

# Differences between model farmers and primary purpose cooperatives in Ethiopian agricultural development: evidence from the CREATE project

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## ABSTRACT,

*Within the sphere of agricultural development, model farmers and cooperatives are key to success for agricultural extension projects in the developing world, as they act as a gateway for smallholder farmers to access improved resources and technologies. The path to prosperity, however, does not come without controversy, as the long-recognized potential of cooperatives is outperformed by the superior level of performance attained by model farmers. The enormous difference that divides model farmers and cooperatives is rarely afforded critical scrutiny, which raises the question to find the apparent reasons behind model farmers' alleged success. To do so, model farmers and cooperatives are analyzed according to their level of financial capacity, social recognition, and the services they provide to smallholder farmers. Model farmers, cooperatives and their respective member farmers were interviewed to explore the way they interact, work, and cooperate within and outside the scope of agricultural extension projects. To illustrate, examples from the CREATE project, a supply chain development project implemented in the Arsi and West-Arsi zones in Ethiopia are shown. The study shows that financial capacity and social recognition are predominant to define the success in the malt barley supply chain. In more details, through larger access to capital and stronger social recognition, model farmers can provide customer-focused services and secure long-lasting loyalty within the local community. Active competition harm cooperatives that are not able to compete against model farmers, though they can deliver a robust service to their members. Despite assuming a crucial role in agricultural development, cooperatives' low financial capacity and lack of social recognition make us question their real contribution to the broad picture of poverty alleviation. In contrast, model farmers are seen as a fast and safe feature for both knowledge transfer and profit considerations.*

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## Keywords

Model farmers, cooperatives, aggregators, smallholder farmers, outgrowers, agricultural extension projects

# 1. INTRODUCTION

## 1.1 The CREATE Project Ethiopia

Addressing the needs at the Bottom/Base of the Pyramid (BoP) presents a prodigious opportunity for the world's wealthiest companies to seek their fortunes and bring prosperity to the aspiring poor (Prahalad and Hart, 2002b:1). Even though the concept of 'business fighting poverty' is taking the development community by storm (Wach, E., 2012), over the past decade, there has been an increase in investments to improve market opportunities for smallholders in many developing countries such as Africa, Latin America, and Asia. Many of these initiatives adopted a value chain approach, which is centered on the principles of promoting chain-wide competitiveness and improving collaboration and trust between actors, based on existing market opportunities (United Nations, 2018).

Against this background, the European Cooperative for Rural Development (EUCORD), in collaboration with HEINEKEN International, has been implementing since 2013 a malt barley value chain development project in Ethiopia, entitled: "Community Revenue Enhancement through Agricultural Technology Extension" (CREATE). The project works through the implementation of contract farming, a key inclusive business model which involves an agreement between one or more farmer(s) and a contractor (i.e., buyer) for the production and supply of agricultural products under forwarding agreements (Eaton and Shepherd, 2001). The project implementation area was initially specified to be in three malt barley production zones - Arsi, West Arsi, and Bale— of Oromiya National Regional State. However, after the enormous benefits brought by the program, the CREATE project was expanded to S.W. Shewa, W. Shewa, N. Shewa, and Amhara regions.

Heineken and the Dutch ministry of finance 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 supply chain in Ethiopia (Levy, 2014). As it was observed in recent studies about the social and economic impact of the CREATE project, the results are remarkable; an estimated 24,836 farmers planted in the 2017/18 season while around 30,000 other farmers benefited indirectly by accessing to improved seed. After the introduction of Grace and Traveler, two new, improved malt barley cultivars, productivity doubled, as the average yield of malt barley in the project area increased from 2.4% to 5.3%. Thanks to that, a total of 182,000 tons of malt barley are sold to the food market and 54,410 tons to the industry (CREATE 2019).

To be able to reach the most significant portion of smallholder farmers to include in the CREATE project, EUCORD and Heineken use a diversified sourcing strategy which consists of a focus on different aggregators who are in charge to identify member farmers that will take part in the project. The aggregators mainly involved in the CREATE project, and in contract farming in general, are model farmers, multipurpose primary cooperatives, informal groups, microfinance institutions (MFIs), and even commercial/state farms.

Evidence from the CREATE project showed that model farmers have more consistent outcomes than any other aggregators in the value chain, while cooperatives performance is minimum

(Debela, S., 2016). For example, the Addis Fortune (2014) stated that more than 90% of the domestic supply of malt barley is delivered by model farmers (Persoon, N., 2014).

Ethiopian agriculture heavily relies on the performance of aggregators in the value chain. However, their differences in terms of performance outcomes are still left unexplored. Thus, hindering the complete understanding of model farmers' superior performance against other aggregators, within different value chains, and African agriculture as a whole.

## 1.2 Problem statement

The knowledge gap that leads to this research is that little to no literature has been found that specifically focuses on analyzing the relationship among the activities and the performance of different aggregators within the scope of agricultural extension projects. Interest is growing in the literature to define the importance that model farmers and cooperatives assume against agricultural development, specifically focusing in the often-weak role that cooperatives fulfill (Wanyama et al., 2008; Francesconi and Heerink, 2010; Francesconi and Wouterse, 2019;). For instance, a number of scholars have already tried to define the specific functions model farmers assume in extension networks, (Taylor, 2018) or to explore the specific characteristics that define them (Ayele, K., K., 2016). Furthermore, the literature available has primarily focused on analyzing cooperatives' development in a liberalized economy environment (Wanyama et al., 2009), exploring their potential to contribute to the development process (Develtere et al., 2009) or analyzing cooperatives' growth problems and commercial failure (Francesconi and Wouterse, 2019; Tesfamariam, 2015).

Quite some research is available about the impact extension projects have on the livelihood and food security of smallholder farmers (Deteres, A., 2011; Ederveen, S., 2016; Debela, S., 2016). However, scientific literature that exclusively investigates the channels in which model farmers and cooperatives operate and their interaction within and outside extension networks is missing. Further research is then needed, to stimulate a more profound understanding of aggregators' performance, and reveal their true potential for the development of African agriculture as a whole.

Evidence from the CREATE project implemented in Ethiopia will serve as a benchmark to analyze the different aggregators from a closer perspective, serving a twofold purpose. First of all, it will contribute to the existing scientific literature in the area of inclusive business, by adding theoretical knowledge about model farmers' and cooperatives' activities and revealing the challenges that are still left unresolved regarding their operations. Second, it will add up to the existing expertise that EUCORD has available to find an answer to the unexplored superior performance of model farmers against cooperatives within the malt barley value chain. It should be noted that EUCORD is well aware of the superiority of model farmers in terms of contractual performance (Persoon, N., 2014; Debela, S., 2016). However, the specific details and actions that support this performance are lacking, making the practical relevance of this research even stronger.

In the absence of all the mentioned information, it is then difficult to find an apparent response to why model farmers manage to obtain better performance outcomes than other aggregators

(Persoon, N., 2014; Debela, S., 2016), which lead to the formulation of the main research question.

### 1.3 Research Question

With constrained levels of funding within public agronomic services, there exists a pressing need for research and extension agencies to produce demonstrated ‘success stories’ of disseminated innovations (Sumberg et al., 2012a). This requirement opens an opportunity to consolidate the status of model farmers and cooperatives as key tools of external success demonstration (Flachs, 2017). Furthermore, the combination of a personal interest in the awareness of the importance of agricultural development, along with the use of sustainable and just ways of production to promote peace and prosperity for the people and the planet, has led to the motivation to try to tap into the aforementioned research gap. Therefore, the goal of this research is to explore the key differences in how model farmers and cooperatives carry out their activities within the malt barley supply chain in Ethiopia and see how this affects their final performance.

The mentioned problem statement leads to the following research questions:

- i. *“Why do model farmers have more consistent performance outcomes in the malt barley supply chain than multipurpose primary cooperatives in the Arsi and West-Arsi zones in Ethiopia?”*
- ii. *“What are the key challenges of model farmers and multipurpose primary cooperatives within the malt barley supply chain in Ethiopia?”*

<b>Key Concepts</b>	
<b>Model farmers</b>	Farmers that are elected as role models for neighboring households by local governmental institutions. Criteria include wealth and good agricultural practices indicators (Persoon, N., 2015).
<b>Smallholder farmer/outgrowers:</b>	Those with a low asset base, operating less than two hectares of cropland (World Bank, 2003).
<b>Multi-purpose cooperatives</b>	Farmers’ organizations established according to the law of the country to address social and economic problems of their members whose activities are performed by not paid elected leaders from among the members (Debela, S., 2016).
<b>Unions</b>	Farmers’ organizations established according to the law of the country to address social and economic problems of their members whose activities are performed hired professionals (Debela, S., 2016).
<b>Micro-finance group</b>	Institutions organized in groups that provide loan for interested farmers for purchase of improved inputs and working capital to collect the produce of their members and supply to Heineken (Deters, A., 2011).
<b>Aggregators</b>	Agents of the supply chain that negotiate with producers on behalf of a group of consumers (model farmers, primary cooperatives, cooperative unions, MFIs) (Persoon, N., 2015).

**Table 1: Definitions of used concepts**

## 1.4 Defining Stakeholders

In the following section, model farmers, cooperatives, and unions will be further discussed, in order to provide a precise contextualization of their applicability in the agricultural development model.

### 1.4.1 Model Farmers

The use of model farmers is a common feature of agricultural extension strategies that seek to diffuse new technologies and practices among smallholder populations in the developing world (Franzel et al., 2013).

Model farmers are farmers that are elected as role models for neighboring households by local governmental institutions, and they are of crucial importance to the agricultural development as they tap into two specific activities: (1) Model farmers create an entry point into a community for the diffusion of new technology and transfer of knowledge. They are seen as a partial solution to longstanding concerns about the limited effectiveness of externally driven extension models in which outside experts attempt to introduce and instruct upon new technologies, inputs or cultivation techniques (Chambers et al., 1989; Leeuwis, 2004; Stone, 2016). By acting as nexus points in the flow of information, subsidies, and material inputs between extension agencies and local community, model farmers assume positions as gatekeepers to valued resources (Lefort, 2012). (2) Model farmers are seen as exemplars of agricultural innovation among their member farmers (Taylor, 2018). Their community well recognize most of them for their excelling economic activities and social relations. It has to be noted that without substantial social standing, local cultivators are less likely to listen to or attempt to emulate the model farmer (Stone, 2016).

Among the specific characteristics that distinguish a model farmer from a non-model farmer, worthy of note are the experience in the malt barley industry and their literacy level, which is considered to be more elevated compared to smallholder farmers. However, the most notable factor that distinguishes model farmers from other entities of the malt barley supply chain is their high level of wealth (Ayele, 2016). In fact, model farmers have greater access to finance thanks to the various sources of income they generate. This adds up to the malt-barley business, and together with the ambition to undertake new opportunities for personal enrichment, create an ideal context in which model farmers determine their success (Taylor, 2018).

Finally, particularly for the CREATE project, other parameters that EUCORD used to assess model farmers are: 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, their experience in contract farming and on the number of member farmers they administer. (Ederveen, S., 2016).

### 1.4.2 Multipurpose primary cooperatives

Multi-purpose primary cooperatives are “group-based, autonomous enterprises with open and voluntary membership and democratic governance.” (Smith, 2004). By being voluntary, democratic, and self-controlled business associations, cooperatives offer the institutional framework through which local community gain control over the productive activities from

which they derive their livelihoods (Ofeil, 2005). Cooperative development in Ethiopia, and Africa in general can be said to have traversed two main eras: the era of state control and that of liberalization.

During the first era (1974-1991), cooperatives in Ethiopia were conditioned to emerge as dependent agents of the state by serving as instruments for implementing government socio-economic policies (Wanyama et al. 2008). This created a robust government-cooperatives rapport that made the government the prime patron of the cooperatives. With the liberalization of the economy in most African countries through the adoption of Structural Adjustment Programs (SAPs) in the 1990s, some improvements have been made in cooperative societies. However, cooperative practitioners and policy-makers in Africa know very well how much government tutelage still stifles private cooperative initiative and innovation (Develtere et al., 2007). The cooperative formation, for instance, often starts from a government initiative through its government structures (Emana, B., 2009).

Nonetheless, primary cooperatives continue to be promoted in Africa and other parts of the developing world as some of the preferred instruments for poverty alleviation (Wanyama et al., 2009). Indirectly, the services provided by cooperatives have the potential to contribute to wealth creation and social protection. For example, bulking and marketing services offered to members allow the member to earn higher income from increased bargaining power due to collective action and economies of scale (Herment A. Mrema, 2007). Among other functions, Develtere et al., (2007) also identifies: (1) link of small-scale and medium-scale producers to the national economy; (2) provision of an element of competition that is often lacking in rural areas; and (3) contribution to agricultural stability (Develtere et al., 2007). However, many countries in Africa still face growth problems as most of the primary cooperatives are not competent enough in their business activities (Francesconi and Heerink 2010; Bernard et al. 2008a). Management committee members, in fact, have no knowledge of the cooperative business transactions.

In most cases, cooperatives are unable to employ high caliber management staff, and because of weak governance, the burden of due diligence is left to cooperative members who may have limited education on financial management (Tsefamariam, K., 2015).

Furthermore, cooperatives mainly operate in rural and urban areas where poverty prevails. For the whole of the sector, it can be concluded that the rural poor smallholders constitute the bulk of the members, which makes social capital formation a significant limitation (Develtere, P., & Pollet, I., 2007). It can be expected that the poor who participate in these cooperative groups gain high returns from their participation such as training and access to inputs such as fertilizer, seeds, and crop protection products (CPPs) (Narayan & Pritchett, 1999; Maluccio, Haddad & May 2000).

### *1.4.3 Cooperative Unions*

Cooperative unions were new institutions that organized the primary cooperatives. They provide major services to enhance their business, and as such, they are seen as the apex of the cooperatives in most regions. (Kodama, Y., 2007). Similar to primary cooperatives, the formation of cooperative unions also

starts from a government initiative, primarily through regional and district level promotion bodies. Hence, most cooperative unions' managers are seconded from the government (Emana, B., 2009). A significant proportion of cooperative unions are engaged in the marketing of agricultural produce. Cooperatives provide marketing options for the members and non-members, though the members receive higher prices for their produce. Cooperative unions are involved in export and domestic marketing activities, financial transactions, and social capital development (Bernard et al., 2007). Some of the main services that unions provide to primary cooperatives are the following: (1) they import agricultural inputs, such as fertilizer, seeds, and Crop protection products (CPPs), and distribute these inputs to members (it should be noted, however, that most of the times government provide collaterals for unions, without which bank loans for importing fertilizer would not be possible to obtain). (2) Cooperative unions purchase agricultural produce from members at a competitive price and offer dividends on share capital to their members. (3) Cooperative unions provide to members transportation of produce, storage of produce, credit, and facilitation of training to primary cooperatives. However, the extent to which the services offered by cooperative unions meet the demands and needs of the members varies on a case by case basis. (Emana, B., 2009).

## **2. THEORETICAL FRAMEWORK**

In this section, the malt barley supply chain in Ethiopia will be described, so to provide a clear understanding of the various actors and activities that comprise it.

### **2.1 The malt barley supply chain in Ethiopia**

It is essential to have a clear understanding of the various actors and activities that comprise the malt barley supply chain in Ethiopia, as the results will build up to this information.

To serve this purpose, two models elaborated by Persoon, (2014), are used to explain how the many agents of the malt barley supply chain interact with each other and distribute the inputs needed for production. As it can be seen in figure 4 (see appendix 9.5), Persoon (2014) managed to accumulate all the information necessary to build a two-fold picture of the malt barley value chain in Ethiopia.

Persoon (2014) gives a complete overview of the value chain, showing how the produce is delivered from smallholder farmers to the different malt factories passing through the aggregators. Besides Heineken, various malt factories are involved in the malt barley business in Ethiopia such as Assela Malt factory, and Gondar Malt factory. However, this paper will solely focus on the relationships between Heineken and the studied aggregators. Furthermore, several agents can be found along with smallholder farmers at the beginning of the value chain, such as commercial farms and import agencies. Nevertheless, only smallholder farmers will be addressed in this research.

#### *2.1.1 Inputs distribution*

A different perspective of the malt barley value chain is showed in figure 5 (appendix 9.5), where the inputs are distributed from Heineken to smallholder farmers. It is important to note that Heineken does not distribute the improved seeds directly to each smallholder farmers. There are now more than 30,000 outgrowers involved in the CREATE project/Ethiopia and

supplying seeds directly to each of them would be inefficient and time-consuming. Therefore, Heineken and EUCORD contracted aggregators that take care of creating farmer organizations that comprise a determined number of members.

The process starts with Heineken supplying the improved variety to different entities of the supply chain. Heineken is the leading distributor of Traveler in Ethiopia, as it also distributes the seeds to the competing malt factories. Depending on the type of channel used to distribute seeds to smallholder farmers, more entities in the value chain might be involved in the process. On the one hand, model farmers are the direct supplier of seeds to smallholder farmers. After demand collection, they collect the improved seeds from Heineken and then ensure to deliver them directly to smallholders.

On the other hand, when the distribution is coordinated through cooperatives structure, the process takes a longer turn. Most of the time primary cooperatives do not dispose of enough money to buy the seeds directly from Heineken. Therefore, the distribution has to be coordinated through unions or other malt factories. Member farmers then, have to wait a more extended period until the seeds reach them, as the inputs pass through malt factories, unions and finally primary cooperatives. Only then member farmers can go to the designated cooperative and collect the amount of seeds to which they are entitled.

As soon as the farmers have received all the inputs necessary for production, plating can start in June, and will last until November when the harvest period will commence. At this time, both cooperatives and model farmers are involved in various activities to ensure supply to the contracting factory. Transportation, storing, loading, and unloading have to be conducted to ensure timely supply, and the way these activities are deployed have a substantial impact on the performance level attained by both aggregators.

## 2.2 Moderators of Performance Outcomes

In this section, the insights gained by the analysis of the literature available about model farmers and cooperatives are discussed, to establish the moderators that could have an effect on performance outcomes.

### 2.2.1 Financial Capacity

Emana (2009), identifies cooperative's capital shortages as the main obstacle in the attainment of their objectives, while Puri (1979) observed that financial self-reliance is a necessary condition for cooperatives' self-regulation. On the other hand, in a study about model farmers in Ethiopia, Lefort (2012) defines "gaining wealth" as a major principal line to respect to be qualified as a model farmer.

There is a strong emphasis in the literature by which the level of financial capacity appears to have a significant effect on the aggregators' performance outcomes. *This creates an opportunity to explore this relationship, and to include financial capacity as the first independent variable in the conceptual model.*

Considering the higher level of wealth attributed to model farmers (Lefort, R, 2012), and the continuous challenges faced by cooperatives as to capital creation (Develtere, P., & Pollet, I., 2007), different relationships between financial capacity and performance outcomes can be expected. A positive relationship can be possibly expected when the unit of analysis will be model

farmers. On the contrary, a negative relationship can be assumed when the unit of analysis will be cooperatives.

### 2.2.2 Social recognition

Stone (2016) noted that in conditions of flux in seeds market and management techniques, cultivators can be swayed about the legitimacy of an agricultural innovation first rather than proven results or suitability to local agroecological conditions. The question of what criteria are used in selecting models for emulation is central to a theory of farmer behavior (Stone, 2016). To this regard, Henrich and Gil-White (2001) and Stone et al. (2014), among others, argue that people (farmers) often copy behaviors and opinions from prestigious models that had nothing to do with generating the models' prestige. These points have been suitably elaborated by Taylor (2018) who attributes to social recognition particular importance to succeed among cultivators. He further explains the origin of model farmers' success by serving as "a community repository of knowledge while also helping to translate and embed an agricultural innovation into local contexts."

However, social recognition is seen as a challenge for cooperatives. The lack of recognition among outputs buyers and farmer community, place a major limit to cooperatives' development. For example, cooperatives in the developing world will only aspire to achieve advanced certification, when their community will recognize them for being a well-functioning organization (Agriculture Transformation Agency, n.d.). From the prominence by which social recognition appears in the literature, it can be deduced that the same has a significant impact on model farmers' and cooperatives' success within the value chain, and it should be taken in consideration when exploring aggregators' performance outcomes. *Therefore, social recognition will be included as the second independent variable in the conceptual model.*

Again, a tendency for cooperatives' performance outcomes to be negatively affected by the level of recognition and prestige they assume in the community is revealed. On the contrary, model farmers' strong social recognition, can predict the positive impact it will have on performance outcomes.

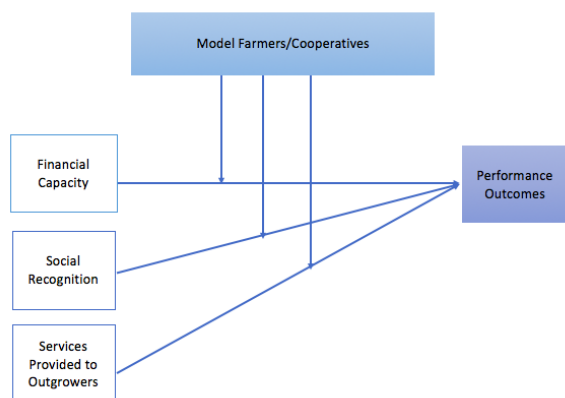
### 2.2.3 Services provided to outgrowers

Before the start of the CREATE project, only a few barley farmers had access to extension services such as access to credit, inputs supply, and agricultural produce marketing (ATA, 2013). To this regard, cooperatives and model farmers had a significant direct impact on people's lives through the services they rendered (i.e., credit, agricultural inputs, access to markets, storage & transport, among others.) (Pollet, I, 2019). *Therefore, the degree to which the mentioned services are delivered to outgrowers will be the third and last independent variable to include in the conceptual model.* Due to the assumed lower level of cooperatives' financial capacity and social recognition, a negative relationship might also show between the services provided and performance outcomes obtained. On the other hand, the same relationship might reveal to be positive for model farmers, as their superior level of financial capacity and social recognition enables them to deliver more tailored services.

## 2.3 Conceptual model

**Financial capacity, social recognition, and the services provided to outgrowers** are found to be crucial factors to secure ongoing success in the malt barley value chain. Thus, draw considerable attention to exploring their effect on cooperatives' and model farmers' performance outcomes.

All the information mentioned above is summarized in the conceptual model presented in Figure 1.



**Figure 1: Theoretical model of the relationship between moderators and performance outcomes.**

The conceptual model shows the relationship where three independent variables (**financial capacity; social recognition; and services provided to outgrowers**), are seen to have an impact on the dependent variable (**performance outcomes**). This impact is moderated by model farmers or cooperatives, which in this case are the units of analysis. Depending on the unit of analysis chosen, the three independent variables will have a different effect on the performance outcomes.

The elaboration of the conceptual model will serve as a benchmark for the development of the interview questions and the data collection, which will now be explained.

## 3. METHODOLOGY

The purpose of this research is to understand the differences in how model farmers and cooperatives carry out their activities in order to see how this affects their final performance. To collect and analyze empirical evidence, the study strictly relies on primary sources of data gathered through in-depth key informant interviews. Thus, this research will follow a highly qualitative approach.

The CREATE project works with 34 cooperatives, 64 model farmers, and 27,870 smallholders only in the Arsi and West-Arsi zones. According to the demography of Ethiopia, each zone is divided into districts or "*woreda*," and the districts are further divided into wards or "*kebele*," the smallest administrative zone in Ethiopia. (WHO, 2019). The CREATE project intervention scope covers a total of 17 *woreda* and 92 *kebele* respectively in the Arsi and West-Arsi zones. As the interviews were conducted face-to-face, due to the complexity of Ethiopian demography and time limitation, it was not possible to go to every *woreda* targeted by the project. Therefore, convenience sampling has been used

to make a selection based on some practical criteria such as easy accessibility, availability and geographical proximity of the district (Dörnyei, Z., 2007), leading to the final decision to select a total of six *woreda* in the Arsi zone and three *woreda* in West-Arsi zone. Out of the nine *woreda* selected, random sampling was used in order to identify the participants to include in the interview process. A total of thirteen model farmers (eight from Arsi zone and five from West-Arsi zone) and seven cooperatives (three from Arsi and four from West-Arsi) have been randomly selected. Besides, in order to ensure an equal external perspective as regard to both model farmers' and cooperatives' activities, focus group discussions were organized with smallholder farmers. Three FGDs were conducted with a relatively large number of participants (10-13). Participants were chosen based on availability. During the FGD, the aggregator in charge of the member farmers wanted to be included in the experiment. However, in order to provide an environment that would enable smallholder farmers to talk spontaneously and be free from any external pressures, it was decided to not include the aggregators in the FGD. The focus group questions can be found in the appendix (9.3). The baseline questions were avoided so as to not overlap the official end line evaluation, but instead provide something additional. Questions were mainly focused in analyzing the differences between model farmers and cooperatives and their perception in the community.

Transportation to the targeted *woreda* was organized by the agronomists employed by EUCORD working in the different zones, who also took care of contacting each participant to organize the interviews. In the Arsi and West-Arsi zones, English is not spoken, as the main language is Amharic or Oromo. Therefore, the interviews were conducted with the support of the EUCORD's agronomists, who took care of translating the interview questions to Oromo or Amharic and then reported the respondent's answers in English.

Now that the research strategy and sample size have been identified, in the next sections, data collection and data analysis will be discussed.

### 3.1 Data Collection

The data for this study was collected by conducting a range of semi-structured interviews with different agents of the malt barley supply chain involved in the CREATE project. Semi-structured interviews were selected as means of data collection as they are well suited for the exploration of the perceptions and opinions of respondents regarding complex and sometimes sensitive issues. Furthermore, it enables probing for more information and clarification of answers (Bariball and White, 1994). In order to investigate the differences in model farmers' and cooperatives' performance outcomes, it was necessary to analyze the activities undertaken by both aggregators. Therefore, interview questions were pointed at identifying the main differences in how model farmers and cooperatives carry out their operations.

Before the start of the interview, participants were asked to sign the informed consent form, which can be found in the appendix (9.4). In order to improve the validity of the study, several actions were taken. Internal validity was assessed using triangulation. Triangulation strengthens a study by combining methods. This can mean using several kinds of methods or data,

including the use of both quantitative and qualitative approaches (Patton, 2001). Following this pattern, various sources were used within the study. Different agents involved in the malt barley supply chain were interviewed (model farmers, smallholder farmers, and cooperatives) increasing the number of data sources used. Furthermore, EUCORD's website and various publications of the CREATE project were used in order to gather initial information about the topic being investigated. Finally, after the interviews, the notes were discussed with the agronomists, in order to make sure that the data was right. Also, the interview questions were based on the theoretical framework ensuring that the questions were an accurate measure of the activities conducted by both aggregators.

As for external validity, the method elaborated by (Yin, 1994) was used. According to (Yin, 1994) if the finding is replicated with different kinds of people and in different places, then the evidence may suggest that the findings apply very broadly (Johnson, 1997). Therefore, multiple agents of the malt barley supply chain were interviewed in order to provide a complete picture of the measured effects, decreasing the possibility to generalize the findings beyond the studied cases. To ensure the reliability of this study, the examination of trustworthiness is crucial (Seale; 1999). To serve this purpose, a unique interview template was developed for both model farmers and cooperatives where the same questions were asked. The interview questions mainly aimed at exploring the level of financial capacity as well as the services offered to member farmers.

A separate interview template was developed for smallholder farmers. Here the goal was to understand how model farmers and cooperatives are perceived by the farmer community, thus, to find out their level of social recognition. However, all the interviews were aiming at finding the differences between aggregators' performance outcomes<sup>1</sup>.

### 3.2 Data Analysis

Following the qualitative approach of this study, during the interviews, notes were taken, and afterward, they have been transcribed. Transcripts of interviews are text, that will then be used to construct data (Van der Kolk, 2017). After permission, each interview was tape-recorded. Each participant did not show any issue in being recorded and also agreed to use their name in the report. In order to analyze all the data gathered, content analysis was used, according to the methods taught by van der Kolk (2017) and further elaborated in the literature by (Erlingsson, 2017). After the interviews were transcribed, the text was divided into meaning units and condensed. The condensation should be a shortened version of the same text that still conveys the essential message of the meaning unit (Erlingsson, 2017). Next, open coding was used (Strauss & Corbin, 2007); this means that all data collected was divided into fragments. The fragments were then compared among each other, grouped into categories dealing with the same subject, and labeled with a code. (Silverman, D. 2016)

To be able to link the data to the research question and the theoretical framework, the data was coded regarding the theoretical framework. In this way, the following moderator of

performance showed in the texts: (1) financial capacity (2) social recognition, (3) and services provided to outgrowers. Afterward, relationships between the codes and the main findings were visualized into one table comprising data from all interviewees (see next page). Using tables to display the data systematically and focused is essential logical analysis; amongst others, it allows comparisons, noticing patterns and trends, and observing differences (Miles & Huberman, 1994). By analyzing the data from the table, it was possible to arrive at insightful results.

## 4. RESULTS

In this section, the key results of the interviews are described. The results are discussed following the given order; first of all, both model farmers' and cooperatives' activities are analyzed according to the moderators identified in the conceptual model (financial capacity, social recognition, and services provided to outgrowers). For the sake of logic, the main findings were first transcribed and then gathered in the form of codes, which are displayed below. The codes present a thorough guide to understand the main differences between aggregator's' performance outcomes and include the needful information to answer the following research question<sup>2</sup>.

*"Why do model farmers have more consistent performance outcomes in the malt barley supply chain than multipurpose primary cooperatives in the Arsi and West-Arsi zones in Ethiopia?"*

### 4.1 Financial Capacity

#### 4.1.1 Cooperatives

From the analysis of the interviews, financial capacity was found to have a negative impact on cooperatives' performance outcomes. This is because although cooperatives have different ways to diversify their portfolio and increase their financial capacity, these attempts are not enough to sustain a successful business. As a result of this, cooperatives often do not have enough funds to buy the produce from their members and to provide a reliable service, which is the reason why they cannot keep up with the quantity delivered by model farmers. Two main issues arise from this consideration.

##### 4.1.1.1 Shares and Dividend Distribution

The primary source of income cooperatives relies on comes from the annual fee members have to pay to take part in it. However, there is a limit in the number of shares members can buy, which often cannot exceed the ten shares. Depending on the cooperative, the price per share may vary (50 ETB, 120 ETB, 135 ETB, 1,500 ETB). The logic behind the ten shares limit entirely reflects the working and the purpose of cooperatives and has been implemented to tackle the following issues. Primary cooperatives receive fertilizers, crop protection products (CPPs), and seeds from unions, mostly on credit. Cooperatives then, make sure to distribute the inputs to their members and refund the union of the credit issued.

<sup>1</sup> Refer to the appendix for the breakdown of the interview guide that addresses each moderator

<sup>2</sup> Refer to table 2 to see the summaries of the findings of this study

**Table 2 Overview of interview results**

Aggregator	Moderator	Interpretation	Quotes	
Model farmers	Financial capacity	Business diversification	“I receive money from different sources. Beside the CREATE project I have a car rental; I trade different agricultural products, and I also build and rent new buildings”	
		Investment	“I invested the 50% of my capital to make my operations better. I used the money to rent more farm land, to improve production process and to give credits to smallholders.”	
	Social recognition	Role in the community	“Our model farmer is a model person in the social life.”	
		Reduced bureaucracy	The process with model farmers is faster because they are the decision makers.”	
		Customer focused-service	“Model farmers have more money and they can pay higher prices per quintal on cash. They consider serving us as part of his business”.	
	Services to outgrowers	Technical service	“I hardly work with other entities of the malt barley supply chain.”	
		Financial service	“I provide credit services to outgrowers”	
		Social service	“If you are not involved in social issues to support your farmers than it is impossible to be successful, it is a primary requirement.”	
	Cooperatives	Financial capacity	Dividend and share distribution	“Inputs and profit are distributed according to the number of shares members own. Then, we imposed the share limit to avoid unfair distribution.”
			Lack of investment	“Nobody wants to invest in cooperatives as no results will be seen in the short term”
Social recognition		Hierarchical structure	” It requires a lot of time to get the service you need from cooperatives because approval has to come from unions or woreda administration”	
		Corruption	“Once I had to bribe one cooperative’s member with 500 ETB to convince him to buy my produce”	
		Mismanagement	“Early turnover of cooperatives’ committee affects the long-term orientation of cooperatives.”	
		No commitment	“Most of the times cooperatives are led by not educated people with no skills to properly run the cooperative.”	
Services Provided to outgrowers		Technical service	“We have different committees in charge to closely monitor our members from land preparation to harvesting period”	
		Financial service	“We do not provide any credit service to outgrowers”	
		Social service	“We provide credit on kind, basic consumption goods distribution, and facilitate discussion and exchange of information.”	

However, the input distribution takes place according to the number of shares members own, giving priority to the biggest shareholders. Without any share limit then, members that dispose of more wealth would be able to buy higher number of shares, which would automatically give them primacy over any other members when it comes to input distribution. This gives them an unfair and unequal advantage, as they can secure inputs before shortage occurs. The same goes for the dividend’s distribution. Dividends can come from two main sources; (1) the shares cooperatives own in other organizations such as banks or malt factories, and (2) the income generated by the cooperatives throughout the financial year. The total profit generated from all the operations, is then shared among the members and is issued in the form of dividends. Again, the priority is given to the

members that own more shares, who are entitled to receive a bigger portion of the total profit.

The distribution policy adopted by the cooperatives, has been designed to support a right and just allocation of resources with their members. However, it is also found to be a limitation to cooperatives’ financial capacity. Cooperatives in fact, can reach member sizes that go beyond the 1000 members. According to the study conducted, the cooperatives interviewed could register a profit between 50,000ETB and 325,000ETB (the least and the most successful). The profit, however, has to be divided among huge number of members, leaving little to no money to be reused in more profitable activities. The distribution policy then, though effective, puts some restraints on the overall profit realized by cooperatives.



#### *4.1.1.2 Lack of investment*

According to the interviews, it was clear that “no one wants to invest in cooperatives”. The cooperative’s committee is often made up of individuals elected from the farmer community. The committee might comprise both rich and poor farmers, and many of them already own a piece of land which constitute their main source of income. However, no member wants to invest in the cooperatives as “no concrete result will be seen in the short term.” Furthermore, due to the control unions often exercise as to the financial operations of cooperatives, possible investors might feel reluctant to invest their money without knowing the actual use cooperatives will make of it. Even though members might not feel the need to invest in the cooperatives, substantial financial support is provided by unions. Cooperative unions, in fact, provide financial credit to cooperatives when requested. Though limited, the credit can be extended up to 300,000 – 400,000 ETB and more. Finally, many cooperatives also have the opportunity to get loans from banks even without collateral, however many are reluctant to this option, due to the interest rate such loans entail, (Commercial Bank of Ethiopia for instance, has a fixed interest rate of 12% per year).

#### *4.1.2 Model farmers*

As opposite to cooperatives, it was found that the level of financial capacity has a positive impact on the final performance of model farmers. In fact, it was seen that model farmers have efficient and more effective ways to diversify their portfolio and generate more wealth than cooperatives.

The main difference that distinguishes model farmers from cooperatives lays on the fact that model farmers are pro-active, educated, and risk-taking people, who thank to their ambitions and higher business acumen, manage to grow and improve their activities to provide a more dedicated service to smallholder farmers. They like to engage in different activities and also know how to take advantage of the various opportunity that the malt barley business creates.

##### *4.1.2.1 Business diversification and investment*

One crucial difference that distinguishes model farmers from cooperatives is that the former engages in activities that differ from high-value marketable agricultural products. For instance, almost all the model farmers interviewed engage in car and house rentals, chickens, cattle, and other related activities. Furthermore, the most successful model farmers would also undertake more ambitious projects like building construction. One model farmer in the Arsi zone, for instance, managed to build an entirely new building that it was then put on rent. Currently, part of the building is being used by a bank, and other organizations will soon rent it once it is completed.

Finally, model farmers invest in their business. This often implies the construction of bigger warehouses or the purchase of bigger pieces of land to include in their production. This creates a context where model farmers are the direct beneficiary of their operations, which makes investing much easier.

As a mean of comparison, it was asked the participants the total amount of wealth per year generated from the CREATE project. The most successful model farmers declared to earn between 450,000 ETB and 600,000 ETB excluding all costs, which often range between 2 and 4 million ETB (including produce collection, transportation, and input distribution). Looking at these figures, it is then possible to understand that model farmers dispose of a vast quantity of capital; however, it has to be noted, that this money is not paid all at once, but is revolved throughout the year as the produce is being sold to Heineken.

## **4.2 Social Recognition**

### *4.2.1 Cooperatives*

As it was analyzed in the literature, social recognition is of crucial importance to ensure success and win the competition against other aggregators in the malt barley supply chain. However, cooperatives do not seem to fulfill such a role within the farmer community. According to the results of the interviews, it was found that outgrowers do not trust cooperatives, and for this reason, they prefer to supply through model farmers, as they get a more legitimate and reliable service. The dominant factors that contribute to the poor recognition of cooperatives’ importance among the community are highlighted below.

#### *4.2.1.1 Lack of transparency and corruption*

Out of the four outgrowers interviewed, three declared that they did not know how cooperatives use members’ money as no final audit is organized, and three declared that they witnessed an act of corruption within the cooperative. Examples of corruption that came out during the interviews were bribing, using cooperatives’ money for personal purposes or making preferences during input distribution by not declaring additional quantity intended for relatives or friends.

#### *4.2.1.2 Lack of commitment from cooperatives’ committee members*

Cooperatives lack the required capacity to become well-functioning. One of the main issues related to this is that the members of the committee in charge of leading the cooperative are not officially employed. In fact, as mentioned before, cooperative’s committee members are elected by the farmer community, however, participation is voluntary and not retributed, which strongly hinder the members commitment to do well in their tasks. Often this is the reason why individual’s decide to take part to the cooperatives’ committee without being paid. Being part of a cooperative in fact, expose the members to take part in various trainings offered by different NGOs, as well as to secure access to inputs needed for production. Furthermore, the fact that the committee members are selected from, and belong to, the farmer community, indicates that most of them are not enough educated and do not possess enough business or practical skills to be able to properly run the cooperative. For instance, they might not be able to assign the right quality level according to the grading system or even fail in properly weigh the produce delivered by smallholder farmers.

#### 4.2.1.3 Mismanagement

Mismanagement has also been found to negatively impact the level of social recognition cooperatives assumes in the community. Early turnover of the committee, for instance, has major repercussions on the long-term vision of cooperatives' operations and impact. Committee members may often engage in long term planning. However, due to the short time they serve in the committee, they might not be able to achieve their objectives, which are often replaced by small and short-term plans. Most of the time, when new members of the committee are elected, it might take some time to understand and adapt to the former business modality through which the cooperative was operating. As a result, a gap creates where no action is taken, making cooperatives more vulnerable to change than other aggregators. Furthermore, it might also happen that the new committee might decide to break entirely with the old modalities the former committee was pursuing. Even starting new activities and implementing new practices according to new beliefs and styles.

#### 4.2.1.4 Cooperatives' hierarchical structure

Though functionally they stand as independent institutions, cooperative organizations are closely linked with their supporting government institutions. Cooperative formation often starts from a government initiative through its government structures. The common organizational hierarchy of cooperative and the supporting government structures at different levels are shown in the appendix (Figure 6), where the four organizational hierarchies of cooperatives are identified as (from top to bottom): (1) confederation of cooperatives, (2) federation of cooperatives, (3) cooperatives unions, and (4) primary cooperatives<sup>3</sup> (Emana, B., 2009).

Though a subjugate of government structures, cooperatives receive various benefits through their supporting cooperative institutions. While on the one hand, federations provide strong technical support; on the other hand, cooperative unions take care of providing more strategic services such as credit, fast input distribution, and purchase of agricultural produce.

However, the same structure that is supposed to spark cooperatives development is also one of the major causes of cooperatives' low development. Being at the bottom of the hierarchical structure, in fact, may sometimes reveal a long and complicated bureaucratic process, in which cooperatives action find its main limitation. First of all, all the major decisions as regard to the buying price of the produce and the input distribution are taken at federations' level. This automatically excludes primary cooperatives from critical issues such as price setting and input allocation. Therefore, cooperatives have to wait a long time until the information is fully delivered from higher levels, which hinder cooperatives' responsiveness to act and may also result in distorted information.

Furthermore, some critical issues with regards to production and distribution might not be solved effectively. This is because decisions are taken at the government level rather than at the farmers level. The distance created, makes it hard for member

farmers to have personal communication with cooperatives, to discuss their major concern or even negotiate. This places cooperatives out of competition, as other entities in the value chain might have a closer relationship with farmers and might have the freedom to act according to their needs.

The result of this long and intertwined bureaucracy process is also reflected in cooperatives' payment system. As explained before, cooperatives do not have the freedom to act, unless official approval is issued by both the *woreda* administration and the union. This means that when a payment is scheduled from cooperatives to farmers, the process has to be first approved by different entities, before being processed and received by the farmer.

Finally, the existence of an intricate bureaucratic process and the power gaps caused by the poor administration of legal practices, facilitates government intervention in cooperatives' operations. To deal with the direct intervention of the government in the cooperative arena is not the aim of this paper. Nevertheless, there is strong scientific evidence that refers to the government's tutelage still stifling private cooperative initiative and innovation (Develtere et al., 2007).

#### 4.2.2 Model Farmers

Social recognition is found to have a strong positive impact on model farmers' performance outcome. According to the interviews, model farmers assume a critical role for the local community they serve, contrary to cooperatives, that are not recognized as such by their stakeholders. There is a strong evidence that defines model farmers' success over cooperatives according to their higher perceived level of social recognition. This is described by the following points.

##### 4.2.2.1 Model farmers as role models

Model farmers are perceived as a role model for the community they serve. Member farmers that take part in the CREATE project mostly live in rural areas, located far away from better-connected towns or districts. Therefore, technologies are often hard to introduce in the community as people lack the channels and the skills to implement them. Before the start of the CREATE project, smallholder farmers were mainly obtaining their profit from the food market, which does not offer a reliable and consistent way of generating money. In this regard, the role of the model farmers has been substantial, and actively contributed to changing the lives of thousands of farmers. First of all, model farmers were the first to introduce new technologies such as improved seeds, fertilizers, and crop protection products (CPPs) in their community, and they helped smallholder farmers to become familiar with them. Crucial in this process is the fact that model farmers are also ordinary farmers, who own and cultivate their lands. Therefore, smallholder farmers often learn directly from them as to the best ways to follow the improved production methods, to collect their produce and to properly store it until the final sale. Finally, the number of members that model farmers include in their organizations are more limited than cooperatives. Model farmers carefully select smallholder farmers by including

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<sup>3</sup>Only three of these hierarchies are currently functional as the confederation has yet to be established.

people that share the same interests, which highly facilitate the coordination within model farmers and smallholder activities.

#### 4.2.2.2 *Reduced bureaucracy*

The intricate bureaucratic structure that governs cooperatives causes many smallholder farmers to refrain from entering into business with them. Model farmers, instead, enjoy the benefit of acting through a less complicated structure, which facilitates a more personal and direct approach with smallholder farmers. Model farmers are the only ones who are held accountable for their activities, without the need to share and discuss the decision process with anyone else. To this regard, model farmers are preferred because there is no perception of bureaucracy around their activities. They are the ones that take the final decision; they work every day, and thanks to this, they manage to establish a closer relationship with member farmers, becoming a secure benchmark to rely on. *“Model farmers consider serving and satisfying member farmers' needs as part of their strategy to win the competition, which allows them to closely follow up on every issue that might arise”.*

#### 4.2.2.3 *Customer-focused service*

Model farmers provide an overall better service than cooperatives. According to the data analyzed, not only outgrowers but also cooperatives acknowledged that model farmers do pay higher prices per quintal. Model farmers, indeed, offer better prices to member farmers. However, this is because they know they can mix the produce with lower quality barley and then deliver it to Heineken or other contracting factories. Cooperatives, on the other hand, are more reluctant to compromise their quality standard. Moreover, they are not allowed to pay higher prices than the one already set by the federations. Once the collection period starts, model farmers pay their members cash in hand, which constitutes an incentive for farmers to sell their produce to them rather than to cooperatives. Lastly, model farmers deliver inputs on time. As model farmers do not belong to the same complex hierarchical structure of cooperatives, they can ensure a faster service as to input supply. They usually collect the total demand of crop protection products, fertilizers, and seeds needed by the farmers and deliver it to the shop or cooperative designated for distribution. Then, member farmers can collect the amount of fertilizers they are entitled to directly from the cooperative while model farmers take care of distributing the seeds and the CPPs directly to smallholders' homes. The evidence of model farmers' strong social recognition is even supported by their member farmers. For example, in case of lack of finance, model farmers would benefit from the trust of their outgrowers, as they would agree to leave the produce on credit (the credit in some cases can extend to a total of one million ETB). Outgrowers then wait until the model farmer sells the produce and get the money back.

### 4.3 Services provided to outgrowers

#### 4.3.1 *Cooperatives*

According to the interviews conducted, it was possible to identify three different types of services that aggregators provide to outgrowers: technical, financial, and social. Financial service has been found to have a negative impact on cooperatives' performance outcomes, while social and technical service were found to contribute positively to it, especially with a strong

positive impact on land preparation and quality of the produce achieved.

#### 4.3.1.1 *Technical service*

The technical service cooperatives provide to member farmers includes complete oversight of farmers' activities. Starting from land identification process for malt barley cultivation, cooperatives have special committees, which often, in collaboration with government agencies and agronomists, take care of identifying and approving the area allotted for malt barley cultivation. Some of the major criteria used are land topography, altitude, and rotation.

After the land has been appropriately identified, follow up is given during sowing time, where committees check whether member farmers use or not the improved seeds and the appropriate extension practices issued by the CREATE project. The same service is delivered during harvesting time. If member farmers follow all the improved production methods during the pre-production phase, cooperatives can expect a certain minimum yield. Moreover, by delivering a close service during the production process, cooperatives can ensure high-quality malt barley that goes beyond the level supplied by model farmers. However, this can sometimes be a major limit, as for keeping the high standard of the produce they supply, cooperatives are obliged to refuse lower quality malt barley. This considerably reduces the total amount of produce they can deliver to the contracting company.

#### 4.3.1.2 *Social service*

First of all, it has to be noted that the primary goal of cooperatives is to empower the local community they serve and grow as a whole. When asked about the reason for joining a cooperative, almost half of the interviewees declared that the main reason for them was to get social satisfaction. However, no evidence has been found that explains how the rest of the community perceives social satisfaction. In fact, most of the outgrowers interviewed were highly dissatisfied with the job carried out by cooperatives. On the other hand, cooperatives do provide social support for their members. For instance, they provide credit on kind, which means that they supply inputs on credit to their smallholder farmers, and then charge the total cost of the credit when the final amount of produce is delivered. Also, they take care of distributing basic consumption goods such as oil and sugar to their members at a very affordable price (1kg of sugar in private shops cost 60 ETB, while through cooperatives the price is 18 ETB). This allows some members to access basic goods, which would not be otherwise possible due to their weak financial status.

Finally, in order to provide further assistance to their community, the most successful cooperatives may also facilitate discussion among members by inviting agricultural experts from different woreda and kebele to discuss the most relevant issues related to production. Also, they may directly support the exchange of information about the market, so that smallholder farmers can make better-informed decisions when dealing with other entities in the malt barley supply chain. Most of the times, in remote areas where competition is weak, model farmers may try to buy crops at a lower price, taking advantage of the farmers' weak exposure to market information. Cooperatives are aware of this and inform

member farmers to take appropriate precautions and act accordingly.

#### 4.3.1.3 Financial Service

The main finding as for the difference in the services model farmers and cooperatives provide to smallholder farmers, was found in the failure of cooperatives in delivering financial services to outgrowers. A negative relationship was found between financial service and cooperatives' performance outcomes. Out of the seven cooperatives interviewed, all of them admitted not to provide any sort of financial support to outgrowers. Loans in kind are then the preferred method by which cooperatives ensure that their members get full access to inputs. However, due to their low financial capacity, cooperatives cannot afford to provide a stable financial service.

#### 4.3.2 Model farmers

The services provided to outgrowers have also been found to have a positive impact on model farmers' performance outcomes. A substantial difference was found in the lower level of technical service model farmers provide to member farmers. This is because model farmers, compared to cooperatives, lack manpower which cannot be deployed to check every step in the production process closely. However, from the analysis of the interviews, it was possible to arrive at an insightful finding, that shows the efforts of model farmers to secure the trust and the loyalty of member farmers by providing support during social issues.

##### 4.3.2.1 Technical service

Technical service was found to have a low-moderate impact on the final contractual performance of model farmers. This is given by the fact that the main limitation for model farmers is to not dispose of enough manpower to carefully follow up their members during the production process. Unlike cooperatives, who have the option to deploy different committees to take care of different stages of production. This has a major impact on the quality model farmers deliver, as it often does not reach the same level of cooperatives. However, also model farmers do provide some technical support to smallholder farmers. First of all, like cooperatives, they take advantage from the trainings and support NGOs like EUCORD and the government provide. Then, they include their member farmers in such pieces of training so to enhance their awareness towards the practices used for production. Furthermore, meetings are often organized at a different stage of production as well as counseling is provided to discuss and solve potential issues that could compromise the final result of the produce.

The biggest service that model farmers provide to member farmers, however, is transportation. Model farmers, regardless of owning a truck, organize crop collection directly at the smallholder farmers' gate. Member farmers usually live in remote rural areas, which makes it hard for them to deliver the produce to model farmers' warehouse on time. Furthermore, member farmers are often poor farmers and do not dispose of enough cash to rent costly trucks. Model farmers then, schedule transportation with outgrowers during collection time, so to both quicken the collection process and show support.

##### 4.3.2.2 Financial service

Shortage of finance has been mentioned by all the outgrowers interviewed as one of the major problems for production. Nowadays, farmers do acknowledge the importance of using crop protection products and fertilizers in order to ensure a clean and abundant yield. However, it can happen that member farmers do not dispose of enough finance to buy such inputs, creating a major obstacle for production. This issue is further amplified from the fact that in Ethiopia it is not possible to obtain a loan from a bank if the borrower does not dispose of any collateral such as cars, houses, or warehouses. Due to the low financial status of many member farmers, the same is then constrained by their limited resources.

In this regard, model farmers provide financial support to farmers, allowing them to access inputs that they would not otherwise be able to access. The financial support is delivered in two ways: (1) in kind, by delivering CPPs 50% on credit, or (2) by lending money that is then added to the final price of the produce member farmers deliver. The role of model farmers to this regard becomes crucial, not only for smallholder farmers but for the whole value chain. By giving access to finance they promote inclusiveness within their community, which stimulates production and generates more income for both model farmers and smallholder farmers

##### 4.3.2.3 Social service

Every model farmer interviewed, at the question "how do you compete against other entities in the malt barley supply chain" responded in the following way: "I take care of my social relationship with my member farmers. If you are not involved in social issues to support your farmers than it is impossible to be successful, it is a primary requirement" According to Hofstede (1994), Ethiopia is a collectivist country, where loyalty is paramount and over-rides most other societal rules and regulations (Hofstede, 1994). Therefore, according to model farmers, the key advantage to win the competition and ensure loyalty from member farmers is to provide ongoing support during their social issues. Examples of social issues range from cultural events to weddings. Model farmers do not only take care of providing the funds for this type of occasions but also participate in such events, which show their interest in taking an active role in farmers' social life. Differently, from the cooperatives, model farmers are perceived to be an integrated part of the community. As such, they also take care of enhancing the community they serve, not only by providing reliable services to farmers but also by promoting the development and facilitating infrastructure building. Many are the examples of successful model farmers that financed projects to build entirely new buildings in the community they live in.

A powerful deposition to explain the level of social boundness between model farmers and members has come from an interview conducted with one model farmer in the Digelu, in the Arsi zone. Digelu is a remote kebele in the Arsi zone, and many individuals that belong to this kebele are Protestant. However, no church was available for them to pray and celebrate feast days. One model farmer then, commissioned more than 20,000ETB to contribute to the construction of the church and also allotted a portion of his land for its construction. The same model farmer also commissioned a larger amount of money to open a

cooperative in his kebele, to serve the aim of empowering people affected by HIV, poverty, and disability.

#### 4.4 Key challenges of model farmers and cooperatives

In this section, the main challenges as regards to aggregators' performance within the malt value chain in Ethiopia will be identified and discussed, answering the second research question:

*“What are the key challenges of model farmers and multipurpose primary cooperatives within the malt barley supply chain in Ethiopia?”*

According to the analysis of the interviews, model farmers do not seem to face significant challenges within the malt barley supply chain, except for some hurdles in the technical service they deliver to outgrowers. Model farmers, in fact, often run their business alone, and when they collaborate with other aggregators, is usually to improve the inputs distribution process or to improve information exchange among farmers. Therefore, model farmers do not dispose of enough manpower to carefully follow up their members during the malt barley production process. This has a major impact on the quality of the crop model farmers deliver, as it often does not reach the same level delivered by cooperatives.

When cooperatives' performance outcomes are analyzed, the scenario changes considerably. As such, various challenges can be identified.

First of all, according to the data gathered, five out of the seven cooperatives interviewed admitted struggling to supply the quantity required by the contracting factory, or even that they could never meet such obligation. For example, one of the major causes that forced cooperatives to give up their activities with Heineken is that in 2016, Heineken stopped giving credit to the various aggregators due to the serious risks this implied. Cooperatives then were left without enough finances to successfully satisfy their contractual obligations and found a better deal with other malt factories. Assela Malt factory, for instance, started to provide up to 400,000 ETB credit regularly, which was the ultimate opportunity for cooperatives to ensure continuity in their operations and temporarily tackle their shortage of finance. Therefore, financial capacity was found to be a major challenge for cooperatives' development. In more details, the share and dividend distribution policy and the lack of investment from cooperatives' members place a significant constraint over cooperatives' financial capacity as it translates in the main limitation for cooperative's capital creation.

The different level of social recognition that model farmers and cooperatives assume within the farmer community further defines the strength and the weaknesses of the two aggregators. While on the one hand, model farmers are seen as an integrated part of the local community, cooperatives still face many challenges as regards to the perception farmers and other institutions have of their contribution to agricultural development. As mentioned before, cooperative's committee members are elected by the farmer community. However, participation is voluntary and not retributed, which strongly hinder the members' commitment to do well in their tasks. Furthermore, the early turnover of the committee has a

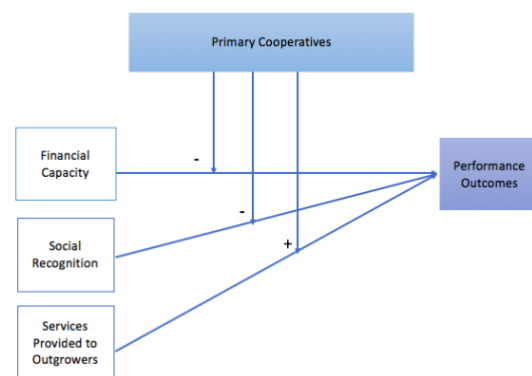
significant repercussion on the long-term vision of cooperatives' operations and impact. Committee members may often engage in long term planning. However, due to the short time they serve in the cooperatives, they might not be able to achieve their objectives, which are often replaced by short-term plans.

The findings provided in this study suggest that the complex governmental structure to which cooperatives are bounded, is not working the way it should, that is by creating opportunities for cooperatives to develop. For example, all the major decisions as regard to the buying price of the produce and the input distribution are taken at federations' level. This automatically excludes primary cooperatives from critical issues such as price setting and input allocation. Therefore, cooperatives have to wait a long time until the information is fully delivered from higher levels, which hinder their responsiveness to act and may also result in distorted information.

## 5. DISCUSSION AND IMPLICATIONS

### 5.1 Discussion

Prior research on model farmers and cooperatives has focused on identifying the functions they assume in agricultural extension networks (Taylor, 2018; Wanyama et al., 2009), exploring their characteristics (Ayele, 2016; Develtere et al., 2009) and discussing the potential they assume against agricultural development (Francesconi & Wouterse, 2019; Tesfamariam, 2015; Develtere et al., 2009). In this study, I explore the differences between model farmers and cooperatives and their performance outcomes by applying a newly elaborated conceptual model to study the aggregators by their level of financial capacity, social recognition, and the services they provide to outgrowers. This approach allowed us to complement previous studies on agricultural extension projects, by demonstrating that there is a substantial difference between model farmers' and cooperatives' performance outcomes which can be attributed, among others, to their level of financial capacity and social recognition.



**Figure 2: Effects of moderators on cooperatives' performance outcomes.**

In figure 2, the findings of the interviews have been integrated into the conceptual model to visualize the relationships between the independent variables and the dependent variable.

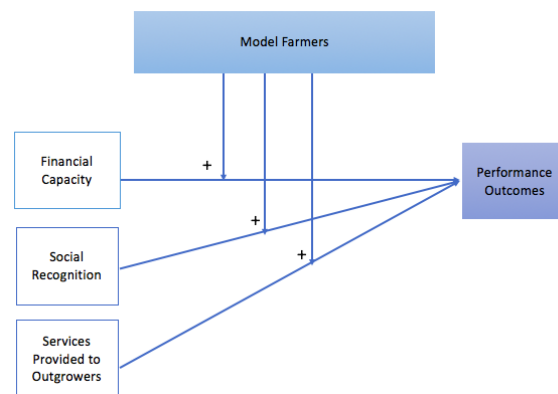
Financial capacity was found to have a negative impact on cooperatives' performance outcomes, adding to Emanu (2009), who identifies capital shortages as the main obstacle in attaining cooperatives' objectives. Due to the composition of cooperatives' committee, which does not comprehend individuals other than farmers, cooperatives face challenges as to new capital creation (Develtere, P., & Pollet, I., 2007). To support this, this study found that inefficiencies within the share and dividend distribution system hamper capitalization. Furthermore, lack of investment hinders cooperatives development, limiting all their finances to their own members' contribution.

Second, this study confirmed that social recognition has a substantial impact on aggregators' success within the value chain. In more details, the findings suggest that perceived corruption, mismanagement, and lack of commitment negatively affect the way farmer community perceive cooperatives.

As it was analyzed, cooperatives lack transparent internal governance to deliver a quality service to outgrowers. In most cases, cooperatives are unable to employ high caliber management staff, and because of weak governance, the burden of due diligence is left to members who may have limited education on financial management (Tesfamariam, K., 2015). Further, the individuals that take part in cooperatives organizations are elected from the farmer community and are often not well educated. Therefore, people might decide to join these cooperative groups only to gain high training and access to inputs (Narayan & Pritchett, 1999; Maluccio, Haddad & May 2000). This has a severe repercussion on cooperatives performance as most of the committee members lack the appropriate skills and commitment to do well within their tasks. Furthermore, cooperatives hierarchical structure was also identified to negatively impact cooperatives' social recognition. However, the same structure contains both challenges and opportunities for cooperatives' development. On the one hand, through their structure, cooperatives receive technical support and strategic services such as credit, fast input distribution, and purchase of agricultural produce (Emanu, 2009). On the other hand, the long and complicated hierarchy to which cooperatives belong, often implies that information is not timely delivered, the payment system is slowed down, and that cooperatives are excluded from the decision-making process.

Third, the services cooperatives provide to outgrowers were found to have a positive impact on performance outcomes. Evidence was found in the literature that focused on cooperatives' weak performance within agricultural extension projects (Wanyama et al., 2008; Francesconi and Heerink, 2010; Francesconi and Wouterse, 2019). However, this study found that the dedicated technical service cooperatives provide to outgrowers, allow them to follow up every step in the production process, and ensure a crop quality that exceeds model farmers' standards.

When model farmers are chosen as units of analysis, the results change considerably.



**Figure 3: Effects of moderators on model farmers' performance outcomes.**

Figure 3 shows the relationships between the independent variables and model farmers' performance outcomes. In this regard, three main contributions are underlined.

Firstly, financial capacity was found to have a positive effect on model farmers' performance outcomes. Thanks to their continuous investment and the adequate diversification of their business, model farmers achieve a significant level of wealth. This allows for an ongoing stream of money that helps them to overcome possible shortages of funds. This finding matches the work of other scholars who attributed a higher level of wealth to model farmers and defined it as the most notable factor that distinguishes model farmers from other entities of the malt barley supply chain (Lefort, R, 2012; Ayele, 2016).

Second, social recognition has also been found to be of significant importance to secure model farmers' success within the supply chain. By acting as nexus points in the flow of information, subsidies, and material inputs between extension agencies and local community, model farmers assume positions as gatekeepers to valued resources (Lefort, 2012). Thanks to this, model farmers are regarded as role models in the community they serve. Indeed, their higher social standing along with the focused service they provide to member farmers, allow them to follow up outgrowers and satisfy their needs. These findings also support suggestions from Taylor (2018), that model farmers are seen as exemplars of agricultural innovation and their community well recognize most of them for their excelling economic activities and social relations.

Finally, the services model farmers provide to smallholder farmers have also been found to have a positive effect on performance outcomes. Model farmers' greater level of wealth (Lefort, R, 2012; Ayele, 2016) makes it possible to give out loans to smallholder farmers who cannot afford to buy inputs. Moreover, the social cohesion model farmers manage to create with smallholder farmers (Lefort, 2012; Stone 2016; Taylor, 2018) secures long-lasting loyalty from the farmer community.

## 5.2 Implications

The implications part includes a more in-depth theoretical and practical contribution to the research.

### 5.2.1 *Theoretical implications*

The scientific relevance of this paper is made apparent by the strong data-deficiency and the lack of scientific research surrounding model farmers and cooperatives. In particular, little interest is paid in analyzing the relationship between the activities and the performance outcomes of different aggregators within the scope of agricultural development project projects like the one implemented by EUCORD in Ethiopia.

Interest is growing in the literature to define the role that model farmers and cooperatives assume against agricultural development, specifically focusing, in the often-weak role that cooperatives fulfill (Wanyama et al., 2008; Francesconi and Heerink, 2010; Francesconi and Wouterse, 2019). It exists quite some research about the impact agricultural extension projects have on the livelihood and food security of smallholder farmers. (Deteres, A., 2011; Ederveen, S., 2016; Debela, S., 2016). Nevertheless, scientific literature that exclusively investigates the channels in which model farmers and cooperatives operate and their interaction within and without extension networks is missing.

Therefore, this study brings an essential contribution to the current literature by serving a three-fold purpose: first of all, it stimulates a more profound understanding of the role of model farmers and cooperatives within extension projects. It does so by providing a detailed context in which model farmers and cooperatives intertwine and interact within and without each other. To this regard, I contribute to the existing literature by providing a clear framework where previous attempts to find a concrete answer to define the role of model farmers and cooperatives are integrated and summarized. The framework elaborated allows for a thorough analysis of the aggregators' activities. Also, it adds to the already available information to deliver a powerful mean of comparison between model farmers' and cooperatives' performance outcomes. To the best of my knowledge, the study presented here is the first to compare simultaneously model farmers and cooperatives, providing a clear structure to outline both their strengths and weaknesses. In more details, empirical evidence from this study suggests that model farmers outperform cooperatives, especially in two dimensions: financial capacity and social recognition.

The controversial role of cooperatives within extension projects was also highlighted in this research. In this context, my findings add to those of scholars who have argued for the important role cooperatives assume for poverty alleviation and agricultural development (Wanyama et al., 2009; Develtere et al., 2009). Yet, this study provides empirical evidence that suggests that cooperatives do not fulfill such a role, which explains why their contribution to poverty alleviation continues to go unrecognized by policymakers (Develtere et al., 2008). Therefore, until cooperatives are not given new ground to develop, model farmers should maintain the central role in extension projects. New and existing partnerships should then focus on enhancing model farmers' activities until new policies will be enacted that will create new promising conditions for cooperatives to prosper and act free from any external intervention.

The second contribution this study brings to the literature is to define, among others, the success of model farmers and the unsuccess of cooperatives partially by their level of social

recognition. A number of scholars have already shown how much success within the value chain depends on the relative prestige of aggregators as a trusted representative of good agricultural practice (Taylor, 2018). I add to those arguments by providing the empirical evidence that smallholder farmers tend not to trust cooperatives as no relationship is built on a social level. Furthermore, due to the difficulties encountered in working down at the farmer level, many smallholders were found to prefer working with people they can identify with, thus choosing model farmers.

The relevance of these findings is made even stronger if we take Ethiopian culture into analysis. According to Hofstede (1994), Ethiopia is defined as a collectivist country, where loyalty is paramount and overrides most other societal rules and regulations. Therefore, it is then safe to assume that culture is found to influence the way smallholder farmers relate to aggregators and should be taken into consideration when analyzing the development of model farmers and cooperatives.

Finally, this study taps into the pressing need for research and extension agencies to produce demonstrated 'success stories' of disseminated innovations (Sumberg et al., 2012a). It does so by providing relevance from the CREATE project, which to date is considered as the most successful project implemented by EUCORD in Africa. In fact, with a life-changing impact on over 30,000 smallholder farmers, the CREATE project is a genuine example to follow for the many extension projects implemented in the global South.

### 5.2.2 *Practical implications*

This research has several practical implications. The most important one is that it shows, on the one hand, the main problems cooperatives face to enhance their business. On the other hand, it clearly defines the ongoing success of model farmers and the reason behind it. This makes it possible for EUCORD and other rural development agencies to have a definite mean of comparison between the two aggregators. Furthermore, it allows for a clearer understanding of the context surrounding both cooperatives and model farmers.

The CREATE project has almost come to an end and has already expanded to different areas of Ethiopia. Therefore, it is functional to study model farmers and cooperatives from a closer scope and provide a clear guideline to assess their full applicability. Most importantly, this research dove into the challenges faced by cooperatives and model farmers such as financial capacity, government interference, mismanagement, and differences in the services offered. The main findings as to the impact of the proposed challenges on performance outcomes could be used or at least taken into consideration during projects' outcomes revision.

Finally, this paper will also serve the project initiated by the University of Twente "Collaborative Business Model Innovation for Inclusive Business." The paper, in fact, will show a different scenario of what doing business in a developing country means. It deals with potential problems that might hinder the whole process of inclusiveness and provide an explanation to solve them.

### 5.3 Limitations and Future Research

This research, though successfully concluded, has three main limitations. The first one concerns the difficulties often encountered to organize interviews with cooperatives. Cooperatives faced various issues in delivering a valuable service to Heineken throughout the life span of the project. Because of this, many of them completely stopped working with Heineken and switched to different malting factories. This created a major limitation in conducting interviews with cooperatives as many of them disposed of outdated information as regards to the price per quintal, transportation costs, and other practices.

The second limitation was the lack of recent literature and data surrounding model farmers and cooperatives. Specifically, model farmers, despite being a common feature of many developing world agricultural extension networks (Taylor, 2018), are found to assume different roles and functions when dealing with different contexts. For instance, in some countries of West-Africa such as Ghana and Sierra Leone, smallholder farmers are organized through the nucleus farmers-outgrowers scheme, which follows a more hierarchical model to integrate smallholders into the value chain (Van Wijk & Kwakkenbos, 2011). This creates an overlap in the literature between the two terms, which hinders the process of finding accurate and extensive information exclusively about model farmers. Furthermore, the fact that the model farmers-outgrowers scheme is not widely implemented in Africa yet decreases the generalizability of this study.

Finally, the specific legal framework in which cooperatives operate should also be analyzed when considering the generalizability of this study. In fact, in most African countries, the legal framework, the promotional scheme, and the funding system related to cooperative development were generated in a colonial environment. Thus, the cooperative sector did not emerge as home-grown or spontaneous movement, but rather as a result of colonial social and economic movement. It should also be noted that in countries that have not known extended periods of colonialism like Ethiopia, modern “co-operativism” has not evolved out of these home-rooted systems. In these countries, such co-operativism is the result of deliberate policy-making by state authorities that tapped into and borrowed from international experiences in cooperative development (Develtere, 2007). For instance, the legal framework of the current Ethiopian Cooperative system was enacted with the Agricultural Cooperative Society Proclamation 85/1994, then amended four years later with a second proclamation (No147/998). However, the same legal structure may not apply to other African countries, which makes the legal framework of the cooperatives system unique and place-specific (Mojo et al., 2017).

Beside the mentioned limitations, this research also provides opportunities for future studies. This paper mainly focused on comparing the differences in performance outcomes between model farmers and cooperatives and identifying their challenges. Future research then, should focus on analyzing the discussed challenges and suggest new smart and practical solutions. For example, cooperatives' shares policy would need additional revision, in order to ensure ongoing access to inputs for the members, without limiting their overall financial capacity. In this

regard, membership diversification should be taken in consideration, to include diverse categories rather than being limited to specific income groups such as the poor. Doing so would allow cooperatives to diversify their products/services and portfolio, thereby improving their capacity to serve the poor and their sustainability (Tesfamariam, 2015).

Lack of commitment, mismanagement, and corruption would require a close follow up from higher institutions. Many NGOs like EUCORD and other government development agencies are working hard to empower cooperatives' members, giving different trainings, and facilitating access to agricultural inputs. However, to find innovative ways to establish and strengthen new and existing partnerships among institutions involved in cooperatives' development and cooperatives should be a primary focus for future research. For example, universities and colleges could also be involved in applied cooperative development research in order to find innovative ways of enhancing cooperative functioning (Emana, B, 2009).

Finally, cooperatives need a well-structured and time-bound advanced certification program to strengthen internal capacity building (AGS, 2016). This would allow finding practical solutions to cooperatives' lack of governance and the subsequent lack of commitment this generates. In this regard, new policies could be explored and proposed that allocate a fixed salary for the members of the cooperatives' committee. Differently, primary cooperatives' composition would need to be redefined, by including better educated and highly skilled people.

### 6. CONCLUSION

As we have highlighted both conceptually and empirically, the use of model farmers and cooperatives remains an essential tool within the diffusion and success of agricultural extension projects in developing contexts. In this regard, it was found that cooperatives have a greater potential to deliver superior technical services to their members. This is reflected by the practicability to deliver thorough supervision during farmers' activities, including planting, production and harvesting.

On the other hand, the implementation of model farmers in agricultural extension projects is also seen of great potential to agricultural development. Model farmers manage to assume a key social role within the local community. This enables them to build considerable prestige and recognition within and outside different value chains. Furthermore, thanks to their higher level of financial capacity and their higher business acumen, model farmers deliver a customer-focused service, which makes them a fundamental benchmark for the entire farmer community.

In this study, we have contributed to the existing literature by analyzing model farmers' and cooperatives' activities, to find a clear answer to why model farmers have more consistent outcomes than cooperatives. Issues such as low financial capacity and low social recognition were found to be among the main reasons for cooperatives' low development, creating a conflict with the idea that cooperatives would be a main contributor to poverty alleviation. On the other hand, however, model farmers' superior wealth and strong social recognition opens a bright opportunity for African agriculture development. The delicate but considerable contribution model farmers and cooperatives can assume for agricultural development should



continue to be addressed in future research. This would allow to find more sophisticated ways to deliver support to model farmers and to create even more excellent opportunities to grow their business. At the same time, the context in which cooperatives operate should be further analyzed. A more realistic study of their challenges with their subsequent limits would then be possible, and a viable solution could be formulated.

Ultimately, the failure to address these issues would mean that the application of model farmers and cooperatives is limited, which would prevent to reveal their true potential for agricultural development, for the African continent, and all the Global South.

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## 9. APPENDICES

### 9.1 Set of answers to question N. 32

**“Do you have any suggestions observations or comments about the CREATE project?”**

#### 9.1.1 Cooperatives

- Credit service and logistics issue. Heineken should continue to provide credit to cooperatives (in kind and in cash) and also should go to cooperatives' warehouse to collect the produce.
- The payment system of Heineken should be improved. The payment system is too bureaucratic, and the payment takes too much time to process. During the first years of the project, this slack in the payment system left cooperatives out of money to continue their operations.
- Heineken grading system. Heineken has very high-quality parameters, which sometimes are hard to meet. Furthermore, the grading system is too strict, as for the same quality they deliver to Heineken, they might get higher prices from other malt factories.
- Heineken should keep the promises made. Heineken promised one cooperative to build a better and bigger warehouse in their woreda, however this did not happen. Also, they promised to link cooperatives with a cooperative bank, but they did not do that.
- Market price set by Heineken is lower compared to other malt factories. This pushed cooperatives and other aggregators to prefer other malt factories that have higher prices.
- Transportation price. Heineken pays 51ETB to cover transportation costs. However, this is not enough to cover all the transportation costs. Furthermore, the price does not adapt to different locations (from Assela Heineken pays 51ETB, however, from Shashamane the price is still the same).
- Cooperatives do not trust Heineken because it did not keep the promises made.
- New improved seed variety should be introduced as Traveler might lose its adaptation with the environment.
- Supply of chemicals should be improved. When Heineken was taking care of supplying chemicals, the chemicals was effective and high quality. However, since Heineken stopped, cooperatives get the chemicals from unions or individual trader which is often expensive and not effective.
- EUCORD did not show interest in cooperatives. In West-Arsi it happened that EUCORD told one cooperative to register the number of outgrowers and record the input demand for the planting season (seeds, fertilizers and chemicals). Then according to the agreement, Heineken would have supplied the inputs 50% credit. However, the mentioned list was never picked up by EUCORD's agronomist.
- Cooperatives felt that Heineken and EUCORD did not pay enough attention to cooperatives' development. Their focused was more on model farmers without actively working to motivate cooperatives. To this regard, cooperatives felt that there was no interest in working with them. Heineken and EUCORD should give cooperatives the same attention they gave to model farmers. Most of the cooperatives interviewed, did show strong interest in working with Heineken. However, Heineken did not show commitment improvements have to be made as to the way Heineken and EUCORD treats cooperatives.

### 9.1.2 Model Farmers

- Payment system of Heineken is too slow and needs some improvements as because of that, model farmers get out of finance. There is one evidence from on model farmers saying that in the contract it is stated the payment is processed within 13 hours. However, it happened that it took up to 10 days.
- Introduce a different variety as Traveler's yield is already decreasing.
- EUCORD provide the linkage between model farmers and chemical distributors (private shops), however the price of the chemicals is often too high, and the quality is not always good.
- Credit system. Sometimes model farmers do not have enough money to sustain their operations, therefore Heineken should reintroduce the credit system, issuing credit only to the most trusted and successful model farmers. (This was the most mentioned issue)
- Heineken should build a collection center in Assela as Adama is far away, especially for the model farmers in West-Arsi
- Heineken and EUCORD should provide a linkage between farmers and suppliers of agriculture machineries, because Ethiopian agriculture is too old. Farmers need machineries to improve production and make agricultural system more efficient.
- The price difference per grade quality is too little. There are 5 or 6 grade of malt barley quality, however, the price difference of this grades is very little, therefore member farmers are not encouraged enough to strive for the best grade.
- Many companies might send the quality expert directly to the model farmer warehouse, there they assign the quality, pay the money and leave. However, Heineken only have checking center in Adama or Assela, so there is the need to transport till there. There is need for improvement, if not Heineken might get in the backline and not be the first choice for the model farmers anymore. Heineken should focus on how to compete with other companies, for instance, establishing facilities down at the community level.
- Model farmers have concerns, because other companies (Assela) are buying with very good prices. They come to the woreda where model farmers live, with their experts and with the truck, they buy, and they pay directly cash on hands. There is no need for transportation, no need of loading and unloading so it is very good for farmers. This sometimes makes the other farmers to shift to these companies. However, as they think they are entered into a commitment with Heineken, they want to work for them, but they should at least make some improvements about price and logistics.
- Transportation costs should be increased to be competitive against other companies. Other companies set give 75ETB for transportation costs, Heineken should increase its offer.
- Supply of chemicals. The previous years Heineken was supplying high quality chemicals but then stopped, they should start again, because farmers now get the chemicals from cooperatives or individual traders, and the quality is bad.
- Farmers should get more free access to fertilizer and seeds because the cooperatives struggle to deliver the right amount of inputs.
- Heineken should update the market price as quick as possible. As other companies offer better and more competitive prices.
- The price of the seeds Heineken supplies to farmers is too high (2,600Br) as the price for one quintile is only 1,600Br. Heineken then should at least increase the market price. Also, now traveler has almost adapted to the local environment and the productivity is getting low. Farmers now need new improved seeds with higher productivity.
- Some chemicals have to be rechecked, because they fail in killing some diseases. Finally, in October there is serious cold which highly affects the malt barley, is there any chemical which can be used to prevent this?
- Chemicals. Axel was substituted with Axel 1. However, Axel 1 is less efficient. Also, the distribution of Rexido is not satisfactory.
- Reintroduce continuous trainings, like pre sawing training, post-harvest training, as well as technical support as they are not properly delivered anymore.

## 9.2 Overview of Interviews

<b>Role in the Malt Barley supply chain</b>	<b>Acronym</b>	<b>Date</b>	<b>Type of Interview</b>	<b>Location/Woreda</b>	<b>Duration</b>
Model Farmer	MF G. T	15-05-2019	Face to Face	Arsi -Tiyo	75 minutes
Model Farmer	MF G. G	15-05-2019	Face to Face	Arsi-Tyio	60 minutes
Model Farmer	MF F. T	15-05-2019	Face to Face	Arsi-Bilbili	48 minutes
Model Farmer	MF D. T	17-05-2019	Face to Face	Arsi-Lemu	57 minutes
Cooperative	COO M. B	17-05-2019	Face to Face	Arsi- Digelu	82 minutes
Model Farmer	-*	22-05-2019	Face to Face	West-Arsi	55 minutes
Model Farmer	MF S. L	15-05-2019	Face to Face	Arsi- Digelu	42 minutes
Model Farmer	-	23-05-2019	Face to Face		54 minutes
Cooperative	COO T	17-05-2019	Face to Face	Arsi-Honkolo Wabe	64 minutes
Smallholder farmer	-	21-05-2019	Face to Face	Arsi	39 minutes
Cooperative	COO S	17-05-2019	Face to Face	Arsi-Honkolo Wabe	43 minutes
Smallholder farmer	-	18-05-2019	Face to Face	Arsi- Tyio	53 minutes
Cooperative	COO Z. S	18-05-2019	Face to Face	Arsi-Honkolo Wabe	76 minutes
Model Farmer	-	24-05-2019	Face to Face	West-Arsi	50 minutes
Model Farmer	MF A. U		Face to Face	West-Arsi	106 minutes
Model Farmer	MF M. S	18-05-2019	Face to Face	Arsi-Honkolo Wabe	41 minutes
Cooperative	-	25-05-2019	Face to Face	West-Arsi	106 minutes
Cooperative	-	25-05-2019	Face to Face	West-Arsi	114 minutes
Model Farmer	MF B. K	20-05-2019	Face to Face	Arsi	47 minutes
Model Farmer	-	25-05-2019	Face to Face	West-Arsi	41 minutes
Cooperative	-	26-05-2019	Face to Face	West-Arsi	63 minutes
Smallholder farmer	-	24-05-2019	Face to Face	West-Arsi	72 minutes
Smallholder farmer	-	25-05-2019	Face to Face	West-Arsi	63 minutes

\*for anonymity reasons, the names of the aggregators are not shown

### **9.3 Key informants' interviews (KIIs) questions for Model Farmers and Cooperatives:**

#### *9.3.1 Service provided to outgrowers*

1. How do you keep track of all the data from production to final sale? I.e. all the member farmers you have, the land allotted, the credit you issue, cost of rent, operational costs.
2. How do you identify the total land for production of malt barley?
3. Do you always inform Heineken of the total amount of grain produced?
4. Do you always follow the improved production method issued by Heineken? As for preparation of farm, seed quantity and fertilizer?
5. How do you verify whether smallholders comply with the production rate and quality level stated by Heineken?
6. Where do you get the fertilizer, chemicals and other inputs for production?
7. How do you make sure that the quality of the malt barley meets the 4 quality parameters requested by Heineken?
8. Do you have problems with mixing the malt barley?
9. How do you prevent member farmers to mix the barley?
10. What are the main challenges as regard to quality inspection?
11. Which type of support do you provide to out-growers, excluding the supply of seeds and chemicals?

#### *9.3.2 Financial Capacity*

12. Do you follow any specific delivery schedule to supply your produce to Heineken?
13. How do you organize your activities in order to deliver the produce to Heineken on time?
14. How much can you supply per quartile?
15. Do you collaborate with other model farmers, or other entities, to make your operations more efficient?
16. For which specific activities do you hire more people?
17. How much would you estimate is the total costs of all transportation from production to sale?
18. Based on what do you make the final decision to sell all your produce to Heineken?
19. What are the advantages that you get by selling to Heineken rather than other breweries?
20. Do you believe that the price set by Heineken per quintile is competitive?
21. Do you have any other sources of income excluding the CREATE project?
22. How much money do you invest to improve the activities you conduct in the CREATE project?
23. How do you finance all your operations?
24. How do you manage to cover all the costs involved in input and output distribution?
25. When you have shortage of money, how easy is for you to get a loan from a bank?

#### *9.3.3 Social Recognition*

26. Do you have any contractual arrangements with smallholders?
27. How much do you pay per quintile to smallholder farmers?
28. After how long do you pay the member farmers after you purchased their produce?
29. Do you compete against other model farmers/cooperatives?
30. What is the main problem regarding cooperatives?
31. What is the difference between the service provided by model farmers and cooperatives?
32. Do you have any suggestions observations or comments about the CREATE project?

## **9.4 Focus Group Discussion questions for Smallholder farmers:**

### *9.4.1 Social Recognition*

33. Why do you prefer to sell your produce to model farmers rather than cooperatives?
34. What is the difference, according to your experience, in the service provided by model farmers and cooperatives?
35. What is the role, according to you, that model farmer should cover in the community?
36. What is the role, according to you, that cooperatives should cover in the community?
37. What type of support do model farmers and cooperatives provide to enhance your business?
38. Do you have problem with mixing the malt barley?
39. Do you always follow the improved production method issued by Heineken? As for preparation of farm, seed quantity and fertilizer?
40. How easy is for you to get the fertilizer?
41. What do you think is the strongest reason for you to not work with cooperatives?
42. What would you like to be improved from the service offered from cooperatives in order to work with them?
43. How would you define your relationship with model farmers and cooperatives?
44. Are you satisfied with your relationship with model farmers/cooperatives?
45. What would you like to be improved in the CREATE project to create better opportunity for your business



## **9.5 Informant consent speech**

My name is Pascal Benincasa and I am an Italian student from the Netherlands. I am now writing my bachelor thesis, and I decided to focus on the role of model farmers in the CREATE project and overall, in the African agriculture. To serve this purpose, I am volunteering with EUCORD to help them learn more about your activities, so that they can provide you with more support, when needed, to enhance your business. You do not need to participate in this interview if you do not want to, and you can leave or not answer at any time. Your decision to participate (or to not participate) will not affect the services you receive from EUCORD or the agronomists. You also will not receive any extra benefits for participating. You will not be affected in any way based on the information you give me. If at any time you do not understand some of the words or concepts, I will take time to explain them and of course, feel free to ask questions at any time. The information you give me will be very helpful to me and to EUCORD to make this project and projects in the future better. You do not have to share any knowledge that you are not comfortable sharing. I expect this to take about an hour.

I hereby would like to ask for your permission to record the interview. This is exclusively to remember what was said when I will write my report, and no one will listen to it but me. When I share what I have learned with EUCORD and the specialists, I will not include which model farmer said each thing, however, I would like to include your names in my report to make it more trustworthy. However, if you do not give permission, your name will not appear in any way in my paper.

My research will take place over the next 3 weeks. During that time, I will be meeting with about 10 model farmers, 6 cooperatives and 4 smallholder farmers to run interviews like this. If you have any questions about my research, findings, or what I will be doing with the information, you can ask them now or later. If you wish to ask questions later, you can get my contact information from any of the specialists and contact me privately. Thanks for your time and attention.

## 9.5 Facts and Figures

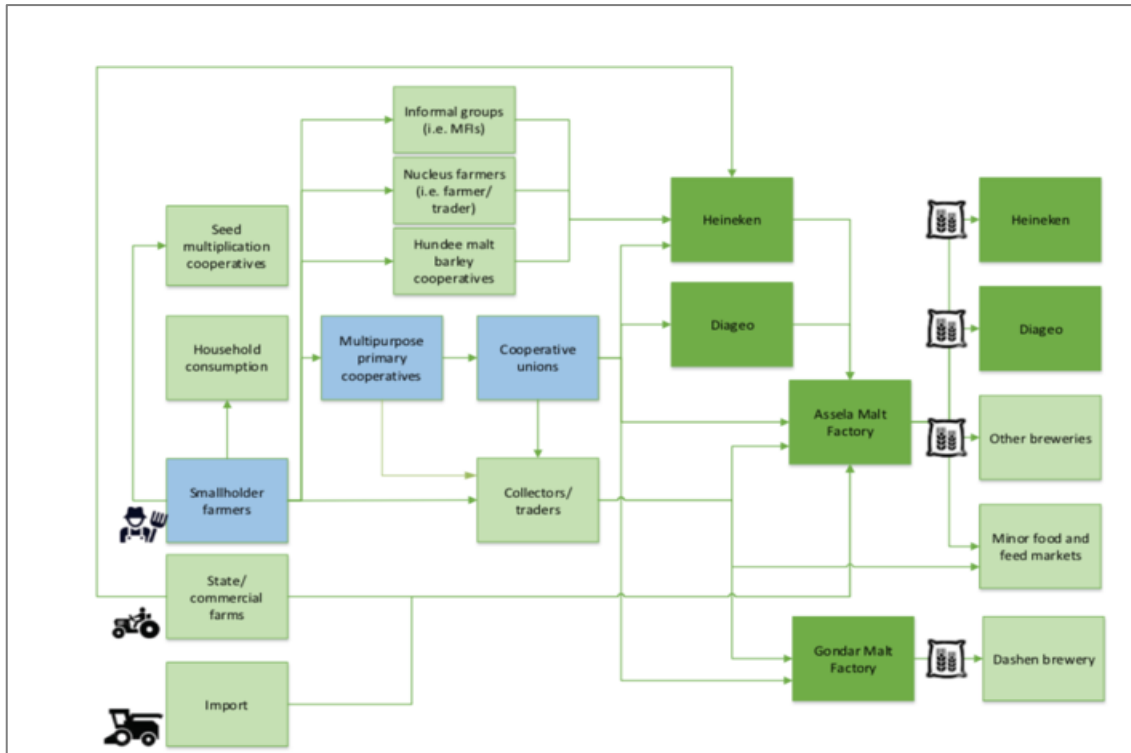


Figure 4: Malt Barley value chain in Ethiopia

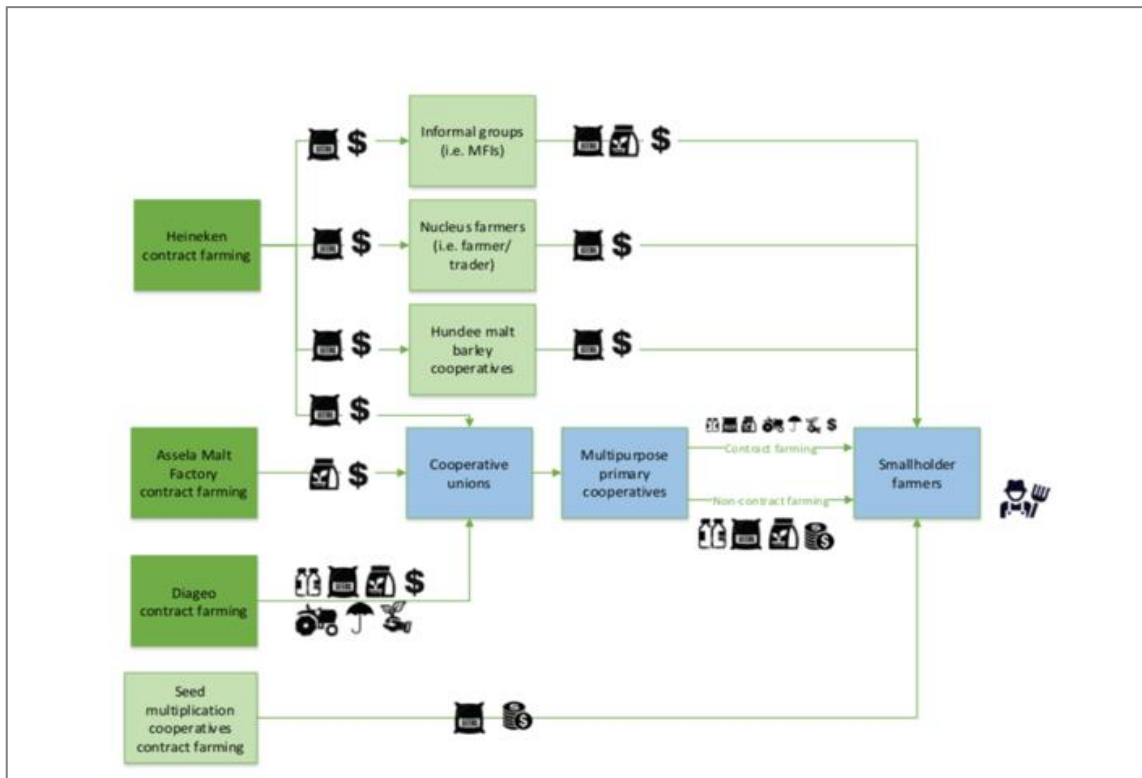


Figure 5: Inputs distribution in Ethiopia

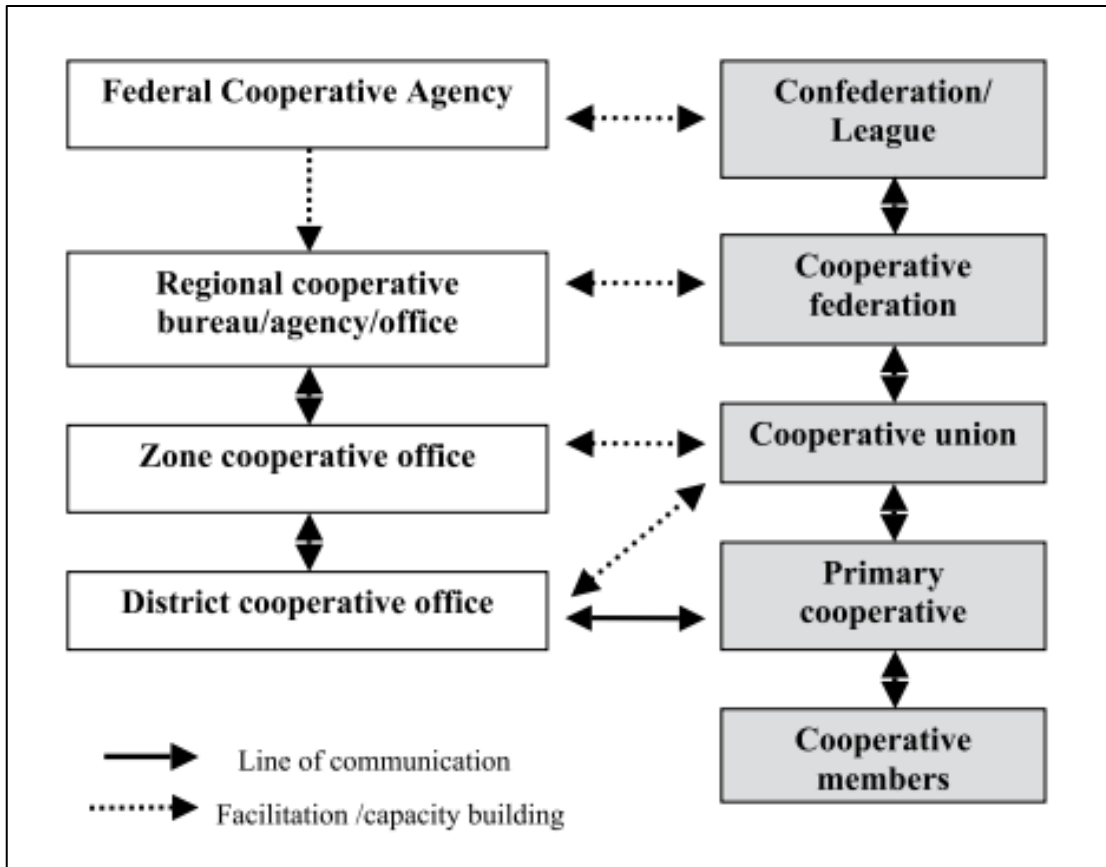


Figure 6: Cooperatives hierarchical structure