none hierarchical control and coordination exists. Modern agricultural value chains are left in charge by transnational firms, multinationals and supermarkets specialized in processing and distribution. These value chains are characterized by much hierarchical control and coordination, and have a high degree of power asymmetry (Prowse, 2012; Gereffi, Humphrey & Sturgeon, 2005). As was seen in the previous section on business models and contract farming, both Western and African governments are promoting the integration of smallholder farmers into agricultural value chains by means of contract farming. Contract farming is usually an example of captive governance, where farmers are dependent on and controlled by the lead firm (Prowse, 2012). Captive governance is characterized by a high degree of monitoring and the lead firm sets the specific conditions under which a product is bought. Captive linkages control opportunism through the dominance of lead firms, but provide at the same time enough resources and market access to the subordinate suppliers to make exit an unattractive option (Gereffi, Humphrey & Sturgeon, 2005). Hence, where contract farming can lead to more expanded markets and certainty, it can also limit the farmers' direct access to influence market governance due to terms and conditions under which the farmers are contracted (Repar, Onakuse & Bogue, 2013; Vorley, 2002), and transfer costs and risk to the weakest nodes

in the chain (Bolzani, de Villard & Dey de Pryck, 2010). The exact type of governance can vary greatly according to the type of contracts and arrangements (Kirsten & Sartorius, 2002). Contracts are always binding agreements but can either be formalized in the legal system or be informal. They typically involve agreements that specify the roles and responsibilities of the producer and the buyer. On the production side, terms are specified regarding timing, volume and quality and outputs. On the buyer side, commitments are made regarding inputs, technical assistance, purchasing and financing (Miller & Jones, 2010). For smallholder themselves, much depends on the potential livelihood gains they can gain when signing a contract. While some smallholders participate in response to observed past profits of other farmers, other smallholders choose deliberately not to participate due to perceived risks which could damage their livelihood prospects (Barrett et al. 2012).

### 3.1.4 Livelihood and food security

Both the shift in value chain governance and the benefits and the risks of contract farming described above can significantly impact the livelihood of the contracted farmers. According to the Department for International Development (DFID) a 'livelihood comprises the capabilities, assets and activities required for a means of living' (DFID, 1999, p. 1). The livelihood framework, depicted in figure 3, is a tool developed by the Sustainable Rural Livelihoods Advisory Committee to improve the understanding of in particular the livelihoods of the poor. It presents the main factors that affect people's livelihoods and shows the relationship between these factors. It is important to note that none of the arrows implies direct causality though they do imply a certain degree of influence (DFID, 1999).

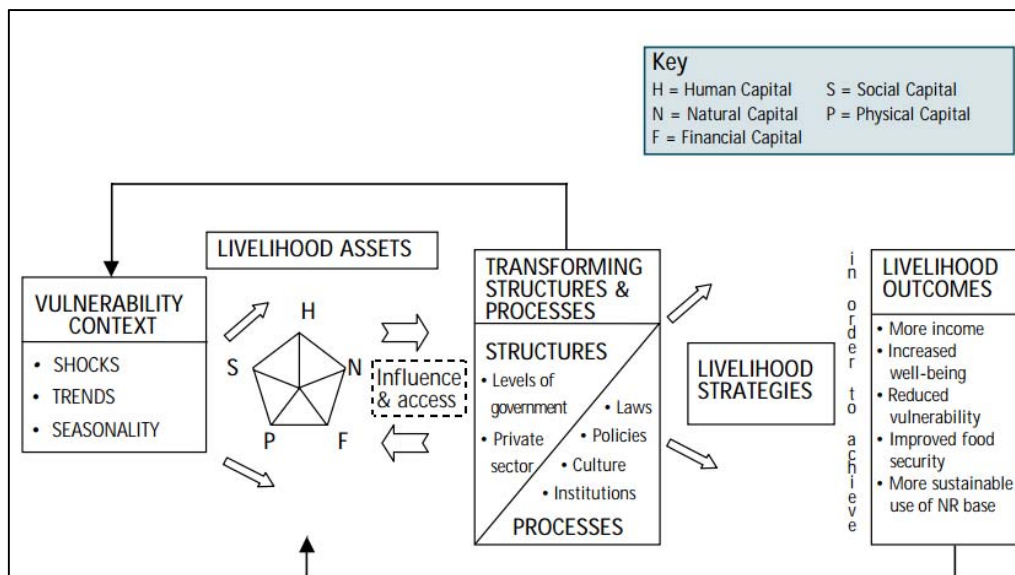


Figure 3: The sustainable livelihood approach (DFID, 1999).

The framework is primarily concerned with people and it seeks to gain an understanding of people's strengths, also called assets or capitals. These capitals upon which livelihoods are built are identified as *human* (skills, knowledge, ability to labour and good health), *social* (networks, connectedness, relationships of trust and reciprocity, and memberships), *natural* (natural resource stocks, for instance, land, forests, marine, from which resource flows and services are derived), *physical* (infrastructure and producer goods) and *financial* (financial resources as available stock and inflow of money). The shape of the pentagon is used to show schematically the variation in people's access to the capitals. The centre point of the pentagon indicates zero access to capitals while the outer lines represent maximum access to capitals. Different communities or social groups have different shapes of pentagons, depending on their degree of access.

Another important point to note is that access to a single type of capital can generate multiple benefits in other capitals (DFID, 1999)

As can be seen from figure 3, the assets are influenced by several trends and processes. The vulnerability context is the external environment in which people exist. People's livelihoods and the availability of assets are affected by critical trends as well as by shocks and seasonality over which they have limited or no control. Examples are economic shocks and trends, employment opportunities, resource conflicts, and governance trends. These contextual factors are important to understand because they have a direct impact upon people's assets and the options they have to pursue a decent livelihood. Depicted on the right hand of the pentagon are the structures and processes. The structures in the framework are the so-called hardware: the organisations, both private and public which set and implement policy and legislation, deliver services, purchase, trade and perform all manner of other functions that affect livelihoods. Structures exist from multinational to local level. In contrast, processes can be seen as software. They determine the way in which structures and individuals operate and interact. The processes also operate at various levels and there is often overlap and conflict between them. Another aspect of the framework are livelihood strategies. This is the overarching term used to describe the range and combination of activities and choices that people do and make in order to achieve their livelihood goals. Livelihood outcomes, the box on the right, are the achievements of livelihood strategies and can consist of among others increased well-being, more income and food security (DFID, 1999).

Food security is one of the livelihood outcomes which has received much attention of international organizations, donors and the public sector for many decades. During the World Food Summit held in Rome in 1996, the following definition of food security was formulated: "food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (FAO, 2008, p. 1). This definition shows four dimensions of food security which are access, availability, utilization and stability. Access to food refers to the economic and physical access of food in terms of income, expenditure, markets and prices. Food availability addresses the supply side of food security and is determined by the level of food production, stock levels and net trade. Food utilization is defined as the sufficient energy and nutrient intake by individuals as the result of good care and feeding practices, food preparation, diversity of the diet, and intra-household distribution of food. Food stability measures the stability of the other three dimensions over time in terms of the access to adequate food intake on a periodic basis. All four of these dimensions must be realized simultaneously in order to be classified as food secure (FAO, 2008). This concept of food security is most commonly associated with national or international level. Adequate availability, access, utilization and stability at the national or international level, does however not in itself lead to household level food security. Household food security focuses on the food security status of different members within a household. According to the FAO, households are food secure 'when they have year-round access to the amount and variety of safe foods their members need to lead active and healthy lives' (FAO, 2010, p. 1). Hence, looking at food security at the household level, food security refers 'to ability of the household to secure, either from its own production or through purchases, adequate food for meeting the dietary needs of all members of the household' (FAO, 2010, p. 1). The nutritional status of each member depends on several conditions. First, the food available to the household must be shared according to individual needs. Second, the food must be of sufficient variety, quality and safety. Finally, each family member must be in good health in order to benefit from the food consumed (FAO, 2010). There are two reasons why a household may not guarantee food security for all its members. First, the ability to acquire enough food may not be converted into actually buying the food. Household preferences may prioritize buying other goods and services, such as school fees, over food. Second, the intra-household allocation of the food may not be based on the needs of individual members. For instance, one household may involve both

undernourished and obese members (Pinstrup-Andersen, 2010). The first reason in particular is applicable to this research as an increase in financial capital does not necessarily have to result in improved food security. Households may choose for other livelihood strategies instead.

A livelihood can be influenced by many external factors, structures and processes. Smallholder farmers who experience a transition from market governance to contract farming in a captive network are likely to see their livelihoods impinged. For instance, a cross-case analysis conducted by van Wijk and Kwakkenbos (2011) examined five beer-public-private partnerships which aimed to set up a sorghum supply-chain in various African countries. It was seen that farmers got access to training in crop management and post-harvest treatment, market opportunities increased, and farmers were better organized in either cooperatives or nucleus farm meaning that both human and physical capital increased. However, in previous sections it was also seen that contract farming can have a severe impact on smallholders' livelihood as it can limit the farmer's bargaining power, increase farmers' risks of indebtedness, and it can lead the farmer to shift from food crops to cash crops. These changes have a negative effect on human and financial capital and lead to a decreased state of food security.

It is difficult to generalize what impact foreign investment, and in particular, contract farming has on local development, livelihood and food security as much depends on how foreign investments are structured. It is therefore important to find an answer to the question how the impact of FDI can be optimized to maximize the benefits and to minimize to inherent risks for all involved.

### 3.2 Conceptual model

The theoretical framework consists of four main concepts which are foreign direct investment, inclusive business models, governance of agricultural value chain, and livelihood and food security. These concepts are put into a conceptual model to get a visual depiction of this research. As can be seen from figure 4, this research starts on the left with foreign direct investment as overarching concept. An integral part of a foreign investment is how that particular investment is structured and how that investment creates and captures value within a market. This research focuses on inclusive business models, and in specific on contract farming. This choice is reflected in the yellow arrow flowing out of foreign direct investment. The next part of the conceptual model concerns the agricultural value chain. A business model defines for a large extent how a value chain is structured. An agricultural value chain based on contract farming comprises different nodes and support activities than a value chain based on for instance a joint venture. The relationship between an inclusive business model and the agricultural value chain is shown by means of blending arrows. The separate blue arrows represent the various nodes in the value chain. As was seen in the literature, a central concept related to value chains is value chain governance. Governance correlates with how the nodes in the value chain are organised and is distinguished in five types which are markets, modular, relational, captive, and hierarchies, each having their own characteristics. Hence, governance flows out of the value chain, depicted by the orange arrow. Based on studies described above on FDI, business models and value chain governance, it is assumed that the CREATE project (a foreign investment) has substantial impact on the livelihood and food security of the local smallholders who are part of the project. It is predicted that all five livelihood capitals and food security status are affected by the project. This is shown by the box on the right, which is impacted by the long arrow, consisting of the three smaller arrows. It is important to note that the impact on livelihood and food security is not necessarily a positive one, as negative consequences can occur as well.

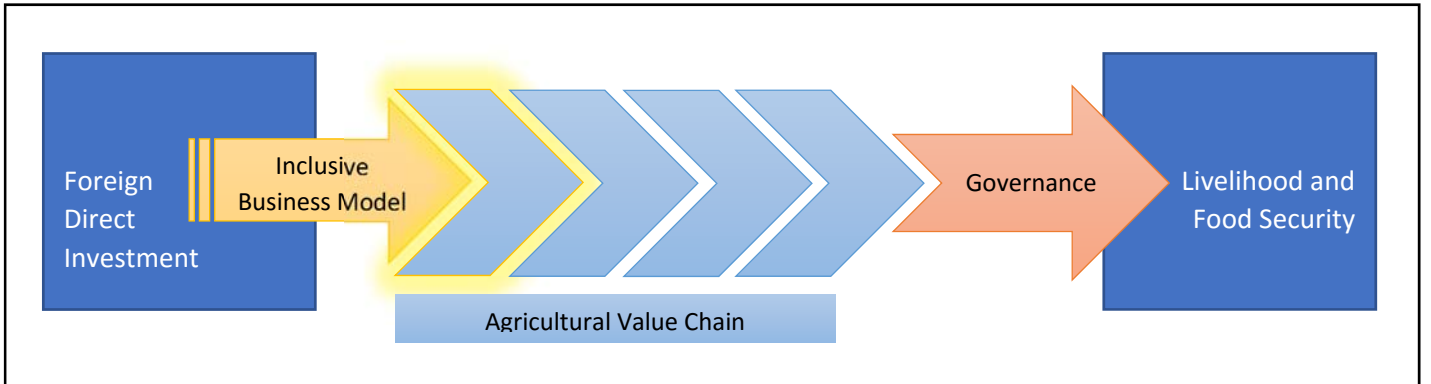


Figure 4: Conceptual model

## 4. Regional framework

The regional framework sets out the broader environment in which this research took place. Topics to be discussed include Ethiopia's political environment and the country's institutional framework, human and economic development, the Ethiopian policy on FDI, food security and livelihood, the malt barley sector, and Heineken and the CREATE project.

### 4.1 Political environment

The Federal Democratic Republic of Ethiopia is a land locked country located at the north-east of Africa, neighbouring Djibouti, Eritrea, Kenya, Somalia, South Sudan, and Sudan. The capital city is Addis Ababa, which is also the seat of the African Union and the United Nations Economic Commission for Africa. Ethiopia is a federal country and the constitution of the country which was adopted in 1995 allows a multi-party political system. The country is a multi-ethnic state with a large variety of languages and dialects. The official language is Amharic, but Oromiffa and Tigrigna are widely spoken as well (Ethiopian Investment Commission, 2015). The total population has risen sharply over the last few decades and was set at over 97 million people in 2014 (The World Bank (b), 2015). The majority of the population is rural and urbanisation rates lie only at 19 per cent. Although there have been several protests going on against the government at the time of the research, Ethiopia is considered as one of the most stable countries in Africa (Ethiopian Investment Commission, 2015).

Ethiopia's government is based on four administrative structures which are regions, zones, woredas and kebeles. A woreda is an administrative unit which is similar to a district. Each woreda is generally composed of a number of kebeles. A kebele can be seen equal to a county, and is the smallest formal unit of Ethiopia's local government administrative structure. Hence, the country is divided into regions, which are subdivided into zones, which in turn are sub-divided into woredas and finally in kebeles. Ethiopia comprises nine regions, 66 zones, and 556 woredas (Fisseha, 2011). The administrative structures can be seen below in map 1.



Map 1: Administrative regions of Ethiopia (Vidiani, 2011).



## 4.2 Human and economic development

Ethiopia's economy has experienced a vast increase for the last decade. The annual average GDP growth was almost 11 per cent for the last 10 years, growing from roughly 43 billion US dollars in 2004 to around 145 billion US dollars in 2014 (The World Bank (c), 2015). The country relies heavily on agriculture, which accounted for 42.9 per cent of the GDP and 73 per cent of employment in 2013 (World Bank Group, 2015). The overall economic growth of the country is thus largely dependent on the performance of the agricultural sector (Ethiopian Investment Commission, 2015). Besides the economic growth, Ethiopia is one of the ten countries that has attained the largest gains in its Human Development Index (HDI) over the last couple of years. According to the national human development report of the United Nations Development Programme in 2015, Ethiopia's HDI increased from 0.284 to 0.442 between 2000 and 2014, which represents an increase of 55.6 per cent (UNDP (b), 2015). Following The World Bank, the country has experienced significant progress in key human development indicators such as primary school enrolment rates, child mortality, and access to clean water (The World Bank (d), 2015). Despite the economic and social progress, Ethiopia is still one of the poorest countries in the world, classifying the country in the low human development category. Compared the other countries in the world, Ethiopia is positioned at 174 out of 188 countries and territories (UNDP (b), 2015). Ethiopia is however determined to become a middle-income country by 2020 and therefore aims to implement many ambitious and promising policies and projects (MoFED, 2010). Attracting FDI is one of those policies, as will be discussed in the next section.

## 4.3 Ethiopian policy on foreign direct investment

Ethiopia is slowly witnessing a shift from an agricultural country to a manufacturing country, which is reflected in policies known as Agricultural Development Led Industrialization (ADLI) and Industrial Development Strategy (IDS). ADLI was developed in the mid-1990s and the underlying philosophy is that agricultural development plays a leading role in the industrialization process. In the early 2000s, the IDS was implemented and its primary principle was to enhance a linkage between industry and agriculture. Given the agrarian nature of the economy, the rationale is that industrial development should rely on agriculture in order to serve the industry by providing agricultural inputs and consumer goods. Various policy instruments were introduced to support and guide industrial development such as liberalization of the foreign exchange market, removal of subsidies and export tax rebate, reduction of the import tariff and the introduction of a new investment code (Gebreyesus, 2013). This new investment code is reflected in the outward looking interest of the Ethiopian state on attracting FDI to overcome development issues and to bring social improvement. Ethiopia's mission is to 'enhance investment in the country by promoting investment opportunities through creating a conducive investment climate and providing efficient services to investors so as to bring rapid and sustainable economic development in the country' (Ethiopian Investment Commission, 2015, preface). Attracting foreign investment is also part of the Growth and Transformation plan, which is Ethiopia's poverty reduction strategy paper to address development issues. According to the Ethiopian Investment Commission, Ethiopia aims to attract FDI to create jobs, to encourage technology and know-how transfers to the local population, and to increase foreign exchange earnings. At the moment, Ethiopia's import rates are much higher than its export rates. The underlying thought is to attract foreign investment which can lead to an increased productivity, which in turn leads to higher exports (Ethiopian Investment Commission, 2016, informal conversation). Ethiopia especially aims to attract foreign investors who invest in selected priority areas which are manufacturing industries, such as the textile and garment industry, agro-processing industry, the meat, milk and honey industry, and industries which are crucial for import substitution involving pharmaceuticals, chemicals, construction materials and metal and engineering (Ethiopian Investment Commission, 2015).

In order to attract foreign investors, the Ethiopian government formulated an incentive policy. The investment incentives can be divided into fiscal and non-fiscal incentives. The applicability of the incentives depends on the sector in which investors are active and whether the investor targets the local market or export market. The fiscal incentives which concern to an investor who produces for the local market (e.g. Heineken) are the custom duty exemptions and the income tax exemptions. Investors who export their products additionally gain exemptions for exporters. The non-fiscal incentives which apply to an investor as Heineken are the permission to import machinery and equipment necessary for investment through suppliers' credit and the permission to carry forward losses. The latter entails that an investor who has incurred loss within the tax exemption period is allowed to carry forward such loss (Ethiopian Investment Commission, 2015). In addition to these fiscal and non-fiscal incentives, the Ethiopian government signed a bilateral investment promotion and protection agreement with various countries. For the Netherlands in specific the bilateral agreement is to avoid double taxation on companies and individuals to improve the trade system between the two countries, enhance investment activities, and to allow technology transfers between Ethiopia and the Netherlands (AWIB, 2012).

Since the Ethiopian government started to promote foreign investment, the amount of FDI has steeply risen from 170.000 US dollars in 1992, to over a billion US dollars in 2014. The rise in FDI is seen in table 1. Ethiopia is now even the third largest recipient of FDI in Africa and the top receiver of East Africa (Tsegaye, 2014; Lemma, 2015). According to the 2014 World Investment Report of the United Nations Conference on Trade and Development, the majority of Ethiopia's increased investment flows can be accounted to mergers and acquisitions and greenfield projects in light manufacturing industries from China, Turkey and India (UNCTAD, 2014). The agricultural sector represents roughly one-third of FDI inflows. The main agricultural sectors are flori/horticulture, meat production, biofuel and food production (Weissleder, 2009). Another segment which has been flourishing since a few years is the Ethiopian beverage industry. According to the Ethiopian Food Beverage and Pharmaceuticals Industry Development Institute, Ethiopia's beverage industry is showing a massive increase as multinational companies are heavily attracted to the industry. Especially alcoholic beverage industries have a 'lion's share' in terms of investment and market coverage (Ethiopian News Agency, 2016). Unfortunately, no specific numbers on foreign direct investment per sector in Ethiopia could be found.

1992	1995	2000	2005	2010	2012	2013	2014
170.000	14.140.000	134.640.000	265.11.675	288.271.568	278.562.822	953.000.000	1.200.000.000

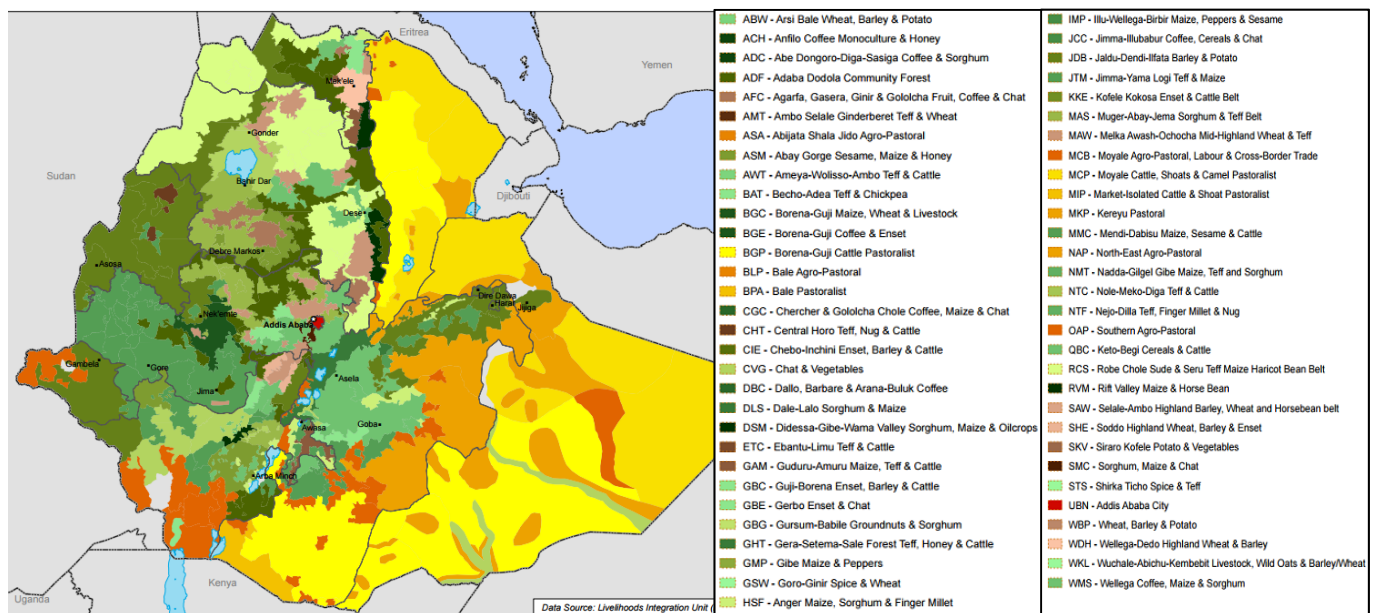
Table 1: Foreign direct investment in US dollars in Ethiopia between 1992 and 2014 (The World Bank, (a), 2015)

Although Ethiopia developed a rather investor-friendly climate and the emphasis on export and labour-intensive sectors was meant to lift up the whole economy through strengthening this linkage, the desired outcomes remain limited. According to a study conducted by Gebreeyesus (2014), the findings show that the domestic linkage is weak resulting in higher and increasing import dependence. In addition, while foreign investments in the Ethiopian agricultural sector created job opportunities and social development, they also led to social and ecological conflicts. Following Weissleder (2009), the meat sector and biofuel sector caused negative effects on food security and poverty as competition on fertile land and water increased. Much controversy also exists about the Ethiopian policy on land acquisition as NGOs and policy advocates claim that the land-lease programme displaces hundreds of thousands of indigenous peoples abusing their human rights, trashing the environment and making them more dependent of food aid than ever before (Al Jazeera, 2014). Contract farming can now be added to this discussion. According to Abebe Diriba, head of the Agriculture Transformation Agency in Oromia regional State, there are 23.000 smallholder farmers engaged in contract farming in the malt barley sector for different breweries. It is believed that contract farming enables smallholders to work closely with breweries and provide barley in a sustainable way. He further states that this approach is in line with the overall direction and strategy of the government to convert

subsistence farmers to commercial farmers (Abebe Diriba, 2015, as cited in Gessesse, 2015). Supporting local farmers by means of increasing access to agricultural expertise and technologies might also further reduce poverty rates (Gessesse, 2015). However, as the debate on contract farming showed in section 3, there are also unwanted side effects coming forth out of this practice. Hence, it is yet to be seen what the true effect of this policy direction is on human development in general and on livelihood and food security of the local smallholders in specific.

#### 4.4 Livelihood and food security

The agricultural sector is Ethiopia’s single most important source of income and the majority of people is dependent on subsistence farming (Fisseha, 2011). Especially in the context of rural Ethiopia, livelihoods are grounded in the agricultural sector and land is one of the main resources. The dependence on agricultural can also be seen in map 2, which represents the livelihood zones in Ethiopia. The map shows the various crops, livestock or other resources on which the regions are dependent. Land remains at the centre of rural livelihoods and determines to a large extent the degree of livelihood and food security status (Woreda, 2012). The sole reliance of households on agricultural poses several risks. Although Ethiopia has a lot of fertile land and despite that the average annual rainfall is sufficient with 848 mm, most of the rain falls intensively, extremely spatial, and with very high temporal variability. This leads to high risks of annual droughts and intra-seasonal dry spells because almost all food crops in Ethiopia come from rain-fed agriculture (Weissleder, 2009). As a result, food security is very low and roughly 8 million people depend on international food assistance, even in years with good harvest. Last year the situation deteriorated due to El Nino, when multiple consecutive seasons of below-normal rainfall have led to the worst drought in more than 50 years across the north-eastern and central parts of the country. It is expected that large populations will experience significant food consumption gaps as a result of low crop production, poor livestock health, and water shortages. The projected level of food assistance for 2016 is set at 10.2 million people (USAID (b), 2016). The reliance on agriculture, and consequently the food security status, is further being endangered by population growth, worsening land degradation, land scarcity and fragmentation, and tenure insecurity (Moreda, 2012).



Map 2: Livelihood zones in Ethiopia (Adapted from Fewes Net, 2011).

As was seen above, FDI is used as a strategy by the Ethiopian government to overcome these issues. One form of investment which has become more and more accepted since around three to four years is contract farming (Gessesse, 2015). Contract farming is especially being promoted in the malt barley sector, as this sector does not only have potential to bring benefit to the local population, but also to the national economy. This will be explained in the next section.

#### 4.5 Malt barley sector

Ethiopia accounts for about 25 per cent of the total barley production in Africa, making it the second largest barley producer of the continent next to Morocco (FAO, 2014). Most of the barley production takes place in the highlands of the Oromia and Amhara regions. These two regions accounted for about 52 per cent and 31 per cent respectively of the total barley production from 2003 to 2013. Where barley in industrialized countries is mainly used for animal feed and malting, barley in Ethiopia is a main ingredient in staple food crops such as injera, porridge, bread, and local drinks such as Tella and Besso. In 2013/2014, 64 per cent of the total barley production was allocated to household consumption (Rashid, Abate, Lemma, Warner, Kasa & Minot, 2015).

Although the top cereal crops in Ethiopia are maize, sorghum, teff, and wheat, the importance of barley is rapidly growing in terms of production, its potential for poverty reduction, and for the country's coffers and the current imbalance of import/export rates. The number of smallholders producing barley increased in ten years from 3.5 million to 4.5 million in 2014. In addition, the total production grew from 1 million tons in 2005 to roughly 1.9 million tons in 2014 (CSA, 2005; CSA, 2014). Important to note is that 90 per cent of the barley produced is food barley (Kifle, 2016). As a result of the discrepancy in food and malt barley, Ethiopia has generated a surplus of food barley, but the net import bill for malt barley jumped from 240.000 US dollars in 1997 to 40 US million dollars in 2014. Another reason to encourage contract farming in the malt barley sector is therefore to substitute imported barley and save foreign currency (Gessesse, 2014), as it is estimated that if the trend of importing barley continues, Ethiopia's malt barley import bill will be around 420 million US dollar by 2025 (Rashid, Abate, Lemma, Warner, Kasa & Minot, 2015).

Ethiopia's increase in domestic demand in malt barley is related to the country's increase in beer consumption. The country has experienced one of the fastest increases of beer consumption in recent years, with consumption rates steadily rising 15 to 20 per cent every year since 2011 (Ethiopian News Agency, 2016). Growing evidence suggests that the demand for malt barley has accelerated this fast due to an increase in income. Households switch from domestically brewed beverages such as Tella and Areki, which are based on sorghum and other grains, to bottled beer which is based on barley (ATA, 2013). Despite the increase in demand, the barley sector continually falls far behind other major cereals, both in terms of cereal production and total land allocation. In addition, barley has experienced the least yield growth compared to the other top cereals (Rashid, Abate, Lemma, Warner, Kasa & Minot, 2015). There are also several bottlenecks which are specific to the malt barley value chain. First, there is a huge gap between demand and allocation. Currently, the demand is 270.000 metric tons of which only 42.000 metric tons can be allocated. The gap can be attributed to lacking malting capacities of the two malt factories. Secondly, only 4 per cent of the farmers received good barley seeds in 2013. This access rate is the lowest among all cereals. In addition, the barley seeds which are used among the majority of the farmers are low-yielding and outdated varieties (ATA, 2013). Although estimations from Heineken suggest that currently 45 per cent of the farmers receive good barley seeds, this could not be verified by findings in recent literature. Thirdly, most barley farmers do not have access to credit and consequently have difficulty in accessing inputs. Related to the third bottleneck is that only a few barley farmers have access to extension services such as access to input supply and agricultural produce marketing. Finally, market linkages are inefficient as federal credit unions and traders lack the financial and operational capacity required to aggregate and deliver barley

to large commercial buyers (ATA, 2013). To overcome these bottlenecks and to respond to the growing demand for malt barley, the Ethiopian government invited two of the world's largest breweries, Heineken and Diageo, to set up their business and develop their own barley value chain (ATA, 2013). This posed a challenge for these breweries as locally producing barley is much more expensive than importing barley from for example France.

#### 4.6 Heineken and the CREATE project

Although Heineken is a relatively new player in the Ethiopian market, the brewery has had a long history in Africa. Back in 1900, Heineken was already exporting beer to various African countries including Ghana, Nigeria, Liberia and Sierra Leone. In 1923 Heineken established its first brewery in the Democratic Republic of Congo (DRC) and now owns 45 breweries across the African continent. In 2011, Heineken made the acquisition of Harar and Bedele Breweries in Ethiopia and in the beginning of 2015 it opened its newest brewery in Kilinto, near the capital Addis Ababa (Heineken N.V., 2013). The new brewery meant an investment of 150 million US dollars and will add 1.5 hectolitres of brewing capacity. The new greenfield brewery creates jobs and new opportunities in the region, and will lead to an increase in the availability of the key brands Bedele Special, Bedele Regular, Harar, Hakim Stout, Sofi Malta and the new brand Walia (Levy, 2014).

##### 4.6.1 Local sourcing and the CREATE Project

Heineken developed a program of local sourcing to assure a long-term and reliable supply of agricultural material needed for its breweries across Africa. Currently, Heineken sources 45.8 percent locally, but the beer company's aim is to source 60% of the agricultural raw material from African farmers by 2020. Local sourcing is a key component of Heineken's strategy of partnering for growth in Africa which involves financially empowering farmers and their communities in which the company operates. According to Heineken, local sourcing also "makes good business sense [as] we reduce our exposure to vulnerabilities of the market (long delivery lead times and volatile prices), shorten the supply chain and reduce transportation, which of course lowers our costs and carbon footprint" (Heineken, 2015). Additionally, Heineken wants to promote private sector approaches that are environmentally friendly, socially just and economically sustainable (Heineken N.V., 2013).

Heineken's local sourcing approach in Ethiopia is implemented by means of the CREATE project. In 2013, Heineken signed a Memorandum of Understanding for a 4-year malt barley programme together with the Dutch ministry of Foreign Trade and Development Cooperation, the NGO EUCORD and two Ethiopian Government institutes which are the Agricultural Transformation Agency and the Ethiopian Institute of Agricultural Research (Heineken N.V., 2013). Heineken and the Dutch ministry committed to invest 2.72 million US dollar to increase food security, improve the livelihoods of 20,000 smallholder farmers and reduce reliance on imports by developing local barley production and connecting farmers to Heineken's supply chain in Ethiopia (Levy, 2014). The so called CREATE programme runs from 2013 to 2017 and the main reasons why it was set up were the high demand for an adequate supply of good-quality malted barley and to substitute 20,000 MT of imported barley by locally produced barley. The latter reason in specific is important since the Ethiopian government wants to substitute imported barley to save foreign currency (Gessesse, 2015). According to Heineken, the project further aims to expand the value of the malt barley business for the region and develop the end-to-end process of growing malt barley in Ethiopia by means of improving access to markets, seeds, pesticides, credits (contract farming schemes), and market information; providing agricultural trainings; establishing long-term partnerships between producer groups, intermediaries and agro-processors; and establishing marketing groups, such as seed-producing cooperatives and nucleus farmers (What's Brewing, 2015).

An overview of all actors involved in the malt barley value chain is found in figure 5. Heineken outsourced the project implementation to EUCORD but the beer company plays a vital role in the malt barley value chain as it is responsible for input supplies (seeds and chemicals), support activities (pre-finance schemes) and acts as a market actor. EUCORD is responsible for the agronomical trainings and collaborates with the local NGO Hundee to put these trainings into practice. The EIAR plays a minor role in seed development and additional trainings. The role of the ATA in the CREATE project is limited but it supports Heineken in general to improve the malt barley value chain.

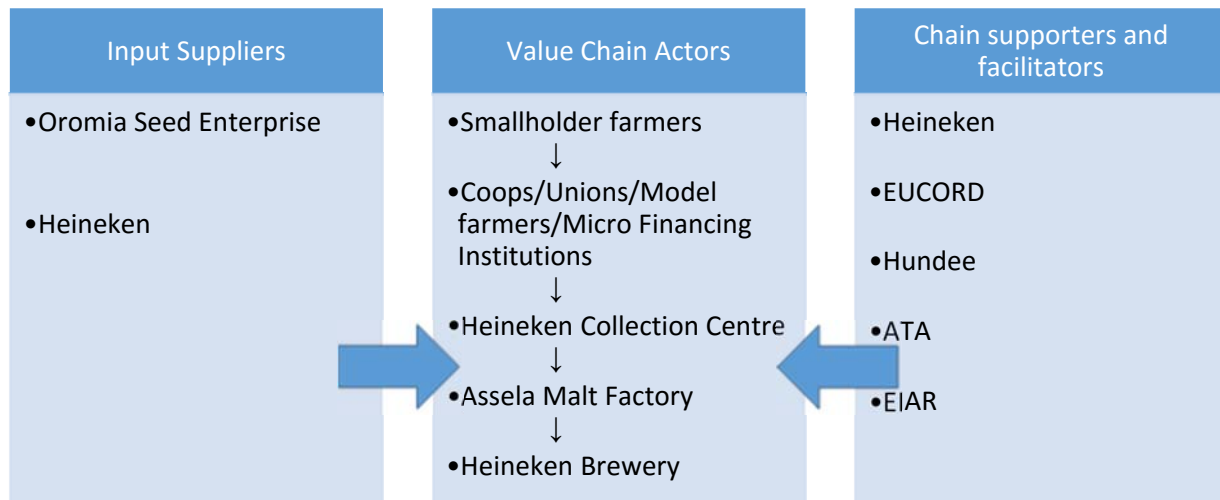


Figure 5: Schematic overview of actors involved in the malt barley value chain and support activities.

According to the newsletter 'What's Brewing', the project has since its start reached 6013 smallholders farmers with all project packages (agronomic supports, pre-financing of inputs, provision of basic inputs etc.). Furthermore, two new malt barley seed varieties have been developed and approved which are called Traveler and Grace. These European varieties are high yielding and fulfil the malt quality requirements. According to the agricultural statistics, the new seeds produced a productivity up to 7.2 tons/ha, compared to the national average of 1.7 tons/ha (What's Brewing, 2015).

Before the CREATE project, Heineken was involved in comparable PPP projects in Sierra Leone, Burundi and the DRC. The West African Sorghum Value Chain Development (WASCD) project ran from 2008 until 2011 and its objective was to create new income opportunities for smallholders in Sierra Leone and enable national beverage industries to set up a high quality sorghum supply chain to substitute imported malt barley by locally produced sorghum (van Wijk & Kwakkenbos, 2011; EUCORD, 2008). The local sourcing projects of Heineken and EUCORD in Burundi and DRC were part of the pact of Schokland, which was an initiative of the Dutch Ministry of Foreign Affairs to accelerate Dutch contributions towards achieving the Millennium Development Goals (APE/MDF, 2014). In 2011, van Wijk & Kwakkenbos (2011) investigated five public-private partnerships in the beer industry in Africa of which the WASCD project was one. The results of the case study showed that the WASCD project led to increased access to knowledge and technology, to affordable credit, and provided better market opportunities. The WASDC project mainly focused on strengthening the value chain by means of process upgrading to increase production (increased use of certified seeds, better farm management, and investment technology) and product upgrading (enhanced attention to quality aspects and shift to sorghum varieties accepted by the brewery). No attention was paid to inter-chain upgrading, meaning that no support was offered to grow other cash crops next to the commercial cash crop sorghum (van Wijk & Kwakkenbos, 2011). Following van Wijk & Kwakkenbos (2011), although this form of upgrading is not the prime interest of breweries, it could significantly support the resilience of farmers who have to rotate their crops and spread their risks. It was also seen that the project chose to follow a hierarchical model to integrate smallholders into the chain by using nucleus farmers.

Another finding concerns the partnership itself. All stakeholders agreed that the partnership played an important role in stabilizing the market through the promotion of contract farming and in organizing farmers into more efficient production units. However, governments played only a remote role through research and extension services, tax policies, or credit opportunities. This raises the issue that value chain partnerships potentially replace rather than complement governments in setting up sustainable supply or value chains as the government should be making durable institutional changes and have them adopted in other chains and sectors in the country (van Wijk & Kwakkenbos, 2011). These findings and the results of the research on the CREATE project are interesting to compare with to define how the public-private partnerships between Heineken and the (local) governments evolved.

#### 4.6.2 Critical assessment

Heineken is often used as an example and justification by the Dutch government of how to conduct business in developing countries. However, question marks have recently been raised by both author Olivier van Beemen and Dutch television documentary programme Zembla. In 2015, Olivier van Beemen published the findings on his research on Heineken in various African countries in his book 'Heineken in Afrika'. The revelations concerned Heineken's involvement in violating human rights, having strong relationships with dictators, corruption, and tax avoidance (Heineken in Afrika, n.d.). In March this year, Zembla broadcasted an episode on Heineken called 'Hollandse Handel'- Dutch Trade. This episode assessed critically Heineken's CREATE project and the Dutch Aid & Trade policy. According to Zembla, both Heineken and the Dutch Aid & Trade policy are actively involved in tax avoidance, decreasing employment rates and land rights issues in Ethiopia. Based on the Olivier van Beemen's book and Zembla's episode, two Dutch ministers, Sharon Gesthuizen from the Social Party and Joël Voordewind from the Christen Union asked critical questions on the Dutch Aid & Trade policy. While Minister Ploumen from Development Cooperation provided a statement in defence of Heineken and the Aid & Trade policy, these recent findings/publications suggest that more investigation is needed on such sensitive topics. This research will not investigate tax avoidance and land right issues, but it is important to keep in mind that not everything is as bright as it might look at first sight.

## 5. Research design and methodology

This chapter provides information on how this research was structured and which methods and strategies were used to answer the research questions. First, the operationalization and definitions of the two variables used in this research are specified. Second, a short overview of the research context is provided. Third and finally, both the methods and the sampling strategy are discussed in more detail.

### 5.1 Operationalization of variables

The two variables, livelihood and food security have been operationalized based on the research context, in terms of most predominantly existing literature, and most widely used definitions in other researches. The first variable was livelihood. The definition on livelihood given by DFID is adapted from Chambers and Conway (1991) and is probably the most widely used definition: "A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base." (DFID, 1999, p. 1)

This research drew on the sustainable livelihood framework of DFID discussed in section 3.1.4. The livelihood framework comprises five capitals which are natural, physical, social, human and financial capital (DFID, 1999). This research focused on all five capitals in order to capture a difference in both tangible and intangible assets. The capitals have been operationalized according to existing literature and the research context. Based on the information gained during desk research and the interviews with the various stakeholders, it became for instance clear that within the CREATE project special emphasis is given to trainings on soil preparation, fertilizer use, planting, and post-harvest handling. The term capital itself and the five livelihood capitals have been operationalized as follows:

*Capital:* "Tangible or intangible assets that are held by a person or household for use or investment; wealth, in whatever form, capable of being used to produce more wealth; any source of benefit or assistance. Various forms of capital can be accumulated, exchanged, expended and lost, thereby affecting a household's level of livelihood security, quality of life, and its options for coping strategies" (CARE, 2002, p. iv).

*Financial Capital:* The financial and liquid economic resources which have been defined as income and access to credit.

*Physical Capital:* Farming equipment, pesticides, fertilizer, livestock, living conditions, access to crop markets.

*Natural Capital:* Natural resource stocks which are crop yield, seeds, and access to seeds.

*Human Capital:* Access to market information and extension service, and the skills and knowledge on agricultural practices which are soil preparation, planting, fertilizer use and post-harvest handling,

*Social Capital:* Social resources which have been identified as self-esteem, better relationship with members of the kebele, broader network to rely on, and the role of the farmer in the kebele.

Extension service (human capital) is defined as the trainings provided by the CREATE project on new technologies, production and marketing skills, and crop management.

The second variable was food security. Food security has been operationalized as household food security which is the ability of a household to have year-round access to the amount and variety of safe foods their



members need to lead active and healthy lives by either from its own production or through purchases (FAO, 2010). In terms of the four dimensions of food security discussed in section 3.1.4, this research mainly aimed to measure 'food availability'. This was decided as the majority of the farmers are subsistent farmers, growing their own produce for home consumption. The dimensions 'access to food', 'food utilization' and 'food stability' only played a minor role but were still included in the questionnaire and focus group discussions to not exclude any unexpected results.

## 5.2 Research context

The three-month research took place in two areas which were the capital Addis Ababa and Arsi. Arsi is located in Oromia region and comprises four woredas which are Tiyo, Digalo Tijo, Limu Bilibilo and Honkole Wabe. The stakeholder analysis, value chain analysis, and desk research were conducted in Addis Ababa whereas the focus group discussions and the surveys were conducted in Arsi. The first few weeks were dedicated to conduct research in Addis Ababa as almost all stakeholders were situated in the capital. The latter part of the research took place in Arsi to reach the main target group, which were the farmers, and the spokespersons of the cooperatives, unions, member farmers and micro-financing institutions.

## 5.3 Methods, techniques and sampling

In order to gain a broad understanding of the impact of the CREATE project, the main question and the sub-questions have been investigated by means of a mixed method approach. This included both qualitative and quantitative methods. The various methods will be discussed in more detail below.

### 5.3.1 Qualitative methods

The qualitative methods used during this research were desk research, a stakeholder analysis by means of interviews, a value chain analysis, and focus group discussions with smallholder farmers. The aim of these methods was to gain in-depth information on the CREATE project and its impact on the value chain position, livelihood, and food security of the smallholder farmers.

#### *Desk research*

Desk research was firstly carried out on the CREATE project. Secondary data on the project were collected to be able to formulate the household survey and to be prepared for the interviews with the various stakeholders. Secondly, secondary data on the Ethiopian policies on FDI were collected from both the internet and from a visit at the Ethiopian Investment Commission in order to put this research in a broader perspective and to gain additional information on the purpose of Heineken in Ethiopia.

#### *Stakeholder analysis by means of interviews*

The stakeholder analysis addressed all sub-questions. The stakeholders have been categorized as primary and secondary stakeholders. Primary stakeholders are people or organisations that are directly affected, either positively or negatively, by the decisions or actions of the CREATE project. Secondary stakeholders are people or organisations that are indirectly affected, either positively or negatively, by the decisions or actions of the CREATE project. An overview of the primary and secondary stakeholders is provided in table 2. For each interview, a semi-structured interview was prepared. This method was chosen to adhere to a certain structure for all interviews but at the same time maintain a certain degree of freedom to go into more detail if necessary. The majority of the interviews was conducted in an informal setting and none of the interviews were recorded due to privacy reasons. Notes have therefore been taken in informed consent. Before conducting the interviews, the stakeholders were informed about the purpose of the interview. It was explained that this research was part of a master's thesis on the CREATE project of Heineken and that it was important to capture as many stakeholder's views as possible to provide a coherent and accurate analysis of the impact of the project. Topics discussed during the interviews for primary stakeholders were

the role of the stakeholder in the project, the selection procedure of the farmers, the terms and agreements under which the farmers had been contracted, the support activities offered by Heineken, progress of the project, bottlenecks of the project, and suggested improvements for the project. Topics discussed during the interviews for secondary stakeholders were the relationship with Heineken, thoughts on the project, and possible adverse effects of the project.

Primary Stakeholders	Secondary Stakeholders
Heineken	Agriterra
EUCORD	Ethiopian Investment Commission
Dutch Embassy	SolaGrow
Agricultural Transformation Agency	Solidaridad
Ethiopian Institute of Agricultural Research	
ICCO & ICCO Terrafina	
Coops/Union/ Micro-Financing Institutions	
Hundee	

Table 2: Overview of primary and secondary stakeholders of the CREATE project

### Value chain analysis

A value chain analysis had been conducted to address sub-question 3: “how do the terms and conditions of the CREATE project affect the value chain position of the contracted local smallholders?”. The first step of the analysis was to identify and map all the actors who took part in the malt barley value chain. An overview of mapping the value chain can be seen in figure 6. This figure shows the core processes of the value chain, the actors involved per process and their main activities. Mapping the malt barley value chain was essential to be prepared for the second step of the analysis, which was to define the type of governance under which the malt barley value chain operated. This part of the analysis was conducted by means of interviews with Heineken/EUCORD, interviews with spokespersons of cooperatives, unions, model farmers and micro financing institutions (MFIs), analysing contractual agreements of the CREATE project, and evaluating Heineken’s business strategy. To determine the impact of the CREATE project on the value chain position of the contracted local smallholders, the gathered information had been compared with existing literature on contract farming and value chain governance.

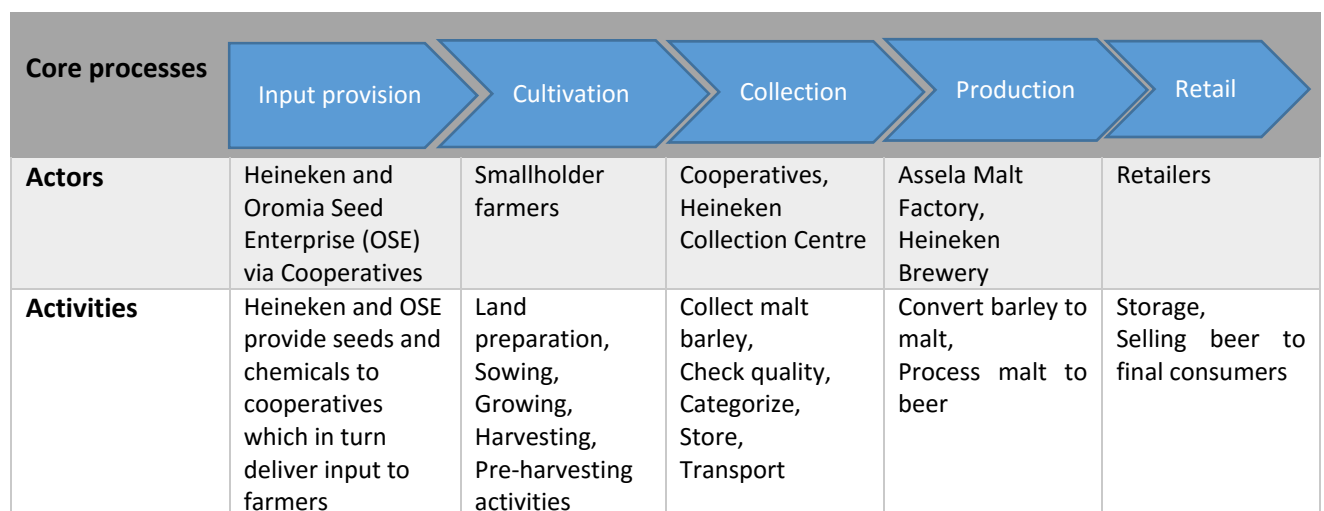


Figure 6: Mapping the value chain according to processes, actors and activities.

### *Focus group discussions*

To gain more in-depth information on the impact of the CREATE project on the livelihood and food security of smallholder farmers, and to provide farmers the opportunity to give their opinion about the project, four focus group discussions were held. Two focus group discussions were held with farmers who are part of the CREATE project and two focus group discussions were held with farmers who are not part of the project. The focus group discussions were conducted in two woredas which were Honkolo Wabe and Digalo Tijo. To make the results more comparable, in each woreda one focus group discussion was conducted with farmers who were part of the project and one with farmers who were not part of the project. The focus group discussions comprising farmers who are part of the project addressed the terms and conditions of the contract, the support activities offered by Heineken and the impact on the value chain position, livelihood and food security. The focus group discussions involving farmers who are not part of the project aimed to gain more information on why these farmers did not want/could not participate, how the project affected their ability to sell malt barley to other suppliers, and the changing relationships in the kebele with farmers who are now part of the project. The list of questions used during the focus groups discussions can be found in Appendix A. An overview of the composition of the focus groups is provided in table 3. All four focus group discussions have been recorded in informed consent and were conducted with a research assistant who translated the questions from English to Oromiffa and the answers from Oromiffa back to English. Before the focus group discussion started, the farmers were informed about the purpose of the focus group and it was explained that the information would be processed anonymously and be used for this research only.

Woreda	Members	Non-Members
<b>Honkole Wabe</b>	10 (7 male – 3 female)	6 (6 male)
<b>Digalo Tijo</b>	20 (17 male – 3 female)	7 (5 male – 2 female)

Table 3: Overview of the composition of the focus groups held in Honkole Wabe and Digalo Tijo.

### 5.3.2 Quantitative methods

The fourth sub-question ‘how does contract farming affect the livelihood and food security status of contracted local smallholders?’ has been investigated by means of a household survey. The household survey can be found in appendix B. The total target population in Arsi was 5452. The total number of surveys collected was 148. Out of these 148 respondents, 143 were male and 5 were female. The mean age was 44 years old, the youngest farmer being 23 and the oldest farmer being 75. Household members differed between 1 and 15, but the most frequent numbers of household members lay between 5 and 8. Almost half of the respondents (N=68) signed their first contract with the cooperative/model farmer in 2014 while the other part (N=80) signed their first contract in 2015. In Tiyo, 32 surveys were conducted, in Digalo Tijo 30, in Limu bilibilo 70, and in Honkole Wabe 16. The survey consisted of both open and closed questions and incorporated a five-point Likert-scale to determine the impact on livelihood.

One major barrier in this research concerned language and illiteracy. The language spoken by the smallholders was Oromiffa and the majority of the farmers was illiterate. This meant that the household surveys had to be verbally conducted by two local research assistants. This posed a risk as the researcher could not speak nor understand Oromiffa. Consequently, it was not possible to check whether the questions were correctly asked and whether the answers the farmers provided were correctly filled out. To minimise the risk of losing valuable data and to avoid miscommunication, it was ensured that the research assistants spoke both Oromiffa and English. The research assistants were also debriefed thoroughly and went through all the survey questions to report any matter they did not understand. For instance, one of the survey questions was: ‘I know more people whom I can rely on since I am contracted by Heineken/EUCORD’. The research assistants indicated that they did not understand the phrase ‘rely on’. Hence, this question was changed into: ‘I know more people whom I can ask for help when I have a problem since I am contracted by

Heineken/EUCORD'. Special attention was given to topics as 'household members' (who is included?) and 'extension services' (what does it entail?). In order to conduct the household survey, two research assistants who worked for the CREATE project were hired. Although it was realized that this might influence the results as the research assistants had a stake in the research and because some smallholder farmers might recognize them, it was believed that this was the best option based on several reasons. First, it was a remote area and one needs to be familiar with the research area to be able to reach the smallholder farmers and the cooperatives. Second, as the survey had to be verbally conducted in Oromiffa but to be filled out in English it was necessary to hire research assistants who could both speak English and Oromiffa. Third, it was preferred to hire research assistants who had experience with conducting research and who understood the research context. Fourth, monetary issues and time related issues made it not possible to hire independent research assistants. Before conducting the surveys, the survey was checked by various experts related to the CREATE project in order to ensure that the questions had been formulated well and to make sure that all relevant information was included. No changes to the survey had been made without approval of the researcher. In addition, a pilot test was carried out to make the research assistants familiar with asking the survey questions, to check whether the farmers understood all questions and to see how long it would take on average to fill out the survey. After piloting, it was concluded that some of the survey questions were too difficult to answer (e.g. how many per cent of your income is generated by malt barley) and that most farmers did not know the name 'CREATE project'. Hence, questions as 'I know more people whom I can ask for help since I am part of the CREATE project' were changed into 'I know more people whom I can ask for help since I am contracted by Heineken/EUCORD'. Although Heineken does not sign the contract directly with the farmer (as will be addressed in the result section), the farmers were well aware of the names Heineken and EUCORD.

### 5.3.3 Sampling strategy

Several aspects had to be taken into account before deciding on the sampling strategy. First, the survey had to be verbally conducted in Oromiffa as for abovementioned reasons. Second, farmers who are part of the CREATE project and farmers who are not part of the project lived in the same area. Hence, not every farmer was part of the target group as only the farmers who are part of the CREATE project were allowed to participate in the survey. Third, the research comprised an area of about 20.000 km<sup>2</sup>. It would have been too time consuming, mainly due to limited transportation methods and a lack of decent infrastructure, to visit the farmers in person as more than one hundred farmers were needed to establish a representative sample. Based on the aforementioned reasons and to be able to generalize the results of the survey to all smallholders who participate in the project, this research made use of probability sampling. In particular, a simple random sampling technique was used. It was unfortunately not possible to make use of a control group. A paper written by Barrett et al. (2012) on contract farming shows that because contracts are not randomly assigned across smallholders in a given region but are rather a strategic choice, it creates a selection problem for researchers who seek to estimate the welfare effects of participation in contract farming arrangements. Furthermore, unobservable farmer and region characteristics may influence participation and complicate inference about the determinants and welfare effects. Finally, a farmer's decision to participate in contract farming could often coincide with a commitment to growing a new crop or variety. The control group should ideally refer to farmers who supply the same commodity to precisely the same markets and for the same purpose. As this is often difficult to do, separating the welfare gains from participation in a contract farming arrangement from these other features can be challenging (Barret et al, 2012). After the research area in Arsi had been evaluated, it was concluded that it was not feasible within the research period to select a control group which would perfectly match the group of farmers which was part of the CREATE project. Farmers who were part of the project and farmers who did not participate differed individually too much in terms of amount of livestock, variety of grown crops, side selling, land size,

main source of income and other dissimilarities on agricultural practices. It was therefore decided not to make use of a control group but fully focus on the memory of smallholder farmers.

Based on the living conditions and the illiteracy aspect, it was decided to conduct the surveys at the central market, which is seen in the pictures below. The market was a meeting place for the smallholder farmers where they could sell their yield of malt barley to the model farmer, union, cooperative or micro-financing institution. The research assistants travelled for one week to several kebeles in all four woredas, depending on the day in which kebele the market took place. After the smallholder farmers sold their yield at the market, they were asked to participate in the survey. Before the farmers took part in the survey they were informed on the purpose of the survey, they were explained that all the answers would be anonymously and confidentially processed and that all the answers were restricted to this research. After the smallholders received these instructions, they could decide whether they would like to participate. Conducting the survey at the market after farmers got paid posed several risks. For instance, after receiving their payments farmers could feel frustrated (yield and/or income was lower than expected) or extremely happy (higher yield and/or income than expected). In addition, as many farmers were present at the market, privacy was limited and farmers could feel social pressure to participate and give socially desired answers. While analysing the results, these aspects will be taken into consideration.

The household survey was as mentioned above distributed in Arsi. Arsi was chosen for various sampling reasons. First, Arsi is the largest production zone of malt barley in Ethiopia as 30 per cent of the total barley production is produced in the region. Second, related to the first reason, most malt barley farmers who are part of the project are situated in Arsi. In total 10.330 farmers participate in the project of which 5452 are situated in Arsi, 4618 in West-Arsi and 283 in Bale. Hence, conducting a survey in Arsi meant that the results could be generalized to the majority of farmers who participate in the CREATE project. Finally, although a survey in both West-Arsi and Arsi was preferred to obtain a more representative sample, the situation in West-Arsi was at the time of the research not safe enough to travel to as several (violent) demonstrations and protests were taking place. It was therefore decided to only conduct research in Arsi.



Pictures of the research area in Arsi. More pictures can be found in Appendix C

## 6. Results

The result section discusses the findings on the four sub-questions. These findings are compared to the discussed literature in the theoretical framework to define how this research is related to previously conducted research. After each sub-section, a preliminary answer to the main question is given.

### 6.1 Cooperatives and model farmers as new contracted middlemen

The first sub-question sought to find information on the selection criteria local smallholders should adhere to before being eligible to take part in the CREATE project. During the stakeholder analysis and during the interviews with spokespersons of cooperatives, unions, micro-financing institutions, and model farmers, it was seen that the selection process is a two-step procedure. First, Heineken and EUCORD select the cooperatives, unions, MFIs and model farmers based on their business performance (past track records), institutional capacity (are they capable of adhering to the contract and to administer their farmers under a contract farming arrangement), their geographical location, their leadership capacity, their warehouse capacity, years of experience in the barley business, their experience in contract farming, and on the number of member farmers they administer. If the organisations meet these requirements, they are selected to participate in the project. Once being part of the CREATE project, these organisations are required to follow the extension package, which is a written manual stating the requirements and obligations of the CREATE project. A few examples of requirements are proper land preparation, usage of improved certified seeds, proper application of agricultural inputs, and proper crop management. Every year, Heineken and EUCORD evaluate the performance of the cooperatives, unions, MFIs and model farmers. If they fail to adhere to the requirements of the extension package, these organisations will be blacklisted and encounter the risk of being expelled from the CREATE project. The second step involves the selection procedure of the individual member farmers. The organisations which have been selected by Heineken are responsible for selecting the individual farmers who have been a member of that organisation. Heineken is not involved in this step of the selection procedure. Each organization selects its individual member farmers based on its own selection criteria. The most common criteria for member farmers to be eligible to participate in the project are that they must own or rent land, have the capacity to produce malt barley, have experience in growing malt barley or other crops, have enough collateral such as land and a house in case pre-financed credit cannot be paid back to the cooperative, model farmer, MFI or union, are a member of a cooperative/union, and are trustworthy. Another important point was geographical location, as the new seeds provided by Heineken can only be grown under specific weather conditions and soil conditions. This two-step selection procedure shows that contract farming can have a certain degree of exclusiveness as was argued by Poulton et al. (2008, as cited in Vermeulen & Cotula, 2010), since better-resourced farmers tend to capture the contracts, leaving poorer farmers out of the project. While selected farmers are actively involved in the project and are left in control of their land, the inclusiveness of contract farming does not reach the most marginalized. This relates to the argument given by Barret et al. that contract farming naturally leads to rising spatial inequalities and can reinforce geographic disadvantages within countries (Barrett et al, 2012). Consequently, it raises questions whether contract farming as a business model is a viable model in developing countries as the needs of poorest people are likely to be unmet.

After the selection procedure is completed, cooperatives and farmers must sign a contract. The contractual procedure involves again a two-step process. First, Heineken signs a contract with the selected cooperatives, unions, MFIs and model farmers. As was seen in the literature, contracts are always binding agreements but can either be formal or informal and typically involve agreements that specify the roles and responsibilities of the buyer and the producer (Miller & Jones, 2010). During analysing one of the contractual agreements between Heineken and a cooperative and one of the agreements between Heineken and a model farmer, it was seen that the contracts are highly formalized and standardized. The contractual agreement is defined

as 'seed supply and grain (or seed) production, sale and purchase agreement'. Hence, agreements are made on seed supply, seed or grain production, and sale and purchase of malt barley. The contract is signed for one harvest season and both parties have the capacity and authority to enter into a contract in line with the Ethiopian Civil Code. The contractual agreement includes both the obligations of Heineken, also referred to as buyer side, and the obligations of the cooperative, union, MFI and model farmer, referred to as production side. On the buyer side, Heineken agrees to buy the total amount of the malt barley defined in the contract and arranges that payment to the concerned organization is made at once when the malt barley is delivered in good order within seven days upon receipt of an invoice. Heineken has the right to reject the malt barley that is below the set quality parameters. Finally, Heineken is fully responsible for any damages that are caused to the malt barley by its failure to accept the delivery of the product in due time or if the concerned organization incurs additional expense due to the delay of Heineken to accept the product at Heineken's warehouse. On the production side, terms are specified regarding four quality parameters (moisture content, grain size, genetic varietal cleanness and admixtures), quantity of the malt barley seeds delivered to Heineken, repayment of the pre-financing scheme, prohibition of side-selling, following and implementing the trainings extended by Heineken, delivery of the malt barley in terms of place and time, and the price per quintal (i.e. 100 kg). The price is non-negotiable as the price per quintal is being determined by all players in the barley market before each harvest season. Companies and local traders are allowed to add a premium on top of the agreed price. The agreed price plus the premium is then listed in the contract. The contract further states that the cooperative, union, MFI or model farmer shall bear all risks of loss and damage of the malt barley seeds until the moment the malt barley has been transferred to Heineken. Transportation costs from the collection point to Heineken's warehouse will also be covered by the cooperative, union, MFI or model farmer. If the concerned organization is unable to deliver the fully agreed amount of malt barley within the specified time frame due to a justified reason, it shall notify Heineken and Oromia Trade and Market Development Bureau of such delay 15 days before the agreed time of delivery. The parties may agree on new delivery dates in case of a natural hazard for instance. If the concerned organization could not produce the expected product using Heineken's pre-financed inputs due to any unjustifiable reason, it has to pay the full amount of the pre-financed inputs to Heineken. In case the seeds delivered by Heineken to the concerned organization do not grow in due time and if an examination by an independent agricultural expert finds out the problem is related with the seeds, Heineken shall cover the expense to plant new seeds. The contractual agreement furthermore states that the concerned organization is obliged to contract its member farmers, with participation and consent of Heineken, based on the same agreement it signed with Heineken. The concerned organization must also pass on the inputs, pre-finances and other supports of Heineken to its member farmers for the intended purpose only. Finally, it is the responsibility of the organization that member farmers do not sign any similar commitment with other buyers on selling malt barley.

In a paper on contract farming written by Barret et al. (2012) it is seen that firms seek out cooperatives because the formal contracts written by cooperatives provide firms more certainty over produce availability. Additionally, cooperatives can guarantee a certain minimum quality, can take the responsibility to collect the produce from member farmers and reduce the transaction costs associated with collecting small quantities from a large number of suppliers. This is similar to the reasons why Heineken chooses to collaborate with cooperatives. The first reason for collaboration is to collect the market output more effectively and manageable. The second reason concerns logistics as it is hard to cope with 10.000 individual smallholders. Cooperatives, unions, model farmers and MFIs play an important role in the CREATE project but they also bear risks as Heineken puts partially the production risks in the hands of the cooperatives by means of the contractual obligations. It has been argued that contract farming was just another form of exploitation, transferring production risks to farmers (Glover, 1987). Although exploitation is not applicable

to the CREATE project, most production risks are transferred to cooperatives, unions, model farmers, and MFIs, and to a lesser extent to the farmers, making these organisations a new sort of contracted middlemen.

As these organisations carry the responsibility for reaching all targets, the second step in the contractual procedure involves contracting the member farmers. The contractual agreements are comparable to the ones formulated in the contract between Heineken and the concerned organization. There does seem to be an inconsistency in contract duration. Farmers are supposed to sign a contract for one year, similar to the contract between coops/unions/model farmers/MFIs with Heineken. However, some member farmers stated during the focus group discussion to have signed a contract for three years with a cooperative. This is important to keep in mind as signing a contract for three years can have a different effect on the opinion of farmers on the project than signing a contract for one year. During the interviews with several model farmers and spokespersons of unions and cooperatives, it was stated that all duties and responsibilities are first discussed and explained before member farmers sign the contract. Farmers who took part in the focus group discussions stated however that they were not aware of the fact that they were not allowed to sell malt barley to other traders but Heineken. The member farmers stated that they were aware of all the other obligations such as quality standards, quantity, repayment of pre-financing, and delivery. If member farmers fail to meet these obligations due to for example misuse of fertilizer, the cooperatives, unions, MFIs and member farmers have the right to terminate the contract with member farmers. According to the model farmers and spokespersons, termination has not occurred in the past.

Miller & Jones (2010) argue that contract enforcement in contract farming is one of the most difficult areas in regulation. During the focus group discussions with member farmers and interviews with several spokespersons, it became clear that indeed not all contractual agreements were complied with. From the production side, side-selling to Diageo and local traders occurs throughout the season. Although only 6 survey respondents stated that they sell malt barley to other traders, in the focus group discussion, all member farmers (30) indicated that they sometimes sell their produce to other traders. Estimations of farmers who commit side-selling made by Heineken go up to 25 per cent. One of reasons why farmers claimed to commit side-selling was that some traders such as Diageo offer a better price per quintal. During one focus group discussion farmers even stated that they would rather sign a contract with Diageo than Heineken next year. Other traders, while offering a lower price, come to the village to collect the barley. This reduces transactions costs for the cooperatives which are responsible for paying such costs from their warehouse to Heineken's warehouse. Side-selling to traders who offer a lower price but come to village is more profitable. Side-selling also occurs as from the buyer side on-time payment does not occur consistently. Cooperatives and model farmers often receive their payment after seven days, meaning that they are unable to pay their member farmers on time. Consequently, side-selling to traders who pay directly is an attractive option for some farmers and cooperatives. In the interview with Heineken/EUCORD it was stated that on-time payment was a problem due to the fact that the farmers had no bank account to transfer the money to. In addition, it was perceived too risky to carry cash money to pay immediately. Although it was further argued that this problem was especially an issue during the first year of the project, participants in the focus group discussions and interviewees often mentioned on-time payment as an improvement for the project. Another issue on the buyer side is seed supply and collection. The contract comprises no binding agreements on these issues, which might possibly be the reason why these matters are major bottlenecks of this project. In the survey, 69 respondents listed timely seed supply to be improved upon and the topic was frequently brought up in the focus group discussions and interviews with spokespersons. Main reason why Heineken cannot supply the seeds on time has to do with the extended process of multiplying and cleaning the seeds which are used for sowing. During the interviews with various spokespersons, it was seen that seed collection from the cooperatives/model farmers by Heineken is also insufficient. One of the remarks was: 'I supply on time, the company should collect accordingly'.



According to Miller and Jones (2010), weak contract enforcement is disadvantageous for the whole value chain as all parties are affected, leading the chain to fail. Although the malt barley value chain has not failed, it is important to strengthen contract enforcement, as was also argued by Heineken itself. If contracts are not enforced, it can be assumed that the value chain and the project itself will never be profitable, putting both constraints on Heineken and the farmers. Insofar contracts are honoured by coops and farmers, it is seen that contract farming requires more input and effort than these coops and smallholders are familiar with. The effects of these new working conditions in the malt barley value chain on farmers' livelihoods are presented in the next section.

## 6.2 Capturing value and smallholder farmers

Following Norton (2014) and Bolzani, de Villard & Dey de Pryck (2010), agriculture in developing countries is often characterized by dual value chains working in parallel for the same product. Based on the value chain analysis and the analysis of contractual arrangements, it can be concluded that the malt barley value chain set up by Heineken is an example of a formal or so-called modern value chain, characterized by vertical coordination. Since the exact type of governance of a value chain varies according to the type of contracts and arrangements (Kirsten & Sartorius, 2002), sub-question three investigated how the terms and conditions under which smallholders are contracted affect the value chain position of these farmers.

As was seen in section 3.1.3, several types of governance can be distinguished. For contract farming, captive network governance was classified as the most common type of governance, meaning that small upstream suppliers are reliant on larger downstream buyers (Prowse, 2012). Captive networks are characterized by a high degree of monitoring and control by the lead firm, which also set the specific conditions under which a product is bought. Captive linkages control opportunism through the dominance of lead firms, but provide at the same time enough resources and market access to the subordinate suppliers to make exit an unattractive option (Gereffi, Humphrey & Sturgeon, 2005). These captive aspects characterize the governance type under which smallholder farmers are contracted in the CREATE project. It was seen that smallholder farmers sign a contract with cooperatives under strict and specific conditions on quality, quantity, and price. These conditions have been set by Heineken which is the lead firm. At the same time, Heineken offers resources as seeds and chemicals based on pre-finance schemes with no interest to make an exit unattractive. Looking in specific to contract farming models, the dominant model is the centralised model, in which an agribusiness, in this case Heineken, buys from a large number of smallholders under strict quality control conditions and predetermined quantities. Additionally, corresponding to the centralised model, Heineken provides both technical support and inputs, and monitors closely the production process. Another contract farming model visible in the project is the multipartite model. The CREATE project involves diverse actors such as the private sector (Heineken), the government (ATA, EIAR, Dutch government), and EUCORD as NGO. It is stated that this model is present when it involves dealing with farmers' organisations such as cooperatives and it is seen as the best fit to integrate local smallholders (Melese, 2012). However, according to Oxfam (2014) and Bachke (2010), contract farming in a PPP is often not financially viable or desirable in the absence of donor support due to the high costs of trainings. This illustrates a risk for smallholders if donors decide to pull out of the partnership or if NGOs reduce or even stop their support. The financial support from the Dutch Ministry of Foreign affairs in the CREATE project was used by Heineken to contract EUCORD for project implementation and to provide agronomical trainings. It is however not likely that Heineken will stop financing these trainings when financial support of the Dutch Ministry is reduced or stopped since the Ethiopian government plans to substitute imported barley in 2020. Hence, Heineken will be dependent on a working and strong value chain. This entails that training smallholders to become independent farmers is an essential activity for the next coming years. Although

smallholder farmers are not fully dependent on growing and selling malt barley since they spread their risks by growing other crops and keep livestock, a strong value chain can significantly impact their livelihood in the future when the Ethiopian government starts to execute its plans to substitute imported barley and potentially export surplus malt barley.

The features of the contract farming models and the formal malt barley value chain differ much from the informal or traditional value chain smallholders used to work in. Before being part of the CREATE project, farmers could sell their malt barley to any trader at any preferred time and place and no contractual agreements were signed with firms and/or cooperatives. The central governance mechanism was price-based, defining the value chain as market governance. Nowadays, smallholder farmers are only allowed to sell their malt barley to Heineken (lead firm) and are bound to contractual agreements. These regulations coincide with a modern value chain (Norton, 2014). The Survey respondents seemed to be optimistic about the transition from traditional to modern value chain since all (N=148) would accept the offer of a renewed contract. These farmers and some spokespersons indicated that being in a captive network has advantages as contract farming offered them more certainty such as a fixed price and a fixed buyer, and better market access. The majority of smallholder farmers who participated in the focus group discussions and several spokespersons of cooperatives/unions also showed the other side of the medal and expressed their concerns about being in a captive network. Concerns were raised on the loss of a certain degree of freedom. This corresponds with the literature as contract farming limits the farmer's direct access to influence market governance due to terms and conditions under which the farmers are contracted (Repar, Onakuse & Bogue, 2013; Vorley, 2002). During one of the focus group discussions, it was for instance mentioned that, since last season, the market conditions for teff and beans have been much better than the market condition for malt barley. This means that selling malt barley has no price advantage anymore compared to these other crops. The farmers could not replace malt barley for another crop since they were contractually obliged to supply a certain amount of malt barley to their cooperative and thus Heineken. Hence, farmers were unable to act according to market demand. Additionally, farmers highlighted the importance of price issues as all farmers in the focus group discussions and the majority of the farmers who filled out the survey requested Heineken to offer a higher price per quintal malt barley. If Heineken decides not to fulfil this request, and if farmers feel the market disadvantages outweigh the advantages, there is a risk that farmers who signed a contract, will exit after the contract finishes. This might endanger the future of a strong 'modern' malt barley value chain as training new farmers each year demands much more effort and input by Heineken than investing in current farmers.

During an interview with Heineken, it became clear that the CREATE project is part of Heineken's wider business strategy to gain full control over its value chain. This approach was referred to as 'from barley to bar'. Heineken wants to be able to control every step that is made in its value chain, starting from planting the seeds, to brewing the beer, to selling the beer. In the booklet 'Do you know your beer?' published by Heineken, it was seen that Heineken requires a firm control over the entire supply chain in order to eliminate food safety risks, as well as to safeguard satisfactory quality. Consequently, a vital part of Heineken's supplier governance control is the structural and systematic approach towards the approval of production materials, the assessment of the supplier's ability to comply with Heineken's standards, and the monitoring of quality and performance of the suppliers over time (Gebremeskel, 2014). This strategy was also seen in the WASCD project when a hierarchical model, namely nucleus farmers, was chosen to integrate smallholders into the chain (van Wijk & Kwakkenbos, 2011). Although it is reasonable that Heineken chooses to control all nodes in its value chain, questions should be asked whether a development project should immediately become part of Heineken's business strategy. The CREATE project was launched to accelerate Heineken's sourcing initiatives in Ethiopia. Through this project, smallholders are able to improve their yields, leading to an increase in income. It also benefits Heineken as it eliminates import duties and reduces

transportations costs (Heineken Sustainability Report, 2013). This latter reasoning is part of a strategic management perspective, where one of the goals is to maximize profits by controlling and designing the supply/value chain in a way that will be most beneficial for the lead company (The Partnerships Resource Centre, n.d.). The former reasoning is part of a development perspective, which is concerned with the whole process of value creation from primary processing to consumption, instead of mainly focusing on the retail side of the chain. While the CREATE project is currently not profitable since Heineken has to settle the difference between project costs and project revenue, it is reasonable to assume that Heineken will modify the malt barley value chain in such a way that the chain will be profitable in the long run. The purpose of this project shows that Heineken addresses both the strategic management perspective as well as the development perspective. There is however a need for governments, donor agencies and companies to better understand the (power) dynamics of value chain integration, and to assess the risks and opportunities especially for poor persons in developing countries because incorporating actors in the value chain (i.e. farmers) is mainly concerned with the question of how these actors can gain access to the skills, competences and supporting services required to participate in global value chains (The Partnership Resource Centre, n.d.). In Heineken's case, more emphasis should be placed on power asymmetry, transaction costs and the inclusion of farmers in establishing 'the rules of the game', to harness the developmental character of the project even more.

Although Heineken wants to control the entire supply chain, it does not want to own all these nodes (i.e. hierarchy) as it brings many risks. However, the malt barley chain is currently fully depended on Heineken as it owns several nodes (input provision, collection, and production) and is in charge of most support activities (financial services, agronomical trainings). Consequently, the malt barley value chain is very vulnerable and can easily collapse if Heineken cannot address these duties. Furthermore, Heineken is a brewery and not a financial or agricultural institution, meaning that helping its suppliers to increase their produce and improve production capabilities does not belong to its core competency. Hence, risk mitigation measures need to be taken by introducing third parties to the value chain to strengthen the separate nodes and make the value chain in general less vulnerable. Important to note is that this was also already recognized by Heineken itself.

The shift from traditional to modern value chain exposed farmers to new practises and experiences. While some farmers only see the benefits, others fear of missing out on new market opportunities. The impact of contract farming is further being explored in the next chapter.

### 6.3 Shifting pentagon of livelihood capitals

To answer the final sub-question 'how does contract farming affect the livelihood and food security status of contracted local smallholders?', a survey was conducted among 148 smallholder farmers. The focus group discussions and interviews served as enrichment to the results of the survey. The first part of the survey concerned the effect on livelihood capitals. Table 4 shows the results on physical capital. It is seen that the results differ per capital. Farming equipment, access to fertilizer, and access to other crop markets (selling and buying crops other than barley) were not listed as major improvements. Farmers did experience an improvement in their living conditions, access to pesticides, and access to the malt barley market. Improved living conditions (66 per cent) such as a better house, a better roof, sending children to school, a solar system, more savings, and more food was listed as one of the reasons why farmers are happy with the project. Improved access to the malt barley market (25 per cent) was another reason why farmers are happy with the project. Although better access to pesticides was highly rated, there is a shortage of chemicals which additionally are not suitable enough to control all weed and diseases related to the malt barley crop. 67 per cent of the respondents listed a shortage of chemicals as improvement on the question 'what

improvements to the project do you suggest for Heineken/EUCORD?'. In the focus group discussion and interviews, respondents requested more effective and more chemicals to secure their malt barley harvest as the new seeds are highly dependent on sufficient and efficient chemicals.

Physical Capital	Own better farming equipment	Better access to pesticides	Better access to fertilizer	Improved living conditions	Better access to barley market	Better access to other crop markets
<b>1 Fully agree</b>	1 (0.7%)	56 (37.8%)	0	125 (84.5%)	24 (16.2%)	5 (3.4%)
<b>2 Agree</b>	8 (5.4%)	88 (59.5%)	2 (3.4%)	19 (12.8%)	121 (81.8%)	62 (41.9%)
<b>3 Neutral</b>	81 (54.7%)	0	86 (58.1%)	2 (1.4%)	1 (0.7%)	40 (27.0%)
<b>4 Disagree</b>	58 (39.2%)	4 (2.7%)	57 (38.5%)	2 (1.4%)	1 (0.7%)	40 (27.0%)
<b>5 Fully disagree</b>	0	0	0	0	0	0
<b>Missing</b>	0	0	0	0	1 (0.7%)	1 (0.7%)

Table 4: Survey results on physical capital in both absolute numbers and percentage

The seeds themselves form a rather big bottleneck too. Table 5 presents the results on natural capital. It can be seen that all farmers but one indicated that they have access to better seeds. Although farmers are happy with the new seeds, one-third of the farmers requested a new variety of seeds which is less disease sensitive and higher yielding. One of the biggest remarks was that seeds were not delivered on time. As a result, farmers were unable to sow the seeds at the right time of the year and could therefore not maximally benefit from the new improved seeds. Another issue frequently discussed during the focus group discussions and interviews was the need for more seeds. Currently, Heineken is not capable of supplying a sufficient number of seeds according to hectare of land because the malt barley variety has only been developed a few years ago. Consequently, farmers are unable to produce to their full capacity, missing out on even higher yields. Looking at the other aspects of natural capital, it is seen that 98.6 per cent farmers experienced an increase in malt barley yield. An increase in malt barley production is also seen in figure 7. The vertical axis represents the number of farmers who produced a certain amount of barley. It was decided to adapt the interval of the last two bars of the chart due to a large spreading of numbers. Before the project, most farmers produced between the 0 – 30 quintal per year. Since being part of the project, most farmers have been producing between 40 – 300 quintal per year. Increase of malt barley production was also listed by 130 farmers as one of the main reason why they are happy with the project. The results on yield increase of other crops such as faba beans and potatoes are mixed. 74 farmers indicated that they experienced a yield increase of other crops, whereas 73 farmers did not experience a yield increase of other crops. Possible explanations for this difference might be im(proper) use of chemicals, and/or (im)proper crop rotation practices. More data should be collected on this topic as this research could not verify the exact reason.

Natural Capital	Increase yield malt barley	Increase yield other crops	Access to better seeds
<b>1 Fully agree</b>	106 (71.6%)	4 (2.7%)	100 (67.6%)
<b>2 Agree</b>	40 (27.0%)	70 (47.3%)	47 (31.8%)
<b>3 Neutral</b>	1 (0.7%)	29 (19.6%)	0
<b>4 Disagree</b>	1 (0.7%)	44 (29.7%)	1 (0.7%)
<b>5 Fully disagree</b>	0	0	0
<b>missing</b>	0	1 (0.7%)	0

Table 5: Survey results on natural capital in both absolute numbers and percentage

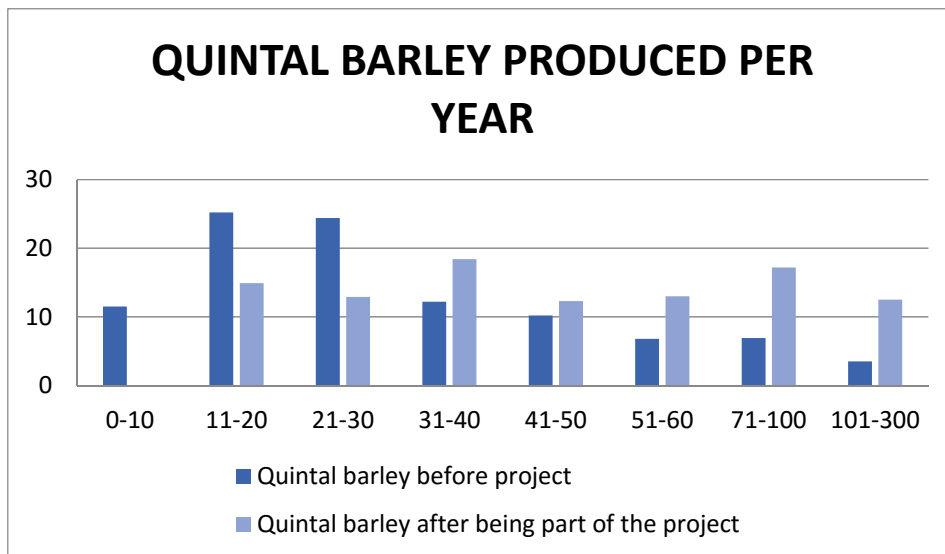


Figure 7: Quintal barley produced per year before and after being part of the project

Table 6 shows the results on financial capital. As can be seen from the table, all member farmers answered 'yes' on the question if their income has increased since they have been contracted by Heineken. The survey lacked the question on actual income increase in numbers or percentage, so no figures can be represented on this topic. Farmers were asked on which items they spend their extra money on. Items most frequently listed were tuition fees to send their children to school (N=134), clothes (N=146), household products (N=137) such as coffee, oil, salt, and others (N=136) which was specified as land tax and land rent. It is unclear why the respondents spend the extra money on land tax and land rent. One of the possible explanations could be that farmers chose to rent more land in order to produce more food and/or malt barley. Unfortunately, due to a flaw in the survey, it was not required to provide information on the difference in hectare of land farmers owned before and after being part of the project. Figure 8 shows the results on the main source of income before and after being part of the project. It is seen that not much has changed. Malt barley was listed as main source of income for the majority of the farmers both before and after the project. Before the project, malt barley was even listed slightly more as main source of income. Almost 40 per cent of the farmers listed a combination of livestock and crop production as main source of income. In table 6 it is also seen that all farmers currently have access to credit services. However, 62 of the respondents indicated that the credit service is not enough to cover their costs/expenses. Consequently, questions can be raised on economic soundness of the value chain in the future. If farmers cannot cover their expenses from the loans, they might be hesitant to lend money from banks in the future. Currently, Heineken offers pre-financing services to the farmers charging no transactions costs or interest. Financially supporting these farmers is a financial burden for Heineken since importing barley is much cheaper than producing local malt barley. Heineken would like to see these financial services to be replaced by micro-financing institutions. At the moment, this is a difficult task as MFIs do often not have the capacity to provide these financial services in an adequate manner. Moreover, during interviews with two stakeholders it was seen that MFIs charge interest rates between 15 and 20 per cent. This is a huge discrepancy compared to the zero interest rate charged by Heineken. The difference in interest rates can discourage many farmers from lending money to cover their expenses, since an interest rate of 20 per cent presents a much higher financial burden and a much higher risk in case harvest losses occur. In addition, an interest rate of 20 per cent might not even equal the profit margin gained by producing malt barley. More data needs to be collected on both the financial capacity of farmers and MFIs, and on the willingness of farmers to risk a higher debt.

Financial Capital	Increased income	Access to credit services	Credit enough to cover costs
<b>Yes</b>	148 (100%)	148 (100%)	85 (57.4%)
<b>No</b>	0	0	63 (42.6%)

Table 6: Survey results on financial capital in both absolute numbers and percentage

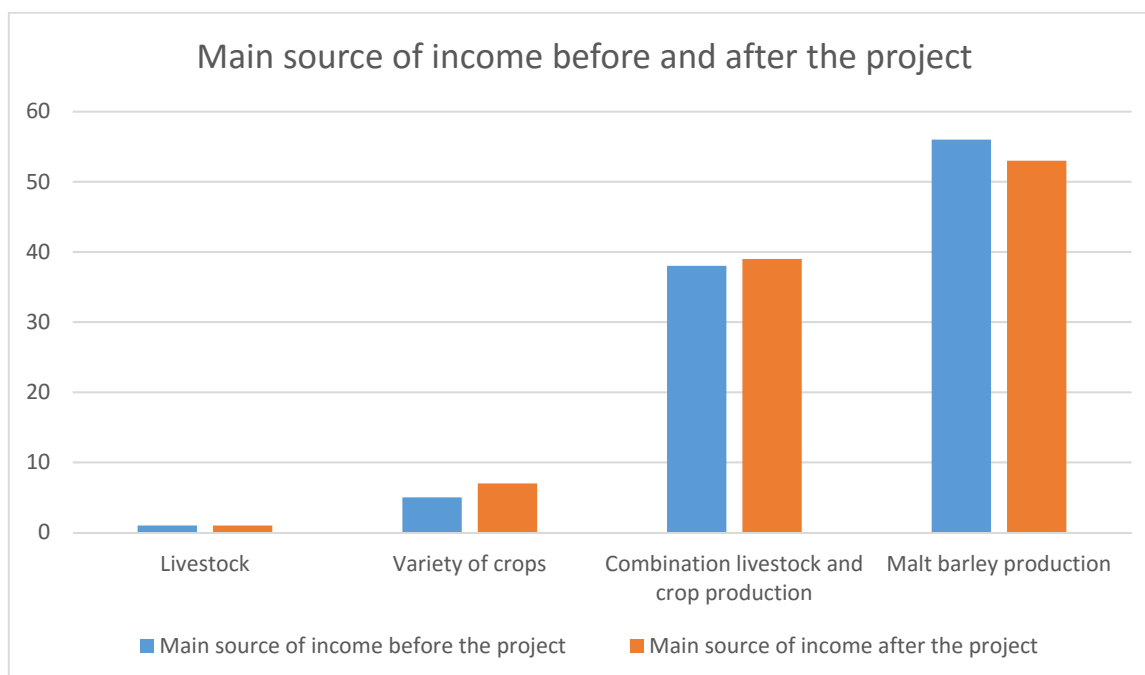


Figure 8: Farmers' main source of income before and after the CREATE project

Human Capital	Better Knowledge	Better Skills	Better access market information
<b>1 Fully agree</b>	86 (58.1%)	86 (58.1%)	33 (22.3%)
<b>2 Agree</b>	57 (38.5%)	57 (38.5%)	114 (77.0%)
<b>3 Neutral</b>	0	0	0
<b>4 Disagree</b>	5 (3.5%)	5 (3.5%)	0
<b>5 Fully disagree</b>	0	0	0
<b>Missing</b>	0	0	1 (0.7%)

Table 7: Survey results on human capital in both absolute numbers and percentage

Table 7 shows the results on human capital. Human capital involves knowledge, skills, and better access to market information. Following Saliolaa and Zanfei (2009), the development of value chain relationships or in other words value chain governance, goes hand in hand with significant knowledge flows. Manunike (2009) also stated that contract farming stimulates a direct knowledge transfer between the international investor and local farmer. In case of the CREATE project, increased knowledge plays a vital role as much depends on the farming practices of the smallholder farmer. The transfer of knowledge is also mentioned as one of the key benefits of FDI to livelihood (OECD, 2008). As can be seen, the majority of the farmers (N=143) indicated that both their knowledge and their skills on agricultural practices have increased. Both knowledge and skills in the CREATE project are transferred via agronomical trainings. The trainings, both theoretical and practical, comprise three phases and are given throughout the entire harvest season. The first phase involves trainings on land preparation (soil preparation, ploughing and sowing), the second phase is crop management (weed control, disease control) and the third phase is post-harvest handling (transport of the seeds, marketing linkage, avoiding mixture of grains). The trainings are solely focused on malt barley

but according to the farmers who participated in the focus group discussions, these trainings can be applied to other crops as well. Although most of the farmers received agronomical trainings (N=144), participants of the focus group discussions stated that the trainings do not suffice. As farmers are not familiar with the new malt barley variety, farmers claimed to need more trainings on sowing, how and when to apply chemicals and fertilizer, and marketing and input supply. In addition, 25 per cent of the survey respondents requested more frequent contact moments with the extension agent and more continuous training. During one of the focus group discussions, it was stated that the trainings in general should be strengthened as not all farmers could benefit from the trainings due to illiteracy. Finally, the trainings should be extended to other aspects such as training on monetary savings, home construction and capacity building of the cooperative. In terms of access to market information, 147 respondents either fully agreed or agreed on the question whether they have better access to market information. This concerns price and players in the market. Another dimension which was measured was happiness. Although not operationalized as human capital, happiness was measured in terms of how happy farmers are with the CREATE project. Results showed that 144 farmers indicated to be very happy and 4 farmers responded to be happy.

Table 8 shows the results on social capital. It is seen that all farmers experienced an increase in their social capital, entailing that their self-esteem increased, that they have a better relationship with other members of the kebele, that they know more people whom they can rely on, and that they play a more important role in the kebele. The only two respondents who disagreed on the question whether they know more people whom they ask for help can in this regard be considered as outliers. During the focus group discussion with members and non-members, it was seen that non-members and members have a stronger relationship and feel more connected since the start of the project. Before the project, the relationship was only based on social interest. Today, the relationship has opened up to new dimensions as members of the project share their experience and knowledge in agricultural practices to non-members. Positive effects were also found concerning social networks. During the focus group discussions participants mentioned that the relationship between farmers and leaders of cooperatives/model farmers intensified as farmers see them now more as a role model whom they can ask for help.

Social Capital	Increased self-esteem	Better relationship with other members Kebele	Know more people whom I can ask for help	Play a more important role in Kebele
<b>1 Fully agree</b>	46 (31.1%)	76 (51.4%)	82 (55.4%)	80 (54.1%)
<b>2 Agree</b>	101 (68.2%)	72 (48.6%)	64 (43.2%)	68 (45.9%)
<b>3 Neutral</b>	1 (0.7)	0	0	0
<b>4 Disagree</b>	0	0	2 (1.4%)	0
<b>5 Fully disagree</b>	0	0	0	0
<b>Missing</b>	0	0	0	0

Table 8: Survey results on social capital in both absolute numbers and percentage

The second part of the fourth sub-question involves food security. During analysing the surveys, it was seen that the majority of the farmers (N=140) were already producing sufficient food for home consumption before being part of the project. After being part of the project, all farmers indicated that they grow sufficient produce for home consumption. Figure 9 presents the crops grown by farmers in percentage. It is seen that the only major difference concerns malt barley variety. After being part of the project, farmers shifted from 'Holker' (local variety) to 'Traveler' (new variety introduced by Heineken). Only some farmers chose to grow the local variety besides the new variety. None of the farmers chose mono-cropping. This contradicts findings of other case studies which showed that contract farming led the farmer to shift from food crops to cash crops (Glover, 1994; Clapp, 1994; Morvaridi, 1995; Rehber, 1998, all cited in Kirsten and Sartorius, 2002). A more recent study of Smalley (2013, as cited in ActionAid, 2013) in Kenya, Tanzania, and

India also found reverse effect on local food availability. The results of the research on the CREATE project match Manunike’s results which argued that contract farming provided opportunities for farmers to harvest their own crops on the side of subsistence (Manunike, 2009). Questions related to mono-cropping and crop diversity concerned number of crops grown and how many hectare of land was covered by malt barley before and since being part of the project. According to Isakson (2011), crop diversity is the cornerstone of long-term food security, as it provides genetic raw material, enabling crops to adapt to changing environmental conditions. In addition, when farmers have increased access to markets, they tend to replace their diverse set of crops with a few high yielding modern varieties that could provide them with higher income. The results show however different results. The majority of farmers (N=136) grow at least three different crops. This is similar to the number of crops grown before the start of the project. 61 farmers covered more hectares with malt barley after being part of the project, 45 farmers covered fewer hectares with malt barley and 42 farmers have kept the same land size. These numbers show that, in terms of food availability, farmers chose slightly different livelihood strategies to cope with the new malt barley variety. Some farmers chose to produce more malt barley which could be used for home consumption or could lead to an increased income, while others chose to produce the same amount of barley on fewer hectares and allocate plots of land to different crops and/or agricultural activities.

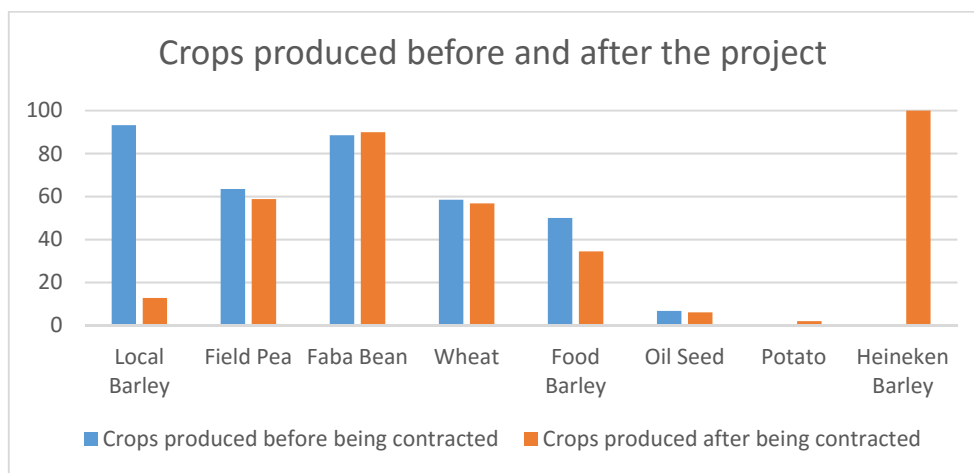


Figure 9: Crops produced by farmers before and after being part of the project

In terms of the nutrition component of food security, the results show that all farmers indicated to consume more different kinds of food. Because the survey mainly focused on the availability component, nutrition was more broadly discussed in the focus group discussions. Due to a rise in income, farmers have a more variate food basket as they can buy different kind of food such as tomatoes, potatoes, meat, teff, and local vegetables. In terms of access, all farmers but two fully agreed or agreed that their physical access to the malt barley market has increased. Farmers experienced increased access as they can now immediately sell their produce to coops/union/model farmers and MFIs and are not dependent anymore on local traders and markets in other kebeles. For crops other than malt barley, farmers stay dependent on weekly markets and local traders who set their price based on market demand. This might explain why only half of the respondents (N=67) fully agreed or agreed that their physical access to other crop markets has increased. Looking at the stability component, all farmers responded ‘yes’ on the question whether they have been able to feed themselves and their household members each day enough food since they have been part of the project. These results were partially supported by the focus group discussions. During one of the discussions, member farmers stated that they now can have three meals a day instead of two meals. The amount of food intake also increased. In addition, these smallholders mentioned that while they are food secure, non-members are food insecure. This was verified by the focus group discussions of non-members who mentioned that they are not food secure due to a lack of good seeds, training, and fertilizer. Because



non-members are not part of a cooperative, they do not qualify to get a loan either, putting them in a more disadvantageous situation. During another focus group discussion with members, it was stated that only 75 per cent of the farmers who participate in the project are food secure. Farmers who have a lack of knowledge in agricultural practices and insufficient farming equipment seem to be food insecure. The results show that there is some inconsistency in the answers provided by farmers meaning that it can be assumed that not all farmers who are part of the project are food secure.

Key benefits for the local population which should derive from participating in contract farming are access to local and export markets, access to appropriate input supplies in timely fashion, increased access to credit despite a lack of collateral, provision of market-focused technical training and assistance, and support in the development and achievement of quality standards and certification (Miller & Jones, 2010; Da Silva, 2005; Eaton & Shepherd, 2001; Glover & Kusterer, 1990). The results show that not all benefits apply to this research. For instance, appropriate input supply in timely fashion regarding seeds and chemicals was listed by the farmers as a major bottleneck of the project. While increased access to credit despite a lack of collateral is also mentioned as key benefit, cooperatives based their selection of member farmers on having collateral. This shows again the exclusiveness of contract farming whereby wealthier farmers have precedence over farmers who cannot meet this criterion. Other benefits such as access to local markets and provision of market-focused training do correspond with current findings.

The results based on the surveys, focus group discussions and interviews show that farmers experienced a positive impact on their livelihood and food security status. Although not all livelihood capitals are equally affected, none of capitals was negatively impacted. Critical remarks have however been made by both the farmers and the various stakeholders. During an interview with Kulumsa, regional branch of the EIAR, concerns were expressed about the new malt barley seeds. Kulumsa argued that these new varieties are high maintenance and input intensive seeds which need timely supply of fertilizer, chemicals and other crop management activities. As farmers often lack these inputs due to inadequate supply, and because they do not have the full capacity yet to maintain these crops, harvest losses often occur. According to Kulumsa, current collaborations with Heineken are limited and more money should be allocated into the development of new seeds, and less money should be spend on advertising. Another concern made by several parties concerned trainings on crop rotation and a multi-chain approach. Similar like the WASCD project, not enough attention is paid to inter-chain upgrading in the CREATE project. Instead, priority is given to process, product and in this project functional upgrading. Inter-chain upgrading (crop rotation) is necessary to avoid exhausting the soil and to control pests, weed and diseases. According to Hundee, crop rotation is not fully integrated in the trainings but will be next year. One stakeholder stressed the importance of a multi-chain approach. Since farmers are part of multiple value chains (e.g. barley, faba beans, oilseeds), attention and assistance must be given to develop and strengthen all value chains, not just the malt barley chain. A holistic approach is required to reach a full developmental impact in the lives of farmers and to transform them into economic actors. Related to the multi-chain approach and food security is that project interventions should not stop 'at the farm gate'. Businesses involved in food security projects should address actual vegetable consumption and other nutrition related concerns to reach a long-lasting behaviour change of farmers towards food and nutrition. Another remark concerns the business case. Creating and strengthening the malt barley value chain was set up as a development project by the corporate world. Consequently, farmers did not act and react directly on market demand. The malt barley market is growing due to the expanding beer market, in which Heineken is an important player. However, to make the farmers less vulnerable, they should become independent suppliers. This also means that farmers should be able to produce the barley without any training and assistance. At this point, farmers often lack the specific knowledge, input, and machinery to grow the seeds to the full maximum, making them dependent on Heineken and EUCORD. The majority of the farmers are also dependent on Heineken as a buyer. In the literature on contract farming

this single-buyer reliance is seen as a risk (Miller & Jones, 2010; Da Silva, 2005; Eaton & Shepherd, 2001; Glover & Kusterer, 1990). Farmers are in this case only dependent on Heineken concerning their malt barley produce, which means that they have other sources of income as well. However, when the government implements its plan to substitute imported barley by locally produced varieties, malt barley will become an even more important crop. To make these farmers strong economic actors and more resilient, it is important that emphasis is placed on the independence of farmers, so they can themselves react on market demand and supply malt barley to multiple buyers. The final remark concerns environmental friendliness. The new seeds require much chemicals and fertilizer but using these too much is not a sustainable and environmentally friendly solution ((Environment, 2015). Hence, although short-term results show positive effects, on the long term, the project needs to focus more on sustainability.

## 7. Conclusion and discussion

This research was initiated to gain a broader understanding of the impact of contract farming in a public-private partnership on smallholder farmers. By means of a mixed-method approach, the following main question has been researched: What is the impact of the CREATE project on the livelihood and food security of local smallholders who have been inserted into the malt barley value chain of Heineken as part of the CREATE project in Ethiopia? The answer to this question is also related to the question whether malt barley can be considered a short-term cash crop or a sustainable investment.

Based on the results it can be stated that smallholders experienced a big transition in their lives as farmers. From being an independent and subsistence farmer who could sell his malt barley to everyone for a fluctuating price in a traditional value chain, to being a contracted farmer controlled by a multinational company selling his barley to a single buyer for a fixed price in a modern value chain. The shift from a traditional to a modern value chain has been characterized by a shift in governance. Before the CREATE project, farmers had no commitments towards traders and price was the central market mechanism. Nowadays, farmers are in a captive network as they signed a formal contract with binding agreements with a lead firm. On the one hand, these agreements give the farmers more certainty. Farmers know what they can expect concerning price and they have a guaranteed buyer for their malt barley. On the other hand, it was seen that farmers' freedoms decrease and obligations rise. Some smallholders saw market opportunities in producing teff and beans as the price per quintal was higher than the price per quintal malt barley offered by Heineken. However, due to contractual obligations, they still had to produce a certain amount of malt barley. This constrained some farmers in their livelihood strategies as they could not act fully independently.

The analysis of the livelihood results showed that on the short-term, the impact is positive and that malt barley is certainly not a short-term cash-crop. Although some capitals were more affected than others, farmers experienced a positive shift in all five livelihood capitals. Especially the impact on social and human capital was noticeable. Regarding social capital, members know more people whom they can rely on, have a bigger social network, and feel more connected, even with non-member, since the start of the project. Member farmers in the kebele help each other and share their experience and knowledge in agricultural practices with non-members. This also led to an increased self-esteem of member farmers. The effects on human capital were found in better agricultural skills and knowledge on for instance soil preparation, sowing, weed control, and market linkage. It was also seen that improvements have been made on natural, physical, and financial capital. Main improvements were increased income, access to better seeds, better access to malt barley market, and increased productivity. None of the farmers experienced damaging effects on their livelihood, albeit that some farmers felt restricted in their freedom due to the contractual obligations. In terms of food security, the results showed that the majority of farmers was already producing sufficient food for home consumption. Hence, in terms of availability, most farmers were food secure before being part of the project. Since being part of the project, all farmers stated to produce sufficient food for home consumption. Looking at the stability component, improvements were witnessed as farmers who participated in the focus group discussions stated to eat three meals a day instead of two meals. Unfortunately, these changes could not be supported by the survey as the survey only focused on the stability component after being part of the project. The food security components 'access' and 'nutrition' also experienced a positive impact. However, more attention needs to be paid to access of other food markets as now only access to the malt barley market has been predominantly improved. Although most farmers in that region are subsistent farmers, a lack of access to other markets might inhibit them in their livelihood strategies in case they experience a loss in malt barley harvest. This shows the importance of a multi-chain holistic approach in a development project to ensure all aspects of a farmer's live are addressed.

As the project still runs, it is hard to define what impact the project has on the long term. To ensure that malt barley becomes a sustainable investment, it is important to discuss future sustainability as the results lead to several concerns. First, the value chain is currently too weak and will even collapse if Heineken cannot perform its chain activities and provide the support services anymore. The modern malt barley chain is too dependent on one actor. More actors are needed to strengthen the various nodes. Related to this is that the majority of smallholder farmers in the malt barley chain is dependent on a single buyer, which is also Heineken. If the project stops or if Heineken cannot buy the barley anymore, farmers will experience a relapse in their livelihood. Although farmers are not completely depended on Heineken as they still grow other crops and keep livestock, a strong value chain can much benefit the farmers by offering a chance to improve their livelihoods, especially now the Ethiopian governments wants to substitute imported barley. This entails that the value chain must also be strengthened by means of contract enforcement as weak enforcement can lead the chain to fail (Miller & Jones, 2010). A final remark related to the value chain concerns the provision of financial services. Currently, Heineken offers pre-financing services to the farmers charging no transactions costs or interest. To develop a strong value chain, these financial services should be replaced to MFIs. However, MFIs charge interest rates between 15 and 20 per cent. Since the farmers who took part in this research are very price-sensitive, they might reconsider growing malt barley once they have to start lending money from MFIs. The difference in interest rates can discourage many farmers to take on a loan as it puts them in a more risky financial situation in which return on investment cannot be guaranteed. Second, the business model is based on a development project initiated by one organization, which is Heineken. As a result, farmers are (partially) reliant on Heineken, while they should be market players who act and react on market demand. This also shows the contradiction between the strategic management perspective and the development perspective, whereby as a solution business and development must come together to aim at economic growth as a means for achieving poverty alleviation. Third, the seeds are high maintenance, disease sensitive, and input intensive varieties. Much chemicals, fertilizer and crop management are needed in order to grow these seeds. Harvest losses occur because farmers do not receive these inputs on time and because they often lack the capacity to manage these crops. Looking at environmental friendliness, questions can be raised on ecologically soundness. Pesticides and fertilizer are damaging for the environment and for the soil. This can lead to harmful side-effects on health, food security and natural habitat in the long run (Environment, 2015). To ensure that malt barley becomes a sustainable investment, more attention needs to be paid to sustainable agricultural practices and less economic dependency. This will make the project truly “environmentally friendly, socially just and economically sustainable”.

The results show that contract farming, can have a beneficial short-term impact on the livelihood of farmers and local development. A whole new malt barley value chain was set up, offering 20.000 farmers an opportunity to raise their incomes and increase their food security. Although evidence from case studies suggested that contract farming led to mono-cropping which could decrease food security, the results of this research are contradictory. It was seen that farmers opt a livelihood strategy in which they continue to grow at least two other crops besides malt barley. Moreover, food security has increased as farmers could have three meals instead of two and had a more variate food basket. A positive side effect also occurred as farmers’ children were sent to school more often due to an increased income, expanding the developmental impact from an individual to a family. It was however seen that contract farming has a certain degree of exclusiveness since better-resourced farmers tend to capture the contracts, leaving poorer farmers out of the project. Questions can thus be asked on how suitable this business model is in developing countries as the gap between well-resourced and poor-resourced farmers will increase. In addition, the contractual agreements transferred certain production risks from the lead firm to cooperatives, which in turn put a smaller risk in the hands of farmers. These contractual agreements limited farmers at the same time to act

and react on market demand and limited the farmers' direct access to influence market governance, just as was suggested by Repar, Onakuse and Bogue (2013). This refers again to the discussion between the strategic management perspective and the development perspective of value chains. As farmers in developing countries often do not have the means, the knowledge, and the capacity to exert any degree of influence, more emphasis should be placed on power asymmetry, transaction costs and the inclusion of (poor) farmers in establishing the contract, to reach economic growth in a sustainable and responsible way (The Partnerships Resource Centre, n.d.). The final question relates to the benefits of a PPP as collaborations with the Ethiopian government are rather limited. As was seen in the case study on public-private partnership of van Wijk and Kwakkenbos (2011), issues were raised on the limited role played by governments while they should be making durable institutional changes to support the project. A PPP can further offer many advantageous as partners can put their strengths together. If ties between the public and private sector in the CREATE project get stronger, this could potentially lead to a more lasting developmental impact.

The results of this research can be used as a basis for further research on contract farming in developing countries. Adjustments to the methods used should however be made as there are several limitations. First, the research assistants who were hired for this research worked for Heineken/EUCORD. This might have resulted in socially desirable and biased answers in the surveys. Although the two research assistants were not directly familiar nor involved with the smallholder farmers, the smallholder farmers might have recognized them as the research assistants are frequently in the field to talk to cooperatives, model farmers, unions and MFIs. Future research should be executed completely independent from the lead firm as in this case the researcher might intentionally or unintentionally have been influenced. The second limitation of the research concerns the sampling strategy. A paper written by Barrett et al. (2012) on contract farming showed that a control group should ideally refer to farmers who supply the same commodity to precisely the same markets and for the same purpose. As this is often difficult to do, separating the welfare gains from participation in a contract farming arrangement from these other features can be challenging (Barrett et al, 2012). After evaluation of the research area in Arsi, it was concluded that it was not feasible within the research period to select a control group which would perfectly match the group of farmers which was part of the CREATE project. This limits the research in such a way that it cannot be statistically stated whether the changes in livelihood and food security can be attributed to the CREATE project. In other words, no causal linkages can be assigned to the changes in food security and in livelihood capitals due to the CREATE project as there might have been other variables that influenced the outcomes on livelihood and food security. One example is for instance side-selling. Although specific numbers are not available, it was estimated by Heineken that roughly 25 per cent of the farmers sell their barley to other buyers. This means that changes in livelihood for those farmers may not be fully attributed to the CREATE project, as they might be partially caused by other buyers. The limitations and the current results led to several questions which could lead to future research. First, future research should focus more on the exclusive part of contract farming as to see if and to what extent the gap between resource-rich farmers who are in the project and resource-poor farmers who are left out becomes bigger. Second, the long-term effects of contract farming are hardly explored. Future research on the short-term effects of contract farming could incorporate a follow-up research which focuses on the long-term effect, hereby taking into consideration economic, social, and environmental sustainability.

It is seen from this research that a PPP project using contract farming can have a short term positive developmental impact on the livelihood and food security of local farmers. Although it is difficult to generalize the results on a wider scale, this research can partially answer the question how FDI can be optimized to maximize the benefits and to minimize the risks by a few lessons learned. First, it is important that all contractual agreements are clearly explained to farmers and cooperatives so that all parties are

aware of the obligations and responsibilities. Additionally, farmers should be given an active voice in case of negotiations. Second, contract enforcement should be implemented as it potentially can damage the whole value chain. This concerns both the buyer (on time supplies and on time payment) and producer side (in case of side-selling). Third, the value chain should consist of more actors and the lead firm should not act outside its core activities. Hence, value chain actors should be sought before or in an earlier stage of the project. Additionally, since farmers are part of multiple value chains, attention and assistance must be given to develop and strengthen all value chains (i.e. a multi-chain approach), not just the malt barley chain. A holistic approach can transform the farmers into independent economic actors. Fourth, it is important to listen to the farmers' needs and wants and not just base mid-term evaluations on hard numbers. In this way, trainings can for instance be adapted to the lack of knowledge and skills and price negotiations can be taken place. Fifth, if a development project becomes part of a wider business strategy, a development perspective should become more integrated with a strategic management perspective, hereby taking into account power asymmetry, transaction costs and inclusion of farmers in decision making processes. Furthermore, to reach sustained food security, businesses involved in a development project should dedicate themselves to exert influence beyond the farm gate and promote proper vegetable intake and address other nutrition related concerns. Sixth and finally, a project must always focus on both short-term and long-term effects. Sustainability, both environmental and economic, is essential to reach a long-lasting developmental impact. In such a case, we are one step closer in solving the global challenge.

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## 9. Appendices

### Appendix A – List of questions during focus group discussion

#### **Focus group discussion – members**

*Questions concern participation of the project, contractual agreements, livelihood and food security  
Allowed to record the discussion? Information will be processed anonymously.*

- Why did you choose to participate in the CREATE project?  
→ Are you better off now? Still happy to participate?
- What are the terms and agreements of the contract you signed with the cooperative/model farmer?
- Did you know that you could not sell the malt barley to other buyers before signing the contract?  
→ Do you think this is fair?
- Are you allowed to use the malt barley for home consumption?
- Are you happy with the price you get paid per quintile malt barley?  
→ Why/why not? How much do you get paid?
- What do you do with the malt barley that you do not sell to Heineken?
  
- What kind of extension services do you receive?  
→ Are the trainings useful only for the malt barley crop? Crop rotation?  
→ What kind of trainings do you need more? Are you able to grow the malt barley without trainings?
- How did the project affect your financial situation? → What do you do with the extra money?  
→ Access to credit services enough to cover your costs?
- Do you have better access to farming inputs and equipment?  
→ Seeds, fertilizer, chemicals → Are the input sufficient enough? Is Heineken willing to listen?  
→ Are you happy with the new seeds/ inputs? Why/ why not?
- Have you better access to the malt barley market since you have been contracted by Heineken?  
→ In what ways did your market access improve?  
→ What about other crop markets?
- Have your living conditions improved since you have been contracted by Heineken?  
→ if so, how?
- How did the project influence your (social) position in the kebele?
- Do you know more people whom you can rely on since you have been contracted by Heineken?
- Have you been more accepted by members of the kebele since you have been contracted by Heineken? →  
How do the members express this? Better relationship?
  
- Have you and your household members been more food secure since you have been contracted by Heineken?  
→ How come?/What has changed?  
→ What kinds of food do you eat?
- Do you eat more different kinds of food since you have been contracted by Heineken?  
→ Can you give me examples? (vegetables/meat/fruit/candy)
- Are you able to buy food if you have not grown sufficient produce for home consumption?  
→ Why (e.g. more money)/ Why not? (no physical access) / and before the project?
- How often have you or other household members been hungry since you have been contracted by Heineken? (skip meals/ cut the size of meals)

- and before being contracted?
- How dependent are you on Heineken? In what ways are you dependent? What if the project stops? Are you able to live a decent life without Heineken?

**Focus group discussion – non-members**

*Questions concern reasons for non-participation, relationship with farmers who are contracted by Heineken and food security. Allowed to record the discussion? Information will be processed anonymously.*

- Why were you not contracted by Heineken?
    - own choice?
  - Do you want to get contracted?
    - why? Why not?
  - Are you affected by the presence of Heineken? If so, how?
    - Ability to sell your malt barley?
    - increasing competition?
  - How is your relationship with members of the kebele who are contracted by Heineken?
    - Clashes?
    - Did the relationship change?
  
  - Are you able to grow sufficient food for home consumption for all household members?
    - How come? (Lack of seeds, fertilizer, etc. )
    - If no, what do you do to feed your family?
    - What kinds of food do you eat?
  - Are you able to buy food if you have not grown sufficient produce for home consumption?
    - Why not? (no physical access, no money)
  - How often have you or other household members been hungry since you have been contracted by Heineken? (skip meals/ cut the size of meals)
- How dependent are you on traders/suppliers?



## Appendix B – Survey on livelihood and food security

Dear respondent,

My name is Sandra Ederveen and I am a Dutch master's student at the University of Utrecht, The Netherlands. For my master's thesis I am doing research on the CREATE programme of Heineken. I want to investigate the impact of this programme on your livelihood and food security status. By means of this research, I hope to provide useful information to Heineken to improve the project which can be beneficial to you and your family.

This survey is divided in five parts which are:

1. Personal and household information
2. Farming information
3. Livelihood
4. Food security
5. Final questions

Participating in this survey is voluntary. Your answers and information will anonymously and confidentially be processed and will be used for this research only. None of the information will be shared with other people in the community. This survey will take about 20 to 25 minutes. All the answers and information you provide are correct; no wrong answers can be given. If you have any questions, please do not hesitate to ask.

Personal and Household information
------------------------------------

1. Head of household

1. Male
2. Female

2. Age \_\_\_\_\_

3. Woreda & Kebele \_\_\_\_\_

4. Number of household members: \_\_\_\_\_ (adults) \_\_\_\_\_ (children under 10) \_\_\_\_\_ (children 10-17)

5. Highest level of education \_\_\_\_\_

6. I am a member of:

- a. Cooperative
- b. Union
- c. Model farmer
- d. Micro-finance group
- e. Other

7. Contracted by Heineken/EUCORD since (please indicate year and month)

Year: \_\_\_\_\_ Month: \_\_\_\_\_

Farming information
---------------------

8. How many hectares of land do you currently own?

\_\_\_\_\_ hectares

9. What crops did you grow before being contracted by Heineken/EUCORD(in order of importance)

- 1.
- 2.
- 3.
- 4.
- 5.

10. What crops have you grown since you have been contracted by Heineken/EUCORD (in order or importance)

- 1.
- 2.
- 3.
- 4.
- 5.

11. Do you currently own livestock?

◇ Yes

◇ No

12. Did you replace livestock for crops after being contracted by Heineken/EUCORD?

◇ Yes

◇ No

12.1 IF YES, can you explain why?

\_\_\_\_\_

13. How many hectare of your land was covered by malt barley before being contracted by Heineken/EUCORD?

\_\_\_\_\_ hectare

14. How many hectare of your land is currently covered by malt barley?

\_\_\_\_\_ hectare

15. How many quintiles malt barley did you produce per year before being contracted by Heineken/EUCORD?

\_\_\_\_\_ quintiles

16. How many quintiles malt barley do you currently produce per year?

\_\_\_\_\_ quintiles

17. How many quintiles malt barley do you sell to Heineken per year?

\_\_\_\_\_ quintiles

18. How many quintiles malt barley do you sell to other suppliers/markets per year?

\_\_\_\_\_ quintiles

19. How many quintiles malt barley do you currently use for household consumption per year?

\_\_\_\_\_ quintiles

20. How many quintiles malt barley did you use for household consumption per year before being contracted by Heineken/EUCORD?

\_\_\_\_\_ quintiles

21. What is currently your main source of income?

◇ Malt barley production

◇ Variety of crops

◇ Livestock

◇ Combination of livestock and crop production

◇ Other (please specify)\_\_\_\_\_

22. What was your main source of income before being contracted by Heineken/EUCORD?

◇ Malt barley production

◇ Variety of crops

◇ Livestock

◇ Combination of livestock and crop production

◇ Other (please specify) \_\_\_\_\_

Livelihood

23. Do you currently have access to credit services?

- Yes
- No

23.1 IF YES, is that enough to cover your costs/expenses?

- Yes
- No

24. Is the loan restricted to only agricultural input?

- Yes
- No

25. Do you have access to extension services provided by Heineken/EUCORD?

- Yes
- No

25.1 IF YES, please indicate what kind of extension services you receive

\_\_\_\_\_

\_\_\_\_\_

26. How often do you meet with the extension agent per year?

Frequently

Sometimes

Never

**Please indicate on a scale from 1 to 5 to what extent you agree with the following quotes (1 is fully agree, 5 is fully disagree)**

27. I have better knowledge on agricultural practices (soil preparation, planting, fertilizer use, how to treat barley post-harvest) since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree    3. Neutral    4. Disagree    5. Fully disagree

28. I have better skills on agricultural practices (soil preparation, planting, fertilizer use, how to treat barley post-harvest) since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree    3. Neutral    4. Disagree    5. Fully disagree

29. I have better access to market information since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree    3. Neutral    4. Disagree    5. Fully disagree

30. I have better access to the malt barley market since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree    3. Neutral    4. Disagree    5. Fully disagree

31. I have better access to other crop markets since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree    3. Neutral    4. Disagree    5. Fully disagree

32. My yield of malt barley has increased since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree    3. Neutral    4. Disagree    5. Fully disagree

33. My yield of other crops has increased since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree                      3. Neutral                      4. Disagree                      5. Fully disagree

34. I have access to better seeds since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree                      3. Neutral                      4. Disagree                      5. Fully disagree

35. I have better access to pesticides since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree                      3. Neutral                      4. Disagree                      5. Fully disagree

36. I have better access to fertilizer since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree                      3. Neutral                      4. Disagree                      5. Fully disagree

37. My living conditions have improved since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree                      3. Neutral                      4. Disagree                      5. Fully disagree

38. I own better farming equipment since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree                      3. Neutral                      4. Disagree                      5. Fully disagree

39. My self-esteem has increased since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree                      3. Neutral                      4. Disagree                      5. Fully disagree

40. I have a better relationship with other members of my kebele since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree                      3. Neutral                      4. Disagree                      5. Fully disagree

41. I know more people whom I can ask for help when I have a problem since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree                      3. Neutral                      4. Disagree                      5. Fully disagree

42. I play a more important role in my kebele since I am contracted by Heineken/EUCORD

1. fully agree    2. Agree                      3. Neutral                      4. Disagree                      5. Fully disagree

43. Has your income increased since you have been contracted by Heineken/EUCORD?

◇ Yes

◇ No

43.1 IF YES, on what items do you spend the extra money you earn? (you can choose more than one option)

◇ Food

◇ Schooling/tuition fees

◇ Clothes

◇ Household products (please specify) \_\_\_\_\_

◇ Other, namely (please specify) \_\_\_\_\_

Food security
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44. Did you grow sufficient produce for home consumption for all household members before being contracted by Heineken/EUCORD?

◇ Yes

◇ No

44.1 IF NO, what did you do to feed your family?

Purchase food                      Gift (received)                      Borrowed                      Other: \_\_\_\_\_

45. Do you currently grow sufficient produce for home consumption for all household members?

◇ Yes

◇ No

45.1 IF NO, what do you do to feed your family?

Purchase food                      Gift (received)                      Borrowed                      Other: \_\_\_\_\_

46. Do you or other members in your household eat more different kinds of food since you have been contracted by Heineken/EUCORD?

Yes                                      No                                      Sometimes

47. Have you been able to feed yourself and all your household members each day enough food since you have been contracted by Heineken/EUCORD?

Yes                                      No                                      Sometimes

47.1 IF NO OR SOMETIMES: what was the main reason for the shortage of food?

\_\_\_\_\_

Final questions

48. On a scale from 1 to 5, how happy are you with Heineken/EUCORD? (1 is very happy, 5 is very unhappy)

1 very happy    2 happy                      3 neutral                      4 unhappy                      5 very unhappy

Please specify why:

\_\_\_\_\_

49. Would you accept the offer if Heineken/EUCORD offered you a renewed contract?

◇ Yes because \_\_\_\_\_

◇ No because \_\_\_\_\_

50. What improvements to the project do you suggest for Heineken/EUCORD?

\_\_\_\_\_

\_\_\_\_\_

51. Do you have any additional information you would like to share?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Thank you very much for your time and participation!

Appendix C – Pictures of research

