Research project

"Increasing the Income of Malt Barley Farmers in Ethiopia through More Effective Cooperative Management"

[Revised report]

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List of Abbreviations

AMF	Assela Malt Factory
ATA	Ethiopian Agricultural Transformation Agency
ESE	Ethiopian Seed Enterprise
FCU	Farmers' Cooperative Union
FGD	Focused Group Discussions
FTC	Famers' Training Center
GTP II	Growth and Transformation Plan from 2015 to 2020
KII	Key Informants Interviews
N	Total number of observations
NGOs	Non-Governmental Organizations
OSE	Oromia Seed Enterprise
PRA	Participatory Rural Appraisal
RMA	Rapid Market Appraisal
SHA	Self Help Africa
Std	Standard Deviation
TLU	Tropical Livestock Unit

1 Introduction/Background

It is well recognised that group action mainly through the cooperative approach helps smallholder farmers to safeguard their interests. In this regard, the promotion of farmers' cooperatives and their unions has been one of the core agricultural public interventions in Ethiopia (Dawit Alemu et al., 2011). Though the number of established farmers' cooperatives is increasing from year to year, their performance especially in terms of ensuring timely aggregation of members' produce, value addition, and ensuring access better markets still remains weak. Those cooperatives engaged in high value agricultural commodities like coffee, sesame, fruits and vegetables, honey and dairy are reported to be among the better performing cooperative types especially in ensuring better access to markets (Dawit Alemu et al., 2011). The main mechanism of cooperatives' access to these better markets is through contract farming arrangements and the key guiding principles for making contract farming a sustainable business are related to (i) trust among contracting parties, (ii) equal status in negotiations especially in the design process and in cases of dispute, (iii) existence of felt incentive/benefits for both parties, and (iv) sharing of potential risks (Da Silva, 2005).

In general, the success or failure of contract farming arrangements lay on two major issues. The first is related to how cooperatives are managed, which is highly related to cooperative governance issues like (i) members' participation and independence of board members in decision making, (ii) managers' competencies and expertise, and (iii) the board and director's relationship to wider stakeholders as well as cooperative members. The second is how contract arrangements are established and enforced, which is specifically related to (i) the prevailing regulatory framework for contract farming[1], (ii) the details of contract specifications that governs the contract farming agreement and whether they are governed by law or not, (iii) dispute resolution mechanisms, and (iv) the capacity of both parties in managing the contract (Dawit Alemu et al., 2011 and Prowse, 2007).

Self Help Africa (SHA) has been implementing a project targeted at increasing the income of malt barley farmers in Ethiopia through more effective cooperative management in Digelu Tijo, Limu Bilbilo and Kofele Districts of Arsi and West Arsi Zones of Oromia region implemented since 2012 targeting Galema and Raya Kejewa cooperative unions.

The project has been supporting these cooperative unions to ensure efficient aggregation of products, better access to markets for purchase of inputs and sale of product, and better prices. Through the project it has been noted that member farmers of Galema and Raya Kejewa cooperative unions, with a total of 66 primary co-ops, are selling about 90% of their malt barley to traders rather than to and through co-ops. In addition, approximately 90% of their sales are immediately after harvest rather than at a later time when prices are higher.

[1] This is related with the contact content along with engagement of specific public regulatory organizations. The contracts between unions and breweries indicate how quality and price will be assessed, how emerging disputes will be settled, which public organizations will be involved, and which public law will be considered.

The side-marketing of malt barley seems to be exacerbated due to the unions' and coops governance related challenges[2] and due to the inefficient contract arrangements. Given the huge potential of group action in the form of cooperative in safeguarding the interests of small scale member farmers, clear understanding of the key challenges facing the coops and designing intervention options is a timely endeavour and it is very much in line with the new agricultural sector growth and transformation plan (GTP II: 2015 - 2020), which gives due emphasis in smallholder agricultural commercialization to promote domestic agro-industries. This research will cover accordingly, the stated two dimensions for poor performance of malt barley marketing through coops and will identify interventions options that will improve the income and benefits of smallholder malt barley producers in the target areas.

2 Objectives

The main objectives of this research project are (i) to assess challenges and opportunities of marketing of malt barley by member farmers of Galema and Raya Kejewa cooperative unions and their respective primary cooperatives with due emphasis on extent and determinants of side selling; (ii) to identify investment options that can be made in building the capacity of the co-operatives to best serve members; and (iii) identify possible mechanisms to build trust at all levels that can be employed to encourage member farmers' loyal to primary cooperatives and their unions and to the linked contract providers (AMF and breweries).

3 Approach and Methodology

The study was conducted in Digelu Tijo, Limu Bilbilo and Kofele Districts of Arsi and West Arsi Zones of Oromia region within the context of national malt barley value chains focusing on Galema and Raya Kejewa cooperative unions and their respective member primary cooperatives.

3.1 Approach of the Study

The study used both primary and secondary data. Emphasis was given to participatory approaches in generating the required primary information along with identification of (i) existing constraints and opportunities, (ii) investment options that can be made in building the capacity of the co-operatives to best serve members, and (iii) mechanisms to build trust at all levels that can be employed to encourage member farmers' loyalty to primary cooperatives and their union. Participatory Rural Appraisal (PRA) along with Rapid Market

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[2] This context governance is related to its definition: "Establishment of policies, and continuous monitoring of their proper implementation, by the members of the governing body of a cooperative/union, which includes the mechanisms put in place to balance the powers of the members (with the associated accountability), and their primary duty of enhancing the prosperity and viability of the cooperative/union.

Appraisal (RMA) techniques through use of tools such as focused group discussions (FGD), key informants interviews (KII), document review, etc. were employed to generate information from major sources needed for the analysis. Secondary data that were needed for characterization of the farmers' marketing behaviour were collected from relevant market actors.

The primary data from farmers was generated using a semi-structured questionnaire. Enumerators with good background knowledge of malt barley production, knowledge of local language, and experience in data collection were recruited to administer the questionnaire. The other primary data generated from Union and Coops management staff, traders, Assela Malt Factory, Dashen Malt factory, Breweries (Heineken and Diageo), Woreda offices of agriculture, and Kebele offices of Agriculture were through FGD and KII using a checklists prepared for each stakeholder.

To make sure all the required information is collected semi-structured questionnaire and checklists were prepared for the different sources of data (farmers, cooperatives leaders, Asela malt factory, Program staff, extensionists, experts, and Development Agents (DAs) of BoA at regional, zonal, woreda, and Kebele level, experts from development partners and projects in the target area).

In addition, observational market intelligence was made to get unexpressed but important facts mainly in relation of marketing behaviours of all involved actors. In addition, the market intelligence assessment was augmented with experiences from other similar initiatives like Italian supported project on "Durum Wheat Value Chain Development in the Bale Zone, Oromia Region", which has ensured the engagement of cooperatives in linking farmers with food processing companies and considerable impact of import substitution (ABFI, 2015). This has helped in sensing the hidden market incentives for misconduct and/or conduct.

3.2 Sample size by type of respondent

The selection of primary cooperatives was made purposively to ensure the consideration of diverse situation, which are related to (i) level of malt barley marketing performance, (ii) proximity to the buyer of malt barley i.e. Assela Malt Factory, and (iii) the involvement in malt barley seed production. Accordingly, three primary cooperatives from Hayato Raya Kajewa FCU were selected, namely Garmama Primary cooperative as better performer, Abdi Boru Primary cooperative as medium performer, and Burka Abosa Primary cooperative as poor performer. From Galema FCU, Mede Bora primary cooperative , which is located closer to potential market center, Koma Kara primary cooperative, which is located a bit far from the potential market, and Limu Dima primary cooperative, which is involved malt barley market in in addition to malt seed production. The geographic location of the actors is presented in Figure 1. Total sample size was 120 respondents, which is about 20 farmers from each cooperative (Table 1). For the FGD, the number of participants ranged from two to five depending on the availability of relevant individuals in respective category of respondents.

Table 1 Data sources, tools used and sample sizes

Primary data sources	Tool	Sample size	
		Indicator	Number
Cooperative member farmers	Semi-structured questionnaire	No of farmers	120
Union and Coops management staff	FGD at Coops	No of FGD	6
	FGD at Unions	No of FGD	2
Traders	KII at Assela town	No of KII	4
	KII at Bekoji town	No of KII	4
	KII at Kofele town	No of KII	4
Assela Malt Factory	FGD	No of FGD	2
Other Malt factories	FGD/KII	No of FGD/KII	2
Breweries	FGD at BGI Ethiopia	No of FGD	1
	FGD at Heineken Brewery	No of FGD	1
	FGD at Diageo plc	No of FGD	1
Woreda office of agriculture	FGD	No of FGD	1
Kebele office of Agriculture	FGD	No of FGD	1

Note: number of participants in each FGD ranged from 3 to 6 individuals

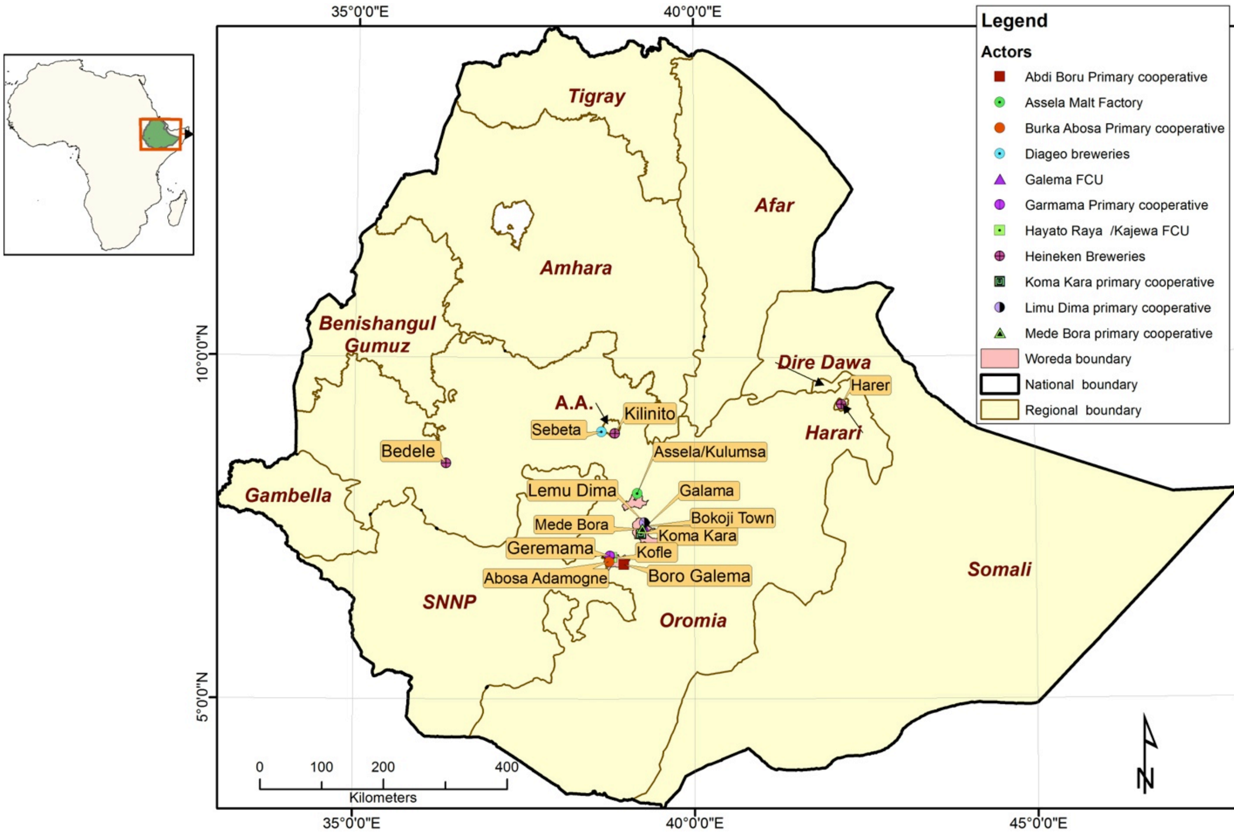

Figure 1 Geographic location of actors engaged in the malt barley marketing

3.3 Method of data analysis

Market intelligence related data analysis often requires triangulation given the obvious conflicts of interest among the diverse market actors that serves as sources of data. Accordingly, diverse market actors were considered as respondents as indicated above and the generated data were analysed using both qualitative and quantitative methods. To ensure the validity of the raw and synthesized data, triangulation approach and expert opinion consideration were employed.

The factors that affect side selling were identified using probit model[3]. In this study a side selling is defined as 'a household that sold malt barley fully or partly in 2014 to buyers other than primary cooperatives and/or cooperative unions'. Given the binary nature of the dependent variable represented by a dummy variable 1 if a household sold to other buyers (farmers, assemblers, and traders) and zero otherwise, a probit model would appropriately capture the marketing decision behaviour of farm households. Following Green (2008), the probit model could be specified as follows:

[3] Probit and logit are appropriate to identify the factors affecting and we found that probit model was more fit in overall significance level than logit and opted to use it. However, the estimated results were more or less similar

$$Y_i^* = \beta X + \mu_i \quad (1)$$

Where,

Y^*= an underlying latent variable that indexes farmers decision of malt barley side selling

i = 1, 2, 3… n (observations)

β_i =regression coefficients to be estimated

u_i = a disturbance term, and

X = covariates.

The marginal effects of the coefficients generated from the model through maximum likelihood estimates presents the effect of a small change in the explanatory variables on the probability of being a side seller. Marginal effects are used to interpret the magnitude by which a one unit change in an independent variable will change the probability of the outcomes.

It is hypothesized that socio-demographic characteristics of the farm households, resource ownership, the malt barley production characteristics, household's product marketing behaviour, perceptions about advantages, service and relationships with market actors, and access to services influence the side selling decision of malt barley producers. The detail description of the hypothesized variables is presented in Table 2.

Table 2 Description of hypothesized variables of household's malt barley side selling decision

Category of variables	Variable	Description (values)	Mean	Std.	Min	Max
Socio-demographics	Edu_HHD	Years of formal education of the household head	2.13	0.96	0	4
	Age_HHD	Age of the head of the household	42.61	11.46	18	77
	Family_size	Family size of the household	10.31	5.20	3	31
Resource ownership	Land_operated	Total size of the farm operated in ha	2.71	1.72	0.5	11
	TLU	Total number of livestock owned in TLU	16.04	8.16	3.97	48.44
	Oxen	Total Number of oxen owned	2.30	1.27	0	6
Malt barley production characteristics	Area_maltbarley	Size of land allocated to malt barley in ha	0.88	1.25	0.1	10
	Yield_maltbarley	Malt barley yield in qt/ha	23.36	12.76	0	52
Market behavior	Coop_buy_seed_maltbarley	Purchase of seed of malt barley from cooperatives (1=Yes, 0=No)	0.82	0.39	0	1
	Coop_years_member	Period of cooperative membership in years	8.16	6.60	1	36
	Malt_consumed_2013/14	Volume of malt barley consumed in qts	2.40	3.14	0	15
	Malt_sold_2013/14	Volume of malt barley sold in 2014 in qts	7.50	8.66	0	44
	Sold_afterharvest	Sale of malt barley immediately after harvest (1=yes, 0=No)	0.32	0.47	0	1
	Sold_after_storing	Sale of malt barley after storing for some months (1=yes, 0=No)	0.81	0.39	0	1
	Sold_before_nxtseason	Sale of malt barley late before next production season(1=yes, 0=No)	0.33	0.47	0	1
Perceptions	Price_Primarycooperative	Perceived unit price advantage provided by cooperatives (1=better than others, 0=otherwise)	0.51	0.50	0	1
	Negotiation_Primarycooper	Perceived price negotiation advantage provided by cooperatives (1=better than others, 0=otherwise)	0.49	0.50	0	1
	Immediate_payement_primar	Perceived time of payment by cooperatives (1=better than others, 0=otherwise)	0.35	0.48	0	1

Category of variables	Variable	Description (values)	Mean	Std.	Min	Max
	Trust_quality_primarycoop	Perceived trust in quality determination with cooperatives (1=better than others, 0=otherwise)	0.60	0.49	0	1
	Relationship_marketing_pr	Perceived long term marketing partnership with cooperatives (1=better than others, 0=otherwise)	0.33	0.47	0	1
	Relationship_marketing_un	Perceived long term marketing partnership with union (1=better than others, 0=otherwise)	0.07	0.25	0	1
	Relationship_information_	Perceived exchange of information with cooperative (1=better than others, 0=otherwise)	0.53	0.50	0	1
	Relationship_information0	Perceived exchange of information with union (1=better than others, 0=otherwise)	0.08	0.28	0	1
	Accessibility_location_pr	Perceived market proximity of cooperative (1=Better than others, 0=otherwise)	0.59	0.49	0	1
	Accessibility_time_primar	Perceived timing of purchase by cooperatives (1=Better than others, 0=otherwise)	0.31	0.46	0	1
	Service_credit_primarycoo	Perceived credit service provided by cooperatives (1=Better than others, 0=otherwise)	0.54	0.50	0	1
	Service_credit_union	Perceived credit service provided by union (1=Better than others, 0=otherwise)	0.07	0.26	0	1
	Service_advice_primarycoo	Perceived advice service provided by cooperative (1=Better than others, 0=otherwise)	0.61	0.49	0	1
	Service_advice_union	Perceived advice service provided by union (1=Better than others, 0=otherwise)	0.10	0.30	0	1
Access to services	FTC_distance	Distance to FTC in Km	3.24	2.38	0	10
	Market_sell_produce	Distance to product sale market in Km	6.11	6.63	0	45
	Market_buy_seed	Distance to seed purchase market in Km	3.89	4.46	0	40

4 Results and discussions

4.1 Overview of brewery industry linked malt barley value chain

Under the current market situation, smaller proportion of the malt barley produced enter the formal malt and brewery industry. The operation of formal malt barley market that is linked with the brewery industry involves smallholder farmers, farmer traders, primary cooperatives, unions, traders, Assela malt factory (AMF), and in recent years breweries directly specifically Heineken and Diageo. In general, AMF and breweries engage with unions and primary cooperatives through contract arrangement to ensure the production of quality malt barley. On the other hand, breweries engage with AMF in two ways. The first is through sale of malt (processed) to breweries and the second is through provision of malting service for breweries. Traders are engage in the market through purchase from farmers and selling to AMF. Primary cooperatives are engaged through sale of malt barley to directly or through facilitation of cooperative unions to AMF, and breweries.

The data collected from zone office of Agriculture in Arsi and West Arsi indicate that the amount of malt barley produced in 2014/15 production season from the estimated 66.34 thousand ha of land is 208.05 thousand tonnes with average productivity of 3.10 ton/ha. Whereas, the data collected from AMF and breweries engaged in the malt barley market in the study area indicated the purchase of 28,229 tons of malt barley in the same production season. Thus, this indicated that 13.57% of the total production entered into the formal brewery industry.

Within the stated formal malt barley market, majority of the produce is contributed through traders (51.78%) followed by primary cooperatives (36.24%) and farmer traders (11.98%). Primary cooperative channel about 78.4% of what they have collected to unions, 11.5% to breweries, and the rest 9.7% to AMF. Similarly, the major proportion of malt barley from unions is channelled to breweries (78%) and the rest 22% to AMF. Farmer traders that have a capacity of producing on own farms considerable volume and who can buy from fellow farmers channel to breweries as per their contract arrangement with respective brewery i.e. to Heineken, which has a contract arrangement with selected farmer traders. AMF often buys from traders, who are engaged in malt barley trade (Figure 2).

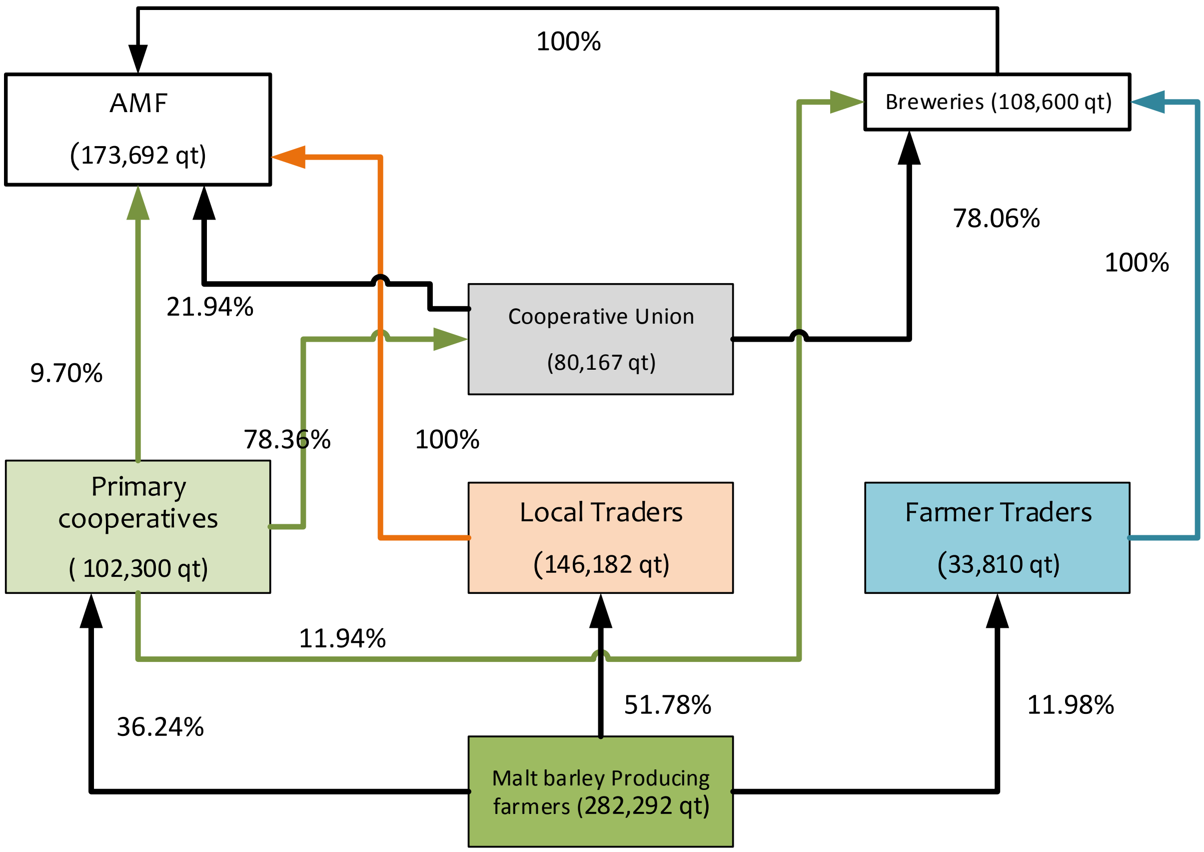

Figure 2 The formal malt and brewery industry marketing channel of malt barley in Arsi and West Arsi zones of Oromia, Ethiopia

4.2 Target farmers and cooperatives and malt barley marketing arrangements: analysis of key project interventions

The major buyers (AMF and breweries) of malt barley grains in the study area use contract arrangements with cooperative unions to ensure the supply of quality malt barley grain. In general, the contents of the contract arrangements made by different buyers is more or less similar, where issues related with unit price, volume, quality, delivery time and place, and dispute settlement mechanisms are clearly stated. The main difference is associated with the contract implementation arrangements.

4.3 Malt barley market behaviours and actors

Following the expansion of the number of breweries from three in early 20s to about 10 breweries, the demand for malt barley is considerably increasing from year to year. Accordingly, the number and type of market actors is also increasing. The market behaviour is also changing from time to time along with emergence of different marketing strategies including direct contract farming with farmers through cooperatives to secure the supply of required quality and quantity of malt for breweries.

The main actors in malt barley grain market are smallholder farmers, farmer traders, primary cooperatives, cooperative unions, private traders, malt factories (Assela Malt Factory and Dashen Malt factory), and breweries (Diageo and Heineken), and public service providers. Except the traders, the main mechanism to ensure planned supply and trade of malt barley among these actors is contract arrangement. The main contracts types prevailing are (i) AMF with unions and primary cooperatives, (ii) breweries with unions and primary cooperatives, (iii) breweries with farmer traders (often co, (iv) unions with primary cooperatives, and (iv) breweries with AMF for malting purpose. Therefore, the market behaviour is basically governed by the provisions in these contracts. As indicated below, the contents of the different contracts are more or less similar. However, the additional interventions deployed by the different actors creates variability in the contract implementation.

The emergence of a number of new contract providers in the malt barley market has created certain level of competition forcing the contract providers to engage with unions and member cooperatives seriously and also provision of additional services like training, packaging, and transport and in some case, closer follow up of production process by assigning experts who work with cooperatives

Asella Malt Factory has expanded its processing capacity from 22,000 tonnes to 36,000 tonnes in 2012 to satisfy the increasing demand for processed malt barley from brewery industries. The factory needs 500,000 quintals (50,000 tonnes) of quality raw malt barley to produce 360,000quintals (36,000 tonnes) of malt per year. Currently, the potential for growth and expansion of the brewery industry is enormous given the emergence of new breweries like Raya and Habesha. As a result the demand for processed malt barely is expected to exceed the available processing capacity of AMF and Dashen Malt Factory. According to the Ethiopian Revenue and Customs Authority (ERCA), the country has imported 59,000 tonnes of malt barley in 2014 with an estimated value of 41 million US dollars.

In the last two years, minimum price of malt barley is determined by a committee composed of farmers' representatives, AMF, breweries and Oromia Market Development, which was established through the Malt Barley Stakeholders' Platform facilitated by the Ethiopian Agricultural Transformation Agency (ATA). The price adjustment on the minimum price then are made based on quality and place of delivery (transport). As per the contract agreements, place of delivery are designated warehouses of buyers (AMF, and Breweries. However, breweries provide as an incentive by collecting the malt barley at primary coops warehouses and paying the set price, which is 1015 birr/qts to primary cooperatives without deducting the cost for transport.

Table 3 Sources of malt barley for AMF (2013/14 – 2014/15)

Source	2014/15		2013/14	
	Amount in quintals	%	Amount in quintals	%
Farmers	4,381.00	2.3%	5,404.98	2
Union	17,586.89	9.4%	1,104.34	-
Cooperatives	9,923.00	5.3%	4,456.38	2
Traders	146,182.17	77.9%	233,452.67	96
Others	9,543.89	5.1%	-	-
Total	187,616.95	100%	244,418.37	100%

Source: AMF (2015)

The amount of malt barley purchased by AMF from different producers in Arsi and West Arsi zones is presented in Table 3. The amount supplied by traders in the year 2014/15 was about 78% and malt barley coming to the factory directly through farmers and cooperatives were about 8%. The channel through cooperatives which is strategic for both producers and the factory is serving below the required due to the cooperatives financial constraints and management skill gaps.

Assela Malt factory: Assela malt factory unlike Diageo and Heineken does not cover transport and loading/unloading expenses and therefore the cost of transport is usually deducted and hence the net price farmers receive is less than that of the price from Heineken and Diageo.

Currently there are 6 breweries with total capacity of about 10. Million hectolitres per annum. This requires well over one hundred thousand tons of malt barley per year. However, AMF's share of malt supply now stands at 30 percent and the rest is met through import (Personal communication, AMF).

a) Diageo brewery: Diageo's purchase strategy follows only through contractual arrangements with Galema unions

b) Heineken Brewery: Heineken in addition to contractual agreements with Galema and Kajewa unions, uses nuclear farmers, traders, primary cooperatives to buy malt from farmers. Nuclear farmers are group of model and rich farmers who have relatively large farms and have capacity to collect malt from other malt producing farmers in and around their respective vicinities to supply to Heineken. Heineken sign contractual agreements with traders, nucleus farmers and primary cooperatives.

Heineken and Diageo cover all transport and loading/unloading expenses and costs of packaging materials (sacks) and the net price farmers received from Heineken and Diageo last production season for first quality standard is birr 1015 and 1020, respectively. However, AMF purchased at the minimum price agreed along with charging for transport to the designated AMF warehouse.

The target cooperative unions that are engaged in contract arrangement with AMF and two breweries (Heineken and Diageo) are Galema and Raya Kejewa unions. Galema union was established in 2000 (1992 E.C). It has currently around 90 primary cooperative union members. Through its member primary cooperatives, it is currently serving around 47,000 individual farm households. Galema union is one of the key actors in malt value chain. It has high level of influence and playing crucial role in maintaining aggregation of malt barley through mobilizing malt produces from its member primary cooperatives.

Raya Kejewa union established in 2010 but its engagement in malt marketing was started since 2013. It has 19 primary member primary cooperatives. The unions act as brokers between primary cooperatives and other buyers such as Diageo, Heineken and AMF. The role of the union is no more than facilitating the purchase process through signing contractual agreements with the buyers and facilitating delivery of inputs and transferring payments to primary cooperatives. The union does not engage in actual purchase process, in the collection or purchase of malt barley, grading, or carry out any quality control. This situation have created resentment among primary cooperatives to see and consider the union as non-value adding actor that is created to snatch benefits that would have gone to the primary cooperatives. There exists no contractual agreements between primary cooperatives and its members. This is also one contributed factors for side selling.

4.4 Contracts, contents, and challenges

4.4.1 Contract contents

In general, the contract agreement documents contain and specify (i) the purpose of the agreement, (ii) detail obligations of agreeing parties, (iii) quantity and quality of supply, examination and sampling procedures, (iv) place and time of delivery, (v) determination of price and mode of payment, (vi) force majeure, (vii) mechanisms of dispute settlement, (viii) modification or termination of the agreement, (ix) duration of the agreement. All the contract agreements are expected to be enforced by the Ethiopian civil and commercial codes.

Purpose of the agreement: in all cases the purposes are clearly stated as ensuring the production of quality malt barley in the agreed quantity and supply at the specified time to the purchasers as per the agreement;

Place, time and number (lots) of deliveries: The place of delivery is at the designated warehouses of the contract providers and cost of transport are covered by the union. The time of delivery is starting from immediately harvest (January) to end of June with possible three time of delivery. The agreements have provision of extension of delivery given prior notification to the contract provider and the Oromia Trade and Market Development Bureau with acceptable reasons.

Price setting: given the quality standard of the produced malt barley and type of variety, the market prices are determined by a committee composed of representatives from breweries, Ethiopian Agricultural Transformation Agency (ATA), Malt Factories, Oromia Trade and Market Development Bureau, and Cooperatives. Once the prices are determined, 7 to 10% premium is provided. For instance, the agreement signed by Galema and Heineken indicates 10% price premium whereas the agreement between Galema cooperative union and Assela Malt Factory indicates 7% premium. In addition, the agreements set the shares from the premium price for farmers, primary coop and union. As per the agreement between Galema and AMF, the share for farmers is 4%, for primary coops 1.5% and for unions 1.5% from the total 7% price premium. Whereas, the agreement between Galema and Heineken grants a 3% share for the union.

In general, the government seems to facilitate the effectiveness of contract malt barley production to mainly reduce the foreign currency burden of malt imports along with ensuring improved income for farmers. Accordingly, the relevant public offices have started to engage in the process.

Technical and other supports provided by contract providers: The agreements indicate provision of technical support in terms of (i) training to farmers in quality malt barley production, (ii) supply of quality seed of selected varieties of malt barley by the contract provider to be purchased by the union. In case of financial shortage, the contract provider delivers seeds through interest free credit, (iii) technical backstopping during production through field visits, (iv) branded packing bags, (v) technical backstopping for post-harvest management and storage.

Product grading and sampling: The agreements indicate the sampling methods to be followed for the supplied malt barley to ensure representativeness. The quality parameters based on the sample analysis are determined by the contract provider and grade for the supplied malt barley is accordingly provided. Some contract providers have agreement with unions where the contract provider has the right to reject based on quality parameters, whereas some contract providers have agreement where the grade provided can be checked once more and if the contract taker is not happy, the quality test can be made by third party with the capacity.

Linkages contract provider, union, member primary cooperatives and member farmers: this is a very crucial area that the contract agreement of Heineken seriously considers, whereas the agreement of AMF does not consider. Basically, the approach and content of the agreement between Heineken and union is specified to be prepared as an agreement so that unions with their respective member primary cooperatives sign an agreement and similarly, primary cooperatives sign an agreement with member farmers.

Dispute settlement and force majeure: the contract agreements recognise force majeure for both parties as per the country's Civil Code and a party affected by force majeure has to notify the other party and the Oromia Trade and Market Development Bureau. Similarly, in cases of dispute the agreements suggest consultation through Oromia Trade and Market Development Bureau as a mediator. If it is not possible to settle through consultation, the matter may be taken court. Dispute settlement becomes complicated given a number of layers of agreements and huge number of actors especially the agreements between primary cooperatives and member farmers.

Duration of agreements: all the agreements indicates that the duration is for one production season until the produced malt barley is supplied to contract provider.

The summary of key contents and provisions of contract agreement for AMF, Heineken and Diageo is presented in Table 4. Though, the contents are more or less similar, there are considerable difference in magnitude and mode of implementation among the three contract providers.

Table 4 Summary of key contents and provisions of contract agreement by contract provider

Contents of the contracts	Contract providers		
	AMF	**Heineken**	**Diageo**
Price	MBGP + 7% premium	MBGP + 10% premium	MBGP + 20% premium
	Every 45 days market price revision	- No revision	No revision
	Price vary by variety and quality	Price vary by grade	Price vary by grade
Place of delivery	AMF designated warehouse	Heineken designated collection points	Diageo designated collection points
Time of delivery	Up to May 8	End of June	End of April
number (lots) of deliveries	Three lots with minimum volume per lot (>50qt)	Three lots with specified volume (20% by end of January, 50% end of March and 30% end of June)	No minimum amount requires Purchase any time of working day throughout the season
Quality assurance	No variety specification	Specific varieties	Specific variety (Holker)
	Facilitation role for access to quality seed	Use of certified seed from OSE	Use of certified seed from OSE and ESE
	Supervision once in a month	Expert assigned at each *kebele* level for continuous supervision	Expert assigned at each *kebele* level for continuous supervision
	Provision of required training on quality malt barley production at the start of the season	All time experts visit and training	All time experts visit and training
Product grading	Quality test at the time of product delivery	Pre-set quality standards (Moisture content, gain size, foreign matter and admixture, and genetic varietal cleanness)	Pre-set quality standards (Moisture content, gain size, foreign matter and admixture, and genetic varietal cleanness)
	Supplier has right for quality re-test	Supplier has right for quality re-test	Supplier has right for quality re-test
	Quality determination made by	Quality determination made by	Quality determination made

Contents of the contracts	Contract providers		
	AMF	Heineken	Diageo
	AMF	Heineken	by Diageo
Commission to unions	No	12 birr/qt	18 br/qt
Technical and other supports	Provision of training to farmers	Provision of training to farmers	Provision of training to farmers
	Provision or facilitation of access to inputs (seed, fertilizer, and chemicals)	Pre-finance purchase of certified seed and credit repayment after product delivery	Pre-finance purchase of certified seed and credit repayment after product delivery
Duration	One production seasons	One production seasons	One production seasons

Source: contract documents, FGDs and KIIs

Note: MBGP – Malt barley grain price, OSE – Oromia Seed Enterprise, ESE – Ethiopian Seed Enterprise

4.4.2 Expressed challenges in the implementation of contracts

In general, there is a positive trend in actors' behaviour to follow their operations as per contract agreement compared to previous years when there was only one buyer, Assela Malt Factory. The main challenges faced by SHA in promoting contractual arrangement between unions and AMF was highly linked with the limited competition in the market and lack of alternative market outlet. Given this positive trend, however, there are serious challenges in the system. These are related to the following key issues:

a) Unclear relation between unions and their respective member cooperatives: primary cooperatives often complain that the benefit sharing among primary cooperatives and unions is not to the extent of the service provided in the process. This demands transparent engagement in contract formulation of primary cooperatives and unions with contract providers (AMF and breweries);
b) Unclear relationship between primary cooperatives and their respective member farmers, which is related to the share of benefits (premium price) that creates disincentive for farmers to engage with primary cooperatives;
c) Systematic engagement of local traders. The sharing of benefits among farmers, primary cooperative and union (premium price) create reduced benefits to farmers compared to benefits that can be offered by traders.
d) Lack of independent quality assessors for price setting. The contracts state that quality determination is made by contract providers (AMF and breweries), which creates biasedness;
e) Need for technical backstopping and its cost implication. Contract providers often engage in provision of training to farmers and coop experts and follow up to ensure quality production, which incurs additional cost. However, traders and/or farmers traders can provide additional incentive in price as they do not incur the costs of technical backstopping (free rider's problem).
f) The need to involve wider stakeholders to implement contract arrangements (seed enterprises, extension offices, Trade and Market Development offices, Seed laboratories, etc)

4.5 Current performance of contract arrangements in malt barley markets

The survey indicates that Assela Malt Factory (AMF) and two breweries namely Heineken and Diageo have been engaged in contract farming to ensure supply of malt barley in the target study areas. The contents and detailed arrangements of these contracts are presented in the previous part. The performance of contracts with primary cooperatives and cooperative unions for the 2014/15 production season for respective contract providers is presented in Table 5. AMF and Heineken had contract arrangements both with unions and also with primary cooperatives, whereas Diageo was engaged only with cooperative unions. The performance of the contracts in terms of the proportion of actual supply from the amount agreed upon indicates Diageo has better performance with unions where it managed to receive about 97% of the quantity stated in the agreement, whereas Heineken received about 52% and AMF received only 38% of the volume under the agreement with the unions. The better performance of Diageo's contract is associated with the better engagement with cooperatives and relatively better price offered (5 birr/qt more premium price). On the other hand, the quantity supplied by the primary cooperatives was about 81% for AMF and about 49% for Heineken of the quantity stated in the agreement. These trends indicate the relatively huge gap between the volumes stated in the agreement and actually supplied, which is a very good indicator of the challenges in contract enforcement linked with side selling activities of member cooperatives for the unions and member farmers for the primary cooperatives.

Table 5 Contract arrangements and their performance in malt barley production and supply (2014/15 production seasons)

Buyers	Amount malt barley bought (qtls)								
	Cooperative Unions			Primary cooperatives			Total contract		
	Agreed quantity	Actual supplied	% of side selling	Agreed quantity	Actual supplied	% of side selling	Agreed quantity	Actual supplied	% of side selling
Assela Malt Factory	39,844	17,587	37.58	12,237	9,923	18.9	52,081	27,510	47.18
Diageo	60,000	58,000	3.33	-	-	-	60,000	58,000	3.33
Heineken	8,740	4,580	47.60	24,790	12,210	50.75	33,530	16,790	49.93
Total buyers	108,584	80,167	26.17	37,027	22,133	40.22	145,611	102,300	29.74

Source: respective organizations

The overall extent of side selling is estimated at 29.74% with considerable variability across buyers. It was the highest for Heineken with about 50%, followed by AMF with about 47%, and Diageo with 3.3% (Table 5).

4.6 Side selling: extent and farmers' characteristics

This part provides the preferences of farmers in the possible decision of buyer selection, the extent of reported side selling. This is followed by characterization of farmers consider their side selling behaviour in terms of the importance of malt barley production, farmers' resource ownership, access to services and farmers' social capital.

4.6.1 Priority reason of farmers' decision to sell to the buyer

In order to elicit the reasons for respective preferences to the different buyers of malt barley, farmers were asked to rank the potential factors covering issues in the areas of price, time of payment, trust, existing relationship, accessibility, and the other services provided. Table 6 presents the proportion of farmers who ranked as first preference for respective buyers. Accordingly, in almost all factors, higher proportion of farmers reported to perceive better services from primary cooperatives compared to other buyers. On the other hand, in two important factors, the highest proportion of farmers report to have better services from local traders. These factors are the existence of long-term relation and the purchase from farmers any time of a day and any day of the week. In general, reasonable proportion of farmers reported that they get better services from local traders, AMF and breweries.

Table 6 Proportion of farmers reporting as the major reason to sell to a buyer (n=121)

Category of reasons	Reasons	Other farmer(s)	Local assemblers	Local traders	Primary cooperatives	Cooperative union	AMF	Breweries
Price related	Unit price advantage	29.00	1.60	11.70	55.40	5.90	2.90	17.90
	Better approach in price negotiation	3.00	1.90	26.50	58.40	7.30	3.70	22.20
Time of payment	Immediate payment	17.20	43.30	42.40	42.40	9.30	1.80	13.60
	Payment as per agreement	4.00	20.00	27.30	58.20	14.00	1.90	9.10
Trust	Trust in weighing	4.30	2.20	9.20	73.00	10.40	30.60	4.30
	Trust in quality determination	8.00	2.10	21.90	67.00	6.00	28.20	17.40
Relationship	Long-term marketing partner	9.10	33.90	48.10	40.00	13.00	1.60	5.00
	Continuous exchange of information	8.70	5.10	19.30	59.80	13.50	31.20	5.30
Accessibility	Located nearby (purchase at farm gate)	16.70	4.10	27.40	65.70	7.90	27.10	5.00
	Purchase any time of a day and any day of the week	8.70	39.70	47.60	40.70	2.10	7.30	-
Provision of other services	Provide credit when needed	26.30	5.00	7.80	66.30	13.60	32.80	3.80
	Provide advice on agricultural activities	12.5	7.4	8.7	68.5	15.6	24.10	19.40
	Provide packaging material	17.6	12.5	12.5	73.9	11.9	32.60	5.60

Source: survey data (Dec, 2015)

Note: local assemblers are those who act on behalf of local traders on commission bases.

4.6.2 Extent of side selling

As indicated above, the malt barley buyers are engaged in the purchase through contract arrangement with unions and primary cooperatives. In turn, unions and primary cooperatives enter into contract farming with cooperative member farmers. In terms of side selling, we identified four categories of farmers who have been engaged in the contracts:

1. Farmers who did not sell any to anybody (either consumed and/or stored it for next season);
2. Farmers who are fully engaged in side selling, which indicates that these farmers have fully failed to honour their contract (sold all to traders and farmer trader);
3. Farmers who are partly engaged in side selling, which means those who partly fulfilled their contract requirement (sold both to the contract providers and also to traders and/or farmer traders); and
4. Farmers who are not engaged in any side selling, which means those farmers who have fully fulfilled their contract requirement.

In this regard, the extent of side selling by cooperative member farmers involved in malt barley contract farming indicates that about 29% of the farmers are fully engaged in side selling, which means they totally farmers fail to honour their contracts, 26% in partly side selling and only 31.4% are selling as per their contract arrangement (Table 7).

Table 7 Market seasons and engagement of cooperative member farmers in side selling (2014/15 Production season)

engagement in side selling	Market seasons			Total
	Not engaged in any market season	Engaged only in one market season	Engage in more than one market season	
No sale in all market seasons	13.2	-	-	13.2
Fully engaged in side selling	-	21.5	7.4	28.9
Partly engaged in side selling	-	5.8	20.7	26.4
Not engaged in side selling	-	25.6	5.8	31.4
Total	13.2	52.9	33.9	100.0

Source: Survey data (Dec, 2015)

Note: market seasons are immediately after harvest, after storing for some months, and before next production seasons

The result indicates that the extent of market season engagement considerably vary by those engaged in side selling and those not engaged in side selling. Majority of farmers who are not engaged in any side selling sold their malt barley in one season, which is after storing for some months. Similarly, the majority of those farmers that are fully involved in side selling also sold in one season, which is after storing for some months. Whereas, farmers who are partly engaged in side selling, the majority sold their malt barley in more than one market seasons (Table 7).

Farmers' malt barley marketing behaviour varies by marketing season. Majority of the respondents (67.8%) reported that they do not sell immediately after harvest, whereas 10.7% of the farmers reported to fully engage in side selling immediately after harvest, 14.7% partially, and the rest 6.6% sell immediately after harvest to the contract provider without side selling. Among farmers who sell after storing for some months, 25.6% reported that they are fully engaged in side selling, 18.2% partially engaged in side selling and 36.4% in selling to contract provider without side selling. Whereas, among farmers who sell late in the season before the next production season, 14% reported full engagement in side selling, 14% in partly engagement in side selling and only 5% in selling to contract provider (Table 8).

Table 8 Extent of side selling engagement of cooperative member farmers (2014/15 Production season)

Market seasons	Market behaviour	Frequency	Percent
Immediately after harvest	No sale immediately after harvest	82	67.8
	Fully engaged in side selling	13	10.7
	Partly engaged in side selling	18	14.9
	Not engaged in side selling	8	6.6
	Total	121	100.0
After storing for some months	No sale after storing	24	19.8
	Fully engaged in side selling	31	25.6
	Partly engaged in side selling	22	18.2
	Not engaged in side selling	44	36.4
	Total	121	100.0
Before next production season	No sale before next season	81	66.9
	Fully engaged in side selling	17	14.0
	Partly engaged in side selling	17	14.0
	Not engaged in side selling	6	5.0

Market seasons	Market behaviour	Frequency	Percent
	Total	121	100.0
All market season	No sale in all market seasons	16	13.2
	Fully engaged in side selling	35	28.9
	Partly engaged in side selling	32	26.4
	Not engaged in side selling	38	31.4
	Total	121	100.0

Source: survey data (Dec, 2015)

4.6.3 Importance of malt barley

The importance of malt barley in terms of the proportion of land allocated for malt barley over the total land operated by each household indicates that on average 40% of the land operated is allocated for malt barley with statistically significant difference among farmers with different marketing behaviour. The highest proportion of land (62%) was allocated by farmers who are partly engaged in side selling followed by farmers who are not engaged in side selling (37%) (Table 9). The total operated is on average 2.7 ha per household with no significant difference across households with different market behaviour.

Table 9 Proportion of land allocated for malt barley (2014/15 production season)

Market behaviour	Indicators	Proportion of land allocate for malt barley	Average total land size operated (ha)
No sale in all market seasons	Mean	0.31	2.125
	Std. Deviation	0.23	0.99
	N	16	16
Fully engaged in side selling	Mean	0.29	2.72
	Std. Deviation	0.19	1.76
	N	35	35
Partly engaged in side selling	Mean	0.62	2.52
	Std. Deviation	0.84	1.31

Market behaviour	Indicators	Proportion of land allocate for malt barley	Average total land size operated (ha)
	N	32	32
Not engaged in side selling	Mean	0.37	3.10
	Std. Deviation	0.63	2.13
	N	38	38
Total	Mean	0.40	2.71
	Std. Deviation	0.58	1.72
	N	121	121
Difference test	F-value	2.14*	1.41

Source: survey data (Dec, 2015), * statistical significance at 10%

4.6.4 Farmers' resource ownership by market behaviour

The main farmers' resources are the farm size and number of livestock owned. In the study area, the average total farm size operated by a household is estimated at 2.71 ha with no statistically significant difference among farmers with different market behaviours. However, the size of rented land was on average, statistically different among farmers with different market behaviours. Farmers who are not engaged in side selling owned and operated bigger rented in land (1.03 ha), followed by those who are fully engaged in side selling (0.63 ha) and those who are partly engaged in side selling (0.55 ha) (Table 10).

Table 10 Farmers' land ownership by marketing behaviour (2014/15 Production season)

Market behaviour		Own land cultivated in ha - Rain-fed	Rented in land in ha -Rain-fed	Total land operated in ha
No sale in all market seasons	Mean	1.90	0.23	2.13
	Std. Deviation	0.92	0.30	1.00
	N	16	16	16
Fully engaged in side selling	Mean	2.09	0.63	2.72
	Std. Deviation	1.52	0.88	1.76
	N	35	35	35
Partly engaged in side selling	Mean	1.97	0.55	2.52
	Std. Deviation	1.04	0.68	1.31
	N	32	32	32

Market behaviour		Own land cultivated in ha -Rain-fed	Rented in land in ha -Rain-fed	Total land operated in ha
Not engaged in side selling	Mean	2.07	1.03	3.10
	Std. Deviation	1.50	1.23	2.13
	N	38	38	38
Total	Mean	2.03	0.68	2.71
	Std. Deviation	1.32	0.94	1.72
	N	121	121	121
Difference test	F-value	0.11	3.36**	1.41

Source: survey data (Dec, 2015), ** significance level at 5%

The average size of livestock in terms of TLU owned by a household is estimated at 16.04 with statistically significant difference among farmers with different market behaviours. Farmers who are not engaged in side selling owned bigger livestock size estimated at 19.11 TLU, followed by those who are fully engaged in side selling estimated at 14.96 TLU and those who are partly engaged in side selling estimated at 14.42 (Table 11Table 10). Similar ownership pattern was estimated for oxen ownership. In the study area, oxen are the major sources of draft power.

Table 11 Livestock ownership by marketing behaviour

Market behaviour		Oxen	TLU
No sale in all market seasons	Mean	1.88	14.40
	Std. Deviation	0.81	4.61
	N	16	14
Fully engaged in side selling	Mean	2.23	14.96
	Std. Deviation	1.14	7.25
	N	35	30
Partly engaged in side selling	Mean	2.09	14.42
	Std. Deviation	1.28	7.30
	N	32	32
Not engaged in side selling	Mean	2.73	19.11
	Std. Deviation	1.45	9.97
	N	37	35
Total	Mean	2.30	16.04

Market behaviour		Oxen	TLU
	Std. Deviation	1.27	8.16
	N	120	111
Difference test	F-Value	2.42*	2.54*

Source: Survey data (Dec, 2015), * significance level at 10%

Note: TLU estimated based on Kossila, V. (1988)

4.6.5 Access to services

The main services are related with agricultural extension, credit and cooperative based input provisions. In terms of access to general extension service, there was no statistically significant difference in terms of access to extension service among farmers with different market behaviour and almost all cooperative member farmers reported that they meet development agents to get any extension advices. Similarly, 96.7% and 91.7% of the respondents had got extension advice on malt barley production and marketing respectively (

Table 12). This is in line with the expectation that the general public agricultural extension service provision has been expanded in all *kebeles* through allocation of development agents in the areas of crops, livestock and natural resource management in each *kebele*. Moreover, SHA has been providing associated services to unions and primary cooperatives in the study area by engaging experts from *woreda* office of agriculture, which obviously has contributed to increased access to services. The SHA assistance in warehouse construction, training for cooperative experts and overall sensitization of different actors about the important role of cooperatives have been instrumental in boosting access to services to member farmers and their cooperatives. The FGDs with experts from coops and offices of agriculture indicates that SHA has played crucial role in facilitating access to service and associated inputs mainly seeds of improved varieties of malt barley. Thus, the higher level of access to services reported by farmers is a cumulative result of SHA, *woreda* and *kebele* offices of agriculture, and contract providers.

Table 12 Access to extension services by marketing behaviour (2014/15 production seasons)

Market behaviour		Access to DAs to get any extension service		Advice about malt barley production		Advice about Malt barley marketing		Total
		Yes	No	Yes	No	Yes	No	
No sale in all	N	16	-	15	1	15	1	16

Market behaviour		Access to DAs to get any extension service		Advice about malt barley production		Advice about Malt barley marketing		Total
		Yes	No	Yes	No	Yes	No	
market seasons	% of Total	13.2	-	12.4	0.8	12.5	0.8	13.3
Fully engaged in side selling	N	34	1	35	-	32	2	34
	% of Total	28.1	0.8	28.9	-	26.7	1.7	28.3
Partly engaged in side selling	N	32	-	31	1	29	3	32
	% of Total	26.4	-	25.6	0.8	24.2	2.5	26.7
Not engaged in side selling	N	36	2	36	2	34	4	38
	% of Total	29.8	1.7	29.8	1.7	28.3	3.3	31.7
Total	N	118	3	117	4	110	10	120
	% of Total	97.5	2.5	96.7	3.3	91.7	8.3	100.0
Difference test	F-Value	2.46		2.09		0.64		

Source: survey data (Dec, 2015)

As in the case of extension, access to credit is also high among respondent farmers with no statistically significant different across farmers with different market behaviour. Of the total farmers 90% reported that they can have access to credit if they wish to have (Table 13).

Table 13 Access to credit by marketing behaviour

Market behaviour		Can you get credit if you wish to get?		Total
		Yes	No	
No sale in all market seasons	N	15	1	16
	% of Total	12.4	0.8	13.2
Fully engaged in side selling	N	31	4	35
	% of Total	25.6	3.3	28.9
Partly engaged in side selling	N	27	5	32
	% of Total	22.3	4.1	26.4
Not engaged in side selling	N	36	2	38
	% of Total	29.8	1.7	31.4
Total	N	109	12	121
	% of Total	90.1%	9.9	100.0
Difference test	F-Value	2.42		

Source: survey data (Dec, 2015)

Access to market often plays an important role in influencing the marketing behaviour of farmers. In this case, the mean difference test in the distance to product and input markets shows that there is no statistically significant difference in the average distance to market for farmers with different marketing behaviour. The average distance to product market is estimated at 6.11 km, to fertilizer market 2.72 km and to seed market 3.89 km (Table 14).

Table 14 Access to markets in km by marketing behaviour

Market behaviour		Product market	Fertilizer market	Seed market
No sale in all market seasons	Mean	4.60	2.77	3.20
	Std. Deviation	3.49	2.32	2.44
	N	16	16	16
Fully engaged in side selling	Mean	6.37	3.29	4.19
	Std. Deviation	3.70	2.51	3.08
	N	35	35	35
Partly engaged in side selling	Mean	4.80	2.86	3.97
	Std. Deviation	6.26	2.94	3.34
	N	32	32	32
Not engaged in side selling	Mean	7.60	2.06	3.86
	Std. Deviation	9.35	1.82	6.61
	N	38	38	38
Total	Mean	6.11	2.72	3.89
	Std. Deviation	6.63	2.44	4.46
	N	121	121	121
Difference test	F-Value	1.36	1.61	0.18

Source: survey data (Dec, 2015)

Table 15 presents the proportion of farmers who reported to receive services in the areas of inputs by cooperatives. In general, there is statistically significant difference among farmers in the different category of side selling marketing behaviour in access to input provision service by cooperatives. However, the data do not show clear indication of difference between those who are fully engaged in side selling and those who are not engaged in side selling. This indicates accessing the required inputs (fertilizer, seeds of other crops and seeds of malt barley) may not be a very good incentive to contract enforcement. In general, all the famers, about 89%, and about 82% of the farmers purchase fertilizer, seeds of other crops and seeds of malt barley from cooperatives, respectively. However, it will be important to consider preferential access to inputs in following seasons based on contract fulfilment.

Table 15 Access to services in cooperatives' input provision

Marketing behaviour		Do you buy from cooperatives?					Total
		Fertilizer	Seed		Malt barley seed		
		Yes	Yes	No	Yes	No	
No sale in all market seasons	N	16	14	2	11	5	16
	% of Total	13.2	11.6	1.7	9.1	4.1	13.2
Fully engaged in side selling	N	35	35	-	34	1	35
	% of Total	28.9	28.9	-	28.1	0.8	28.9
Partly engaged in side selling	N	32	24	8	24	8	32
	% of Total	26.4	19.8	6.6	19.8	6.6	26.4
Not engaged in side selling	N	38	35	3	30	8	38
	% of Total	31.4	28.9%	2.5%	24.8	6.6	31.4
Total	N	121	108	13	99	22	121
	% of Total	100.0	89.3%	10.7	81.8	18.2	100.0
Difference test	F-Value	-	11.37***		8.57**		

Source: survey data (Dec, 2015)

4.6.6 Farmers' social capital and marketing behaviour

Farmers' social capital mainly in terms of number of markets farmers' can sell, number of traders, number of regular customers , number of customers to whom the farmer would or do sell on credit, and number of *delalas* (brokers) is presented in Table 16.

In general, it was found that there is no statistically significant difference in the stated indicators of social capital among farmers in the different side selling market behaviours. It was also found that there are no farmers who sells through *delala*. The only significant difference was observed in the number of clients to whom a farmer would or do sell on credit. Unexpectedly, a higher number of such clients was reported by those who did not sell any malt barley in the 2014/15 production season compared to other categories of farmers. This may be an indicator that sell on credit may not be a relevant factor for side selling marketing behaviour under the study area context.

Table 16 The social capital of respondent farmers by marketing behaviour

Marketing behaviour		Number of markets in which the farmer sell malt barley	Number of traders the farmer knows	Total number of regular customers in sale markets	Number of clients to whom the farmer would or do sell on credit
No sale in all market seasons	Mean	1.88	2.25	1.94	1.31
	Std. Deviation	0.96	1.34	1.24	1.01
	N	16	16	16	16
Fully engaged in side selling	Mean	1.97	2.60	1.80	0.74
	Std. Deviation	1.20	1.87	1.64	0.75
	N	35	35	35	34
Partly engaged in side selling	Mean	1.50	3.50	1.44	0.47
	Std. Deviation	1.08	4.18	1.39	0.94
	N	32	32	32	30
Not engaged in side selling	Mean	1.87	2.39	1.97	0.86
	Std. Deviation	1.09	1.91	1.53	0.82
	N	38	38	38	37
Total	Mean	1.80	2.73	1.78	0.79
	Std. Deviation	1.11	2.66	1.49	0.89
	N	121	121	121	117
Difference test	F-value	1.14	1.31	0.83	3.51**

Source: survey data (Dec, 2015)

4.7 Determinants of side-selling

4.7.1 Farmer level determinants: Probit model estimates

The dependent variable for the probit model is binary representing 1 if the household is a side seller, zero otherwise. Table 17 presents both estimated coefficients and the marginal effects along with the level of significance. The likelihood ratio statistics as indicated by the χ^2 statistics is highly significant (P<0.0) suggesting strong explanatory power of the model.

Among socio-demographic variables, age of the head of the household is found to have a positive impact on the chances of a household to be a side seller. The probabilities of being a side seller would increase by 2.2% for a one year age increase. This indicates that older farmers to be more in side selling market position compared to younger farmers.

Farmers with more resources owned in terms of land operated and livestock are to have lesser probability to be in side selling market position compared to those with less resources. A hectare increase in the total land operated is estimated to decrease the probability of side seller by 8.1% and similarly, a one unit increase in TLU is estimated to decrease the probability of side seller by 1.4% given other factors remain constant. However, the size of land allocated for malt barley is found to increase the probability of a farmer to be in side selling market positions and it is estimated that a hectare increase in the area of malt barley will increase the probability of a farmer to be in side selling market position by 25%. This is highly linked with the fact that those who are more dependent on malt barley are expected to explore more markets and market actors that is expected to create the opportunity of being a side seller.

Given other factors constant, the total volume of malt barley sold is found to negatively affect the probability of being a side seller and it is estimated that a quintal increase in the volume of malt barley sold is estimated to reduce the probability of being side seller by 1.9%. This indicates that farmers with more volume of malt barley sold are expected to respect their contract commitments.

Time of sale is found to significantly affect the probability of side selling market behaviour. It was found that selling malt barley after storing for few months is estimated to reduce the probability of being side seller by 27.6% and selling late before next production season is estimated to increase the probability of being side seller by 25.1%.

Among factors related to farmers' perceptions about malt barley buyers, only perception about provision of credit by cooperative unions when farmers need was found to reduce the probability of being a side seller. It is estimated that the perceived better service by unions decreases the probability of being a side seller by 59.9%.

Access to extension service among services was found to negatively affect the probability of being a side seller. It was estimated that the closer the farmer is to FTC the lesser probability to be in side selling market position.

It was also found that the probability of being a side seller was location sensitive. It was estimated that the farmers in Digalu Tijo are more likely to be in a side selling market position compared to those Lemu Bilbilo by 42% on average. The KII indicates that this difference associated with (i) existence of more traders linked with the proximity to bigger town, and (ii) the strength of cooperatives operating the woreda especially linked with ownership of warehouses.

Table 17 Determinants of malt barley side selling: Probit model estimates

Category of variables	Variables	Coef.	Std. Err.	Marginal effect (dy/dx)
Socio-demographics	Edu_HHD	0.227	0.326	0.043
	Age_HHD	0.118***	0.047	0.022
	Family_size	0.030	0.053	0.006
Resource ownership	Land_operated	-0.431*	0.246	-0.081
	TLU	-0.074*	0.045	-0.014
	Oxen	-0.099	0.368	-0.019
Malt barley production characteristics	Area_maltbarley	1.336*	0.742	0.250
	Yield_maltbarley	0.028	0.022	0.005
market behavior	Coop_buy_seed_maltbarley	1.024	0.669	0.192
	Coop_years_member	-0.049	0.050	-0.009
	Malt_consumed_2006	0.121	0.085	0.023
	Malt_sold_2006	-0.102**	0.050	-0.019
	Sold_afterharvest	0.389	0.767	0.073
	Sold_after_storing	-1.472**	0.719	-0.276
	Sold_before_nxtseason	1.342*	0.788	0.251
Perceptions	Price_Primarycooperative	0.797	0.753	0.149
	Negotiation_Primarycooper	0.404	0.716	0.076
	Immediate_payement_primar	0.071	0.746	0.013
	Trust_quality_primarycoop	-0.559	0.676	-0.105
	Relationship_marketing_pr	0.136	0.804	0.025
	Relationship_marketing_un	1.285	1.231	0.241
	Relationship_information_	-0.544	0.596	-0.102
	Relationship_information0	-0.092	1.271	-0.017
	Accessibility_location_pr	-0.867	0.747	-0.162
	Accessibility_time_primar	-0.484	0.889	-0.091

Category of variables	Variables	Coef.	Std. Err.	Marginal effect (dy/dx)
	Service_credit_primarycoo	-0.368	0.545	-0.069
	Service_credit_union	-3.201*	1.715	-0.599
	Service_advice_primarycoo	-0.203	0.627	-0.038
	Reason_ervice_advice_union	2.242	1.459	0.420
Access to services	FTC_distance	0.274**	0.123	0.051
	Market_sell_produce	-0.049	0.030	-0.009
	Market_buy_seed	0.008	0.042	0.002
Location (woreda)	Digalu Tijo	2.661**	1.364	0.420
	Kofele	1.662	1.055	0.285
	Constant	-4.150*	2.532	
Number of obs		109		
LR chi2(34)		63.6***		
Prob > chi2		0.00		
Pseudo R2		0.46		
Log likelihood		-36.62		

4.7.2 Systemic determinants: market intelligence analysis

This part presents the systemic factors that creates favourable environment for farmers to engage in side selling based on discussions made with all market actors and service providers. Accordingly, the key factors in these regard are found to be (i) free rider problem, (ii) pricing, (iii) time and place of purchase offered by cooperatives, (iv) the controversial relationship between primary cooperatives and unions, and (v) limited skilled manpower and require physical facilities.

Free rider problem: this is one of the crucial factors that affects contract enforcement. The contract providers often incur additional cost to ensure quality production of required volume of malt barley, which has direct implication of pricing. These costs are often related with provision of training, supervision, and increasing access to required inputs. However, those actors not engaged in such investments can manipulate farmers through a minor price margin incentive. In addition, the closeness of market actors like local assemblers and traders creates the opportunity to manipulate market information that can influence farmers' marketing decisions pushing to engage in side selling.

Pricing: the approaches followed in price setting seems straight forward where price premium is added as an incentive for farmers on top of prevailing prices for different categories of quality standards. The challenge in this regard is reported to be at two levels. The first is who, should determine the prevailing price and how and for which quality grades; and the second is who should determine the quality standard supplied malt market. The approach followed to determine the prevailing prices is through a committee composed of representatives from cooperatives, buyers, and governments (Oromia Trade and Market Development Bureau in the study area). Though the approach seems to address most of the challenges, the price determination to the different category quality standards is reported to be not exhaustive. The determination of quality standards is made at final stage after the product is delivered in the designate sites as per the agreement and often it is the contract providers who determines the quality standard as per the procedures stated in the contracts. This approach is reported to create mistrust between contract providers and cooperatives on top of the possibility of misconduct it can create given the limited incentive the cooperative representatives have. Thus, it will be important to capacitate coops to have their own quality standard determination in terms of expertise and also required facilities. In turn, this is expected to assist cooperatives to apply quality standards while buying from farmers, which has not been the case so far.

Late announcement of purchase price by cooperative is another systemic problem. In general, the assessment made revealed that farmers begin malt barley selling immediately after harvest in December- January for immediate use, but contract providers especially, AMF set price at the end of January at a time when farmers have already sold their malt barley to other market actors especially to local traders at lower price. The main reasons associated with delayed announcement are (i) the time taking administrative decision making process, (ii) the ever increasing competition among market actors (AMF, breweries, farmer traders, and traders) and their intent for price manipulation, and (iii) the natural phenomena of less uniformity of farmers' readiness to sell to cooperatives. However, the recent public engagement through ATA and Oromia Trade and Market Development Bureaus is expected to address this challenge.

Time and place of sell: cooperatives require farmers to sell at the cooperative designated site, which may not be convenience for most of the farmers. In addition, the time of purchase is not always convenient to farmers compared to the time offered by other market actors. It was found that a number of farmers who came to sell to cooperatives shifting to local traders because of absence of contact at the designate purchase site by cooperatives. The KIIs and FGD indicate that this is associated with (i) the working procedures of cooperatives, (ii) the limited incentive for the purchase committee and/or hired workers to work throughout the week, (iii) the confounded limited financial capacity of primary cooperatives to pay in cash at the time of sale, and (iv) limited storage facilities.

Relationship between primary cooperatives and unions: primary cooperatives do not feel comfortable with much of the market arrangements they have with their respective unions. Especially, the services the unions provide, which is linked only with facilitation of contract agreement, input delivery and payment and the extent of benefit sharing is reported to be unfair. Recognizing this challenge, some of the contract arrangements like the contract of Heineken with unions clearly indicates the proportion of share from premiums for unions and primary cooperatives. In some cases, primary cooperatives seem to prefer to enter into contract directly with the potential buyers.

Skilled manpower and required physical facilities: many research reports clearly indicated that the main challenges of cooperatives is associated with the lack of professional management of their activities. In addition, manpower managing cooperatives does not have any incentive to make cooperatives profitable. Therefore, there is often high probability that other market actors can easily manipulate cooperative decisions to their own benefits. On top of this, the physical facilities mainly storage facilities are often limited seriously affecting the cooperatives purchasing behaviour especially in terms of time of purchase. These have been also clearly identified during the FGDs and KII with experts of woreda offices of agriculture and cooperative promotions, and union leaders.

4.8 Major challenges and suggested strategic intervention options

4.8.1 Major challenges of primary cooperatives linked with farmers' side selling

This part is based on the analysis of information generated through KII, FGDs and market intelligence on contract arrangement and its implementation. In general, the challenges can be categorized into challenges related with (i) ensuring production of required quantity of malt with required quality, (ii) managing free rider problem, (iii) ensuring timely purchase of produced malt barley, (iv) relationship of primary cooperatives with contract providers esp. with unions, (v) competitiveness in marketing service provision compared to other market actors, and (vi) the need for wider stakeholder engagement. Table 18 summarizes the main challenges along with the reasons behind.

The extent of side selling depends on household's level of production that fulfils required quality. Among the farmers, 13.2% reported that they did not sell any malt barley during the 2014 production season. This in turn is determined by the extent of application of recommended production technologies and practices, which is affected by the farmers' know-how and also the extent of technical backstopping provided. Thus, it will be important to strengthen and/or establish technical backstopping of farmers through stronger and timely provision or facilitation of access to required inputs and associated extension services.

Ensuring timely purchase of produced malt barley is reported to be the key challenge facing cooperatives. This is associated with shortage of finance, shortage of storage facility, disincentive due of cost of storage and product management, and also the logistical incontinence to ensure product collection from farmers.

The controversial marketing relationship of primary cooperatives with respective unions is also a very serious challenge creating fertile ground for other market actors to operate and enhance side selling. The issues in this regard are reported to be (i) unmatched benefit sharing compared to services provided between primary cooperatives and union, (ii) time lags in transfer of payments and benefits from unions to primary cooperatives, and (iii) controversies in quality assessment for price setting. Recent contract arrangements made by ultimate buyer of malt barley (AMF and breweries) with cooperative unions indicate that there is a clear statement of benefit sharing (premium price). As indicated in the contract agreements, the share of premium price for union is 3% from the 10% premium for Heineken, and 3% from 7% premium for AMF. However, the extent of value added by the union compared to primary cooperatives the benefit sharing need to be reconsidered. Given the important role of timely purchase from farmers, the financing capacity of primary cooperatives is very crucial. In this regard, cooperative unions are expected to support primary coops through timely transfer of finances and/or facilitation of access to finance. The existing contract arrangements base product pricing on quality assessment including product rejection. In this regard, the level of honesty and genuineness of quality assessment considerably affects the trust among actors. Though it also applies for the relationship between farmers and primary cooperatives, the challenge is more pronounced between primary cooperatives and unions. Therefore, it will be important to establish a system where there will be trust between the two parties. The recent trend indicates that the engagement of wider stakeholders including the Oromia Trade and Market Development Bureau need to be further strengthened to build the trust in quality assessment.

Competitiveness of primary cooperatives in marketing service provision compared to other market actors is also one of the challenges. This is highly associated with the limited incentive for primary coops to timely purchase due to storage costs, the inconvenience of point of sale for farmers that the primary cooperatives provide, limited overall skill of managing contract arrangement with farmers by primary cooperatives, and the systematic engagement of local traders. The systematic engagement of local traders is associated with the use as an opportunity of the challenges facing the primary cooperatives, and manipulation of market information in a way that influences farmers' marketing decisions.

Finally, the need to empower the whole value chain influences primary cooperatives to act independently. In this regard, the main challenge is the fact that any investment to ensuring quality production and its delivery to end users (malt factory and breweries), there is a serious free rider problem. In order to avoid the problem of free rider, there is a need to have a wider stakeholder engagement.

Table 18 Key challenges facing cooperatives to minimize malt barley side selling

Area	Challenge	Reasons
Ensuring increased production with better quality at farm level	Limited use of quality seed of recommended varieties	Farmers limited willingness to use certified seed
		Shortage of supply of certified seed
	Limited application of recommended agronomic practices	inadequate influence of the existing extension
		Limited engagement of contract providers in extension service
Ensure timely purchase by primary cooperatives	limited consideration by cooperative the farmers' preferred time of sale	Shortage of finance
		Late announcement of purchase prices.
		Shortage of storage facility
		Disincentives due of cost of storage and product management
		Logistical incontinence to ensure product collection from farmers
Free rider problem	Other actors not engaged in contract arrangement do not incur additional costs, which helps them to manipulate prices as incentive	Additional costs incurred by cooperatives and contract providers affects the purchase price that can be offered to farmers
Relationship of primary cooperatives with contract providers	Controversial marketing relationship of primary cooperatives with respective unions	Unmatched benefit sharing compared to services provided between primary cooperatives and union
		Time lags in transfer of payments and benefits
		Lack of independent quality assessors for price setting
Competitiveness in marketing service provision compared to other market actors	Limited provision of timely marketing services	Limited incentive for primary coops to timely purchase due to storage costs
		Limited convenience for farmers the place of sale when selling for coops
		Limited overall skill of managing contract arrangement by coops
		Systematic engagement of local traders
Need for wider stakeholder engagement	Need for technical backstopping and its cost implication	Production of quality malt barley requires backstopping farmers and also cooperatives in production and product

Area	Challenge	Reasons
		handling
		There is a free rider problem if someone wants to provide technical backstopping
	Controversies in quality assessment and price setting	Lack of independent quality assessors for price setting
		Need for third party engagement, which creates additional cost
	Need to empower the whole value chain	The need to involve wider stakeholders to implement contract arrangements (seed enterprises, extension offices, Trade and Market Development offices, Seed laboratories, etc

4.8.2 Suggested strategic intervention options to minimize side selling

The results of this study clearly indicates the need for strategic interventions in six major areas to minimize side selling and further strengthen market arrangement through contracts, which are presented in Table 19. These strategies are reinforced by the experiences of Diageo that has achieved better performance in reducing side selling (see annex 7.1.).

Boosting production and productivity: given the considerable number of farmers not engaged in any sell to market of malt barley and still the low levels of productivity levels, the contract arrangements need to consider improving access to quality seed of better performing malt barley varieties.

Table 19 Suggested strategic intervention options in minimizing side selling

Strategic area	Suggested strategic interventions
Boosting production and productivity	• Enhancing access to and use of better performing varieties
Free rider problem	• Promotion of wider stakeholders' engagement and whole malt barley value chain empowerment • Promotion of direct engagement of local traders
Quality assessment for pricing	• Promote independent and credible quality standard assessment approach • Strengthening fair prevailing price identification approach
Time and place of sale	• Capacitate cooperatives to purchase at regular time and convenient place for majority of farmers; • Assessment and announcement of purchase price as early as possible (immediately after harvest)
Physical and human capacity of primary cooperatives	• Facilitate the management of cooperatives by professionals with required skill and incentives • Facilitate the availability of required facilities for cooperatives
Market relationships between primary cooperatives and their unions	• Facilitate the clear delineation of roles and responsibilities with associated benefits

Strategic area	Suggested strategic interventions
Finance	• Capacitate/facilitate access to finance for timely purchase and distribution of required inputs (seeds and fertilizers) • Capacitate/facilitate access to finance for timely purchase of produced malt barley from farmers; • Capacitate/facilitate access to finance for construction/purchase of required facilities (storage, cleaning facilities, and quality measurement)

Free rider problem: this is the main challenge identified affecting contract enforcement, which requires promotion of wider stakeholders' engagement and whole malt barley value chain empowerment, and also promotion of the direct engagement of local traders, who often are the main free riders. The possible engagement of local traders can be made by linking them in contract that forces them to have further contract with farmers that considers technical backstopping and input delivery.

Quality assessment for pricing: this is an area where a market misconduct can happen from both contract providers and/or contract takers. Thus, it will be important to promote independent and credible quality standard assessment approach. Often this type of engagement are left for public sector. However, triangulation is also a crucial factor. Thus, it is suggested to have quality determination (like it is for coffee) by public service providers. In addition, it will be important that the unions have their own capacity of setting standards (to allow them buy considering quality standard from individual farmers) and also the breweries and AMF to have their own capacity.

In anywhere in the line, misidentification of the quality standards has a considerable incentive for the assessor. In addition, it will be important to strengthening fair and trustworthy prevailing price identification approach.

Time and place of sale: it will be important for cooperatives to make sure that they purchase during times and at places that are convenient to the farmers and makes cooperatives competitive to other market actors especially with local traders.

Physical and human capacity of cooperatives: this is a universal challenge of cooperatives worldwide. However, it is much problematic with cooperative handling contract farming. Thus, it will be important to promote the management of coops by professional with adequate incentives. In addition, facilitation of availability of required facilities mainly standard warehouses with associated management capabilities is crucial strategic intervention.

Market relationships between primary cooperatives and their unions: the smooth relationship between primary cooperatives and unions is very crucial for effective implementation of contracts. Thus, it will be important facilitate the clear delineation of roles and responsibilities with associated benefits between them.

Capacitate cooperatives and unions in value addition: currently, cooperatives and their unions are engaged in limited value addition especially in those areas that can facilitate contract marketing like grading and standard settling along with packaging. Thus, it will be important that coops and their union invest in their capacity to add value on what have been produced by small-scale member famers. This is obviously linked in access to finance.

5 Conclusions and recommendations

The study presented the contract arrangements prevailing in ensuring the supply of required quality malt barley in required amount, the current status of side selling in malt barley, the major characteristics of side selling marketing behaviour of farmers, the determinants of side selling at farmers and system levels, and what needs to be done to minimize side selling.

In the implementation of the suggested strategic interventions, it will be important to consider the following approaches and issues:

a) The dynamic nature of malt barley market in Ethiopia linked with the continuous emergence of new market actors that can considerably affect established market arrangements;
b) Ensuring wider stakeholders' engagement including farmers, their representatives (coops), public organizations and private actors including traders;
c) Minimize resource handouts to cooperatives instead capacitate to access to finance for investment in required facilities to ensure the suitability of impact of interventions;
d) Considering awareness creation activities about opportunities and challenges for all relevant actors at all levels; and
e) Considering and targeting incentives for misconduct and conduct of actors

6 Reference

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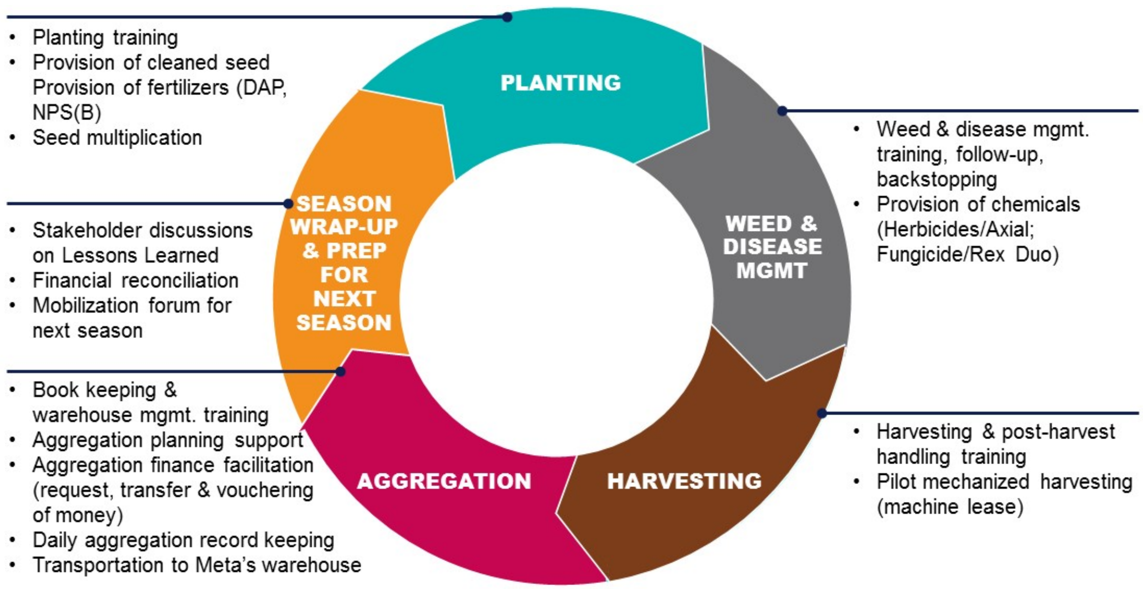
7 Annex

7.1 Experiences of Diageo in ensuring contract management

In general, the approach followed by Diageo in promoting contract farming of malt barley with cooperatives is more or less the same in principle with other contract providers (AMF and Heineken). The major unquietness is related with the assignment of hired experts who work with cooperatives and farmers at *kebele* level, timely implementation of what is agreed in the contracts, and better incentives in terms of price. Specifically, these are (i)provision of practical training to individual smallholder farmers on-site at grass-roots level, (ii) facilitation of use of complete production input package (seed, fertilizers, chemicals), (iii) pre-financing of all inputs on interest-free basis, and (iv) provision of competitive and incentivizing gate prices for malt barley farmers. The schematic strategic interventions of Diageo contract farming with farmers and their cooperatives is presented in the figure below.



Source: Technoserve/Diageo

7.2 Survey tools

7.2.1 Questionnaire – Cooperative member farmers

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1. Questionnaire Number (three digits) _______________

2. Area information **code**

2.1. Name of Kebele Administration (KA) _______________________ ____/____

2.2. Name of the primary cooperative _______________________ ____/____

2.3. Name of the Cooperative Union _______________________ ____/____

2.4. Woreda _______________________ ____/____

2.5. Zone _______________________ ____/____

3. Demographic and personal Information

3.1. Name of household head _______________________

3.2. Sex of household head ______1= male 2 =female

3.3. Age of household head ______ Years

3.4. Religion of the household head _______

1) Orthodox Christian 2) Muslim 3) Protestant, 4) Catholic 5) others (specify)

3.5. Marital status_____________

1) Single 2) Married 3) Divorced 4) Widow 5) Separated

3.6. Education level of head of household__________________

0) Illiterate 1=Read and write/Religious schools 2) ___years of formal education 3) third level (college and above)

3.7. Family size

Age category	Number of males	Number of females
Members < 15 Years old		
15 – 65 years old		
Members> 65 years old		
Total members		

4. Resource ownership

4.1. Land cultivated

a) Rain-fed: Own land cultivated _______ha

Rented in land _______ha

b) Irrigated: Own land cultivated _______ha

Rented in land _______ha

4.2. Livestock ownership

No	Livestock	No owned now	No	Livestock	No owned now
1.	Oxen		6.	Goats	
2.	Cows		7.	Donkey	
3.	Heifer		8.	Poultry	
4.	Calves		9.	Bee colony	
5.	Sheep		10.	Camels	

5. Access to services

Extension

5.1. Do you meet development agents to get any extension service? ____ 1) Yes 2) No

5.2. If yes,

a) Do you get any advice about malt barley production? ____ 1) Yes 2) No

b) Do you get any advice about Malt barley marketing? ____ 1) Yes 2) No

5.3. What is the distance of your house to the FTC in your area? _____ Km

Credit

5.4. Can you get credit if you wish to get? ____ 1) Yes 2) No

5.5. Have you ever used credit for malt barley production? ____ 1) Yes 2) No

5.6. If used credit for malt barley production, what was the amount of credit was used in 2007 EC production seasons? ________Birr

5.7. Have you ever used credit for fertilizer purchase? ____ 1) Yes 2) No

5.8. If used, what was the amount of credit was used in 2007 EC production seasons for fertilizer purchase? _________________________ Birr

5.9. What are the main sources of credit?

a) ____

b) ____

c) ____

d) ____

5.10. If used credit, do you have an outstanding credit?

5.11. If you have not used credit for malt barley production why?

Market (largest transaction made)

5.12. What is the distance to the market where you sell agricultural products? ____ Km

5.13. What is the distance to the market where you buy fertilizer? _______ Km

5.14. What is the distance to the market where you buy seed? _______ Km

5.15. What is the distance to the market where you sell seed? _______ Km

Membership to cooperatives and services

5.16. Are you member of agricultural cooperative? ____ 1) Yes 2) No

5.17. Do you buy fertilizer from cooperatives? ____ 1) Yes 2) No

5.18. Do you buy seed from cooperatives? ____ 1) Yes 2) No

5.19. Do you buy malt barley seed from cooperatives? _____1) Yes 2) No

a) If yes, did you get through credit? ____ 1) Yes 2) No

b) Is having to repay your seed loan a disincentive to sell back to the PC/Union – does it make you consider side selling? ____ 1) Yes 2) No

c) Has the cooperative offered you seed as revolving seed ____ 1) Yes 2) No

d) If yes, were you able to repay the seed ___________ 1) Yes 2) No

e) Is having to repay your seed loan a disincentive to sell back to the PC/Union – does it make you consider side selling? ___________ 1) Yes 2) No

5.20. Do you sell malt barley through cooperative? ____ 1) Yes 2) No

a) If yes, how was sold ______________qts

b) __________________% of total production

5.21. What was the net income return you received from the cooperative? _____________ ETB

5.22. Was a dividend paid ____ 1) Yes 2) No

5.23. If yes, how much was the dividend ________________ETB?

5.24. How long have you been a member and in which of those years were dividends paid?

a) __________________ years of membership

b) __________________Years dividends paid

5.25. Do you feel like you are part of the decision making process within the cooperative? __________

a) I strongly feel

b) Moderately feel

c) I do not feel absolutely

5.26. Do you access other services through your cooperative? If yes, what services?

a) ____

b) ____

6. Characterization of household crop production in 2007 EC production season

No	Crop type (use crop code)	Land allocated in ha	Yield (qt/ha)	Did you use purchased seed of improved varieties? 1=yes 2=No	Did you apply fertilizer? 1=yes 2=No
1.	Tef				
2.	Food Barley				
3.	Malt Barley				
4.	Maize				
5.	Wheat				
6.	Faba bean				
7.	Field pea				
8.	Chickpea				
9.	Haricot Beans				
10.	Lentils				
11.	Nug				
12.	Rapeseed				
13.	Linseed				
14.	Other (specify)				
15.					
16.					

7. Malt barley marketing practices

7.1. Disposition malt barley

Indicator	2006 EC production season	2007 EC production season
Total amount produced (qts)		
Amount saved for seed (qtls)		
Amount used/saved for domestic consumption (qtls)		
Amount sold (qtls)		
Amount stored for next season		

7.2. **Volume and time of sale of malt barley (this deals only with amount sold) from 2006 production season**

Time of sale	Buyer	Amount sold (qtls)	Unit price (birr/qt)	
			On cash	On credit
Immediately after harvest	Other farmer(s)			
	Local assemblers			
	Local traders			
	Primary cooperatives			
	Cooperative union			
	Others			
After storing for some months	Other farmer(s)			
	Local assemblers			
	Local traders			
	Primary cooperatives			
	Cooperative union			
	Others			
Just before next production season	Other farmer(s)			
	Local assemblers			
	Local traders			
	Primary cooperatives			
	Cooperative union			
	Others			

7.3. Major reasons for your decision to sale to the buyer

Provide ranks in terms of advantage (1st for the most advantageous, 2nd, 3rd, 4th, and 5th)

	Indicator	Other farmer(s)	Local assemblers	Local traders	Primary cooperatives	Cooperative union
Price related	Unit price advantage					
	Better approach in price negotiation					
Time of payment	Immediate payment					
	Payment as per agreement					
Trust	Trust in weighing					
	Trust in quality determination					
Relationship	Long-term marketing partner					
	Continuous exchange of information					
Accessibility	Located nearby (purchase at farm gate)					
	Purchase any time of a day and any day of the week					
Provision of other services	Provide credit when needed					
	Provide advice on agricultural activities					
	Provide packaging material					
Other (specify)						

7.4. Use of Regular Clients (Dembegna)

a) Number of markets in which you sell malt barley ______________

b) Number of traders you know in all these markets ______________

c) Total number of regular dembegna (traders, millers, consumers, hotels, etc) in markets in which you sell ____________________

d) Number of clients to whom you would or do sell on credit? ______________

e) Do you use delala (broker) to sell your malt barley? _____ 1=Yes 2= No

f) If yes, what percentage of the malt barley is sold to through broker? __________%

7.5. **Contractual Arrangements**

a) Pre-production contracts

Clients	Have you entered into pre-production contracts with buyer 1=Yes 2= No	If yes, do you receive advance payment from the buyer? 1=Yes 2= No	Do you get a different price when you sell with advance payment? 1. higher 2. lower 3. same
Other farmer(s)			
Local assemblers			
Local traders			
Primary cooperatives			
Cooperative union			
Assela Malt Factory			
Other (specify)			

b) Have you ever faced problems with the contract for advance payment?

______________ 1 = Yes 2 = No

c) If YES, which of the following problems did you encounter with buyers

	1= Yes 2= No				
Payment problems from client:	assemblers	traders	Pr. coop	Union	Assela malt factory
a) After the agreed upon date					
b) Partial payment					
c) No Payment					
d) Attempt to renegotiate agreed upon price					
Contract fulfilment problems by producer/farmer:					
e) Quality did not meet requirements					
f) Delivery was late					
g) Delivery did not happen					
h) Quantity delivered was partial					

d) **What measures do you take if there are disputes**

Source of dispute	**Measures** 1= Arbitration/Expert Determination (legal process 2= Conciliation (informal legal process) 3= Mediation (no legal process)				
	Assemblers	**Traders**	**Pr. coop**	**Union**	**Assela malt factory**
1. Side selling by producer					
2. Crop failure					
3. Pricing related					
4. Grading related					
5. (Unjustified) rejection by buyer					
6. Delayed payment (or non-payment) by the buyer					
7. Force majeure (unavoidable accident)					

7.2.2 Checklist for FGD: Breweries (BGI Ethiopia, Heineken Brewery, Diageo plc)

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1. What is the total annual demand of the company for malt?

2. What strategies it apply to ensure the availability of required malt? What is the share of contribution of?

- 2.1. Import of grain malt?
- 2.2. Import of malt?
- 2.3. Purchase from local malt factories?
- 2.4. Produce through contract farming and own malt processing?

3. When purchasing do you prefer to deal with Unions, Cooperatives, Traders or independent farmers. Please rank them in preference.

4. What is the advantage of Unions and cooperatives?

5. Is company engaged in contract farming with unions and cooperatives to ensure domestic production of malt barley? If yes, what is the malt barley marketing arrangement between the company and union/primary coops?

- 5.1. Do you have any formal agreement?
- 5.2. If yes, can we get a copy of the agreement?
- 5.3. What are the terms in the agreement
  - 5.3.1. Minimum volume,
  - 5.3.2. price, can you offer minimum pricing, bonuses
  - 5.3.3. Time of sale,
  - 5.3.4. Place of delivery
  - 5.3.5. Quality assurance mechanism (variety, content, moisture, who make control etc),
- 5.4. What are the main challenges faced to implement the marketing activities as per the agreement?
- 5.5. What are the possible solutions for the challenges?
- 5.6. Are maximum quotas put in place in seasons of excess production?

6. Do you buy from the SHA target Union/PCs – if not, what would incentivise you to do this

7. **Do you provide any support services to the unions and primary cooperatives?**
   7.1. Seed and fertilizer?
   7.2. Training on production of malt barley?
   7.3. Credit? Cash?
   7.4. Packaging?
   7.5. Transport?
   7.6. Other (specify)?
8. Do you buy malt barley from farmers directly? If yes,
   8.1. how you arrange the purchase process?
   8.2. What are advantage and disadvantage of buying directly from farmers?
9. **Do you buy malt barley from traders? If yes?**
   9.1. What proportion of the total locally purchased grain barley from traders (share and volume?)
   9.2. What are the main reasons to purchase from traders? (volume, price, time and place of delivery, quality etc)
10. **What are the key challenges the company face to purchase from unions and primary cooperatives?**
    10.1. Side selling by malt producers (member farmers), primary cooperatives and/or unions?
    10.2. Untimely delivery?
    10.3. Quality problems?
    10.4. Other (specify)?
    10.5. ____?
    10.6. ____?

11. What are the key suggestions that the unions and primary cooperatives should do to ensure more purchases of malt barley from them?
12. What are the key suggestions that the Kebele and woreda agriculture office experts should do to ensure more purchases of malt barley from unions and cooperatives?

13. What are the key suggestions that the company need to do differently to ensure more purchases of malt barley from unions and cooperatives?
14. Is there a difference between the malt barley purchased from cooperatives and unions and the malt barley purchased from traders? (Quality, cost, etc.?)
15. Is it important for the company to buy from cooperatives and unions? (i.e. all things equal would they choose a co-op or union over a trader?)

7.2.3 Checklist for FGD: Extension workers (SMS and DAs at target woredas and Kebeles)

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1. **What support you provide to malt barley producers?**
   1.1. Facilitate access to seed of preferred varieties
   1.2. Facilitate access to fertilizer
   1.3. Production technique support?
   1.4. Facilitate access to markets? If yes, how?
      1.4.1. Facilitate contract farming
      1.4.2. Assist to resolve disputes
      1.4.3. Other (specify)____
2. **What are your roles in facilitating the sale of malt barley by producers to primary cooperatives?**
3. **What is your role in facilitating the sale of malt barley by primary cooperatives to unions?**
4. **What is your role in facilitating the sale of malt barley to Assela Malt factory or other malt factories or breweries?**
5. **What is your role in malt barley marketing arrangement between the union and Assela Malt Factory?**
   5.1. Do you formalize contract agreement?
   5.2. If yes, how is that done?
   5.3. What are main challenges faced to implement the marketing activities as per the agreement
6. **What is your role in malt barley marketing arrangement between the union and the respective primary cooperatives?**
   6.1. Do you formalize contract agreement?
   6.2. If yes, how is that done?
   6.3. What are main challenges faced to implement the marketing activities as per the agreement
   6.4. What are the possible solutions for the challenges?
7. **What are your observations as to the challenges unions and primary cooperatives face to market malt barley through contact farming to malt factories/breweries? What possible solutions you suggest?**
8. **What are your observations as to the challenges malt factories/breweries face to purchase malt barley from unions and primary cooperatives? What possible solutions you suggest?**
9. **What are your observations as to the challenges the woreda and Kebele experts/office of agriculture face to facilitate the marketing of malt barley by primary coops and unions to malt factories/breweries? What possible solutions you suggest?**

7.2.4 Checklist for FGD: Primary Farmers' cooperatives

1. Since when and how you started marketing malt barley marketing with the union/Assela Malt factory? Do you marketing with other malt factories or traders?
2. What is malt barley marketing arrangement between the primary cooperative and the union?
   - 2.1. Do you have any formal agreement?
   - 2.2. If yes, can we get a copy of the agreement?
   - 2.3. What are the terms in the agreement
     - 2.3.1. Minimum volume,
     - 2.3.2. price,
     - 2.3.3. Time of sale,
     - 2.3.4. Place of delivery
     - 2.3.5. Quality assurance mechanism (variety, content, moisture, who make control etc),
   - 2.4. What are main challenges faced to implement the marketing activities as per the agreement
   - 2.5. What are the possible solutions for the challenges?
   - 2.6. Has the Union agreed to provide seed on credit but failed to do so. (either partially or fully)
3. **What is the mechanism of decision making on malt barley marketing within the primary cooperative?**
   - 3.1. Who makes decision every time? Is it the executive committee, the board or other?
   - 3.2. What is the professional background of the decision markers in the primary cooperative?
   - 3.3. What challenges are there for effective and timely decision making?
   - 3.4. What are the possible solutions for the challenges?
   - 3.5. How many different traders, factories, individuals approach you regarding sales?
   - 3.6. Do these traders, factories, individuals approach farmers directly? What are they offering that encourage farmers to side sell?
4. **What is the capacity of the primary cooperatives in ensuring effective malt barley marketing?**
   - 4.1. What human capacity has the primary cooperatives? What gaps exist? How these gaps can be narrowed? etc
   - 4.2. What is the financial capacity of primary cooperatives? What challenges are there?
   - 4.3. What physical infrastructure the primary cooperatives has to run effective marketing? (Warehouses, packaging capacity, weighing, quality assurance during purchase and sale etc)? What challenges exist in terms of infrastructure?
   - 4.4. What are the suggested possible solutions to address the challenges?

4.5. Has the Union agreed to purchase malt barley but been unable to fulfil the full agreement amount?
4.6. How pervasive is individual farmers selling to traders prior to harvest (i.e. when crop still in the field).

5. **What is malt barley marketing arrangement between the primary cooperative and the member farmers?**
    5.1. Do you have any formal agreement?
    5.2. If yes, can we get a copy of the agreement?
    5.3. What are the terms in the agreement
        5.3.1. Minimum volume,
        5.3.2. price,
        5.3.3. Time of sale,
        5.3.4. Place of delivery
        5.3.5. Quality assurance mechanism (variety, content, moisture, who make control etc),
    5.4. What are main challenges faced to implement the marketing activities as per the agreement
    5.5. What are the possible solutions for the challenges?
    5.6. How many farmers have been expelled in the last 3-5 years for not repaying their loan?
    5.7. What is the value that is provided back to farmers – net income to farmers over last 5 years? In the last 3 – 5 years – was there an annual dividend and how much was it for?
6. **What services does the primary cooperative provide to members?**
    6.1. How do they access those services?
    6.2. What percentage of members take advantage of those services?
    6.3. Does the primary cooperative offer a dividend/profit share?
    6.4. What are top three needs of farmer members? What does the primary cooperative do to meet those needs?
    6.5. Is the price paid by the cooperative greater, less or the same as the price paid by traders?
    6.6. Is there a difference in malt barley quality delivered to the cooperative among farmer members?
    6.7. Do non-member farmers sell to the primary cooperative? If so, what percentage of farmers selling to the cooperative are non-members?
    6.8. Does the primary cooperative have incentives or disincentives in place to discourage side-selling?

7.2.5 Checklist for FGD: Galema and Raya Kejewa cooperative unions

1. **Since when and how you started marketing malt barley marketing with Assela Malt factory? Do you marketing with other malt factories or traders?**

2. **What is the malt barley marketing arrangement between the union and Assela Malt Factory?**
   - 2.1. Do you have any formal agreement?
   - 2.2. If yes, can we get a copy of the agreement?
   - 2.3. What are the terms in the agreement (volume, price, time of sale, quality assurance, place of delivery, variety, Are there minimum price guarantees etc)
   - 2.4. What are main challenges faced to implement the marketing activities as per the agreement

3. **What is malt barley marketing arrangement between the union and the respective primary cooperatives?**
   - 3.1. Do you have any formal agreement?
   - 3.2. If yes, can we get a copy of the agreement?
   - 3.3. What are the terms in the agreement
     - 3.3.1. Minimum volume,
     - 3.3.2. price, minimum price
     - 3.3.3. Time of sale,
     - 3.3.4. Place of delivery
     - 3.3.5. Quality assurance mechanism (variety, content, moisture, who make control etc),
   - 3.4. What are main challenges faced to implement the marketing activities as per the agreement
   - 3.5. What are the possible solutions for the challenges?
   - 3.6. Are volume quotas put in place in seasons of excess production
   - 3.7. Have you made arrangements to buy produce that you have not been able to fulfil e.g. not been able to collect on the due date due to logistics or have you been unable to fulfil orders due to lack of capital
   - 3.8. Are you able to provide all required inputs to farmers e.g. all farmers who are requesting seed
   - 3.9. What is the rate of delinquency repayments e.g. are credit input arrangements causing higher rates of default
   - 3.10. What transparency mechanisms are available?

4. **What is the mechanism of decision making on malt barley marketing within the union?**
    4.1. Who makes decision every time? Is it made by executive committee, the board or others?
    4.2. What is the professional background of the decision markers in the union?
    4.3. What challenges are there for effective and timely decision making?
    4.4. What are the possible solutions for the challenges?

5. **What is the capacity of the union in ensuring effective malt barley marketing?**
    5.1. What human capacity the union has? What gaps exist? How these gaps can be narrowed? etc
    5.2. What is the financial capacity of union? What challenges are there?
    5.3. What physical infrastructure the union has to run effective marketing? (Warehouses, packaging capacity, weighing, quality assurance during purchase and sale etc)? What challenges exist in terms of infrastructure?
    5.4. What are the suggested possible solutions to address the challenges?

6. What services do you provide to PCs/farmers– what other services have you considered providing? How are these services accessed?

7. What are the net incomes to a Primary coop and a farmer (Calculate the net income to PCs / farmers)? And how are these services accessed?

7.2.6 Checklist for FGD: Assela Malt Factory

1. What is the total demand of the company for grain malt?
2. What strategies it apply to ensure the availability of require grain malt?
3. When purchasing do you prefer to deal with Unions, Cooperatives, Traders or independent farmers. Please rank them in preference.
   3.1. Unions____
   3.2. Primary cooperatives____
   3.3. Traders____
   3.4. Independent farmers_____________________________________

4. What is the advantage of the Unions and Cooperatives?
5. Since when and how you started purchase of malt barley from Galema and Raya Kejewa cooperative unions and their respective primary cooperatives?

Indicator	How would you rank (1 = very bad, 2 = bad, 3 = average, 4 = good, 5 = very good)
Quality	
Reliability	
Price	
Design	
Delivery time	

6. Do you purchase from other cooperative unions and primary cooperatives? If yes, is there any difference in purchase arrangement?
7. What is the malt barley marketing arrangement between the union/primary coops and Assela Malt Factory?
   7.1. Do you have any formal agreement?
   7.2. If yes, can we get a copy of the agreement?
   7.3. What are the terms in the agreement
      7.3.1. Minimum volume,

7.3.2. price, (can you offer minimum prices)

7.3.3. Time of sale,

7.3.4. Place of delivery

7.3.5. Quality assurance mechanism (variety, content, moisture, who make control etc),

7.3.6. Do you have quotas in seasons of excess production

7.4. What are the main challenges faced to implement the marketing activities as per the agreement?

7.5. What are the possible solutions for the challenges?

8. Do you provide any support services to the unions and primary cooperatives?

8.1. Seed and fertilizer?

8.2. Training on production of malt barley?

8.3. Credit?

8.4. Packaging?

8.5. Transport?

8.6. Other (specify)?

9. Do you buy malt barley from traders? If yes?

9.1. What proportion of the total locally purchased grain barley from traders (share and volume?)

9.2. What are the main reasons to purchase from traders? (volume, price, time and place of delivery, quality etc)

10. Do you buy malt barley from individual farmers? If yes?

10.1. What proportion of the total locally purchased grain barley from farmers (share and volume?)

10.2. What are the main reasons to purchase from farmers? (volume, price, time and place of delivery, quality etc)

11. What are the key challenges the company face to purchase from unions and primary cooperatives?

11.1. Side selling by malt producers (member farmers), primary cooperatives and/or unions against the agreement?

11.2. Untimely delivery?

11.3. Quality problems?

11.4. If traders are arriving at the farmers door before the Union/PC can buy (traders are being opportunist) –is the assela malt factory willing to work with the Union to prevent this happening. What measures would the factory be willing to take (minimum pricing agreements, bonuses, actions against traders e.g preferential buying from union , providing cashflow to union etc)

11.5. Other (specify)?

12. **What are the key suggestions that the unions and primary cooperatives should do to ensure more purchases of malt barley from them?**
13. **What are the key suggestions that the Kebele and woreda agriculture office experts should do to ensure more purchases of malt barley from unions and cooperatives?**
14. **What are the key suggestions that the company need to do differently to ensure more purchases of malt barley from unions and cooperatives?**
15. **Is there a difference between the malt barley purchased from cooperatives and unions and the malt barley purchased from traders? (Quality, cost, etc.?)**
16. **Is it important for the company to buy from cooperatives and unions? (i.e. all things equal would they choose a co-op or union over a trader?)**

7.2.7 Checklist for FGD: Malt barley traders

1. **From whom you often buy malt barley (estimate the share of each actor)**
   1.1. Other traders
   1.2. Malt barley producers who are not members of coop
   1.3. Malt barley producers who are members
   1.4. Primary cooperatives
   1.5. Unions
   1.6. Other (specify)______________________________?
2. **To whom you often sell malt barley?**
   2.1. Assela Malt factory?
   2.2. Other malt factories?
   2.3. Breweries (give names)
   2.4. Other traders
   2.5. Other (specify) ______________________________
3. **Do you have any contract arrangement with any of your purchasers? If yes,**
   3.1. Do you have any formal agreement? Or you have spot purchase and sale?
   3.2. If yes, can we get a copy of the agreement?
   3.3. What are the terms in the agreement (volume, price, time of sale, quality assurance, place of delivery, variety etc)
   3.4. What are main challenges faced to implement the marketing activities as per the agreement
4. **Do you provide any support services to those who sell malt barley to you?**
   4.1. Seed and fertilizer?
   4.2. Training on production of malt barley?
   4.3. Credit?
   4.4. Packaging?
   4.5. Transport?
   4.6. Other (specify)?
5. **Do you know why many of the malt barley producers including cooperative member farmers are willing to sell for you?**
   5.1. Is it due to the service you provide (credit, transport etc)
   5.2. Is it due the better price you offer?
   5.3. Is it due to the long – term relationship?
   5.4. Is it due to the time of payment you provide?
   5.5. Is it due to the place of delivery?
   5.6. Other (specify) ____
   5.7. ____

6. **Which of the services you provide to those who sell for you?**
   6.1. Credit ____________________ 1= Yes 2=No
   6.2. Transport ____________________ 1= Yes 2=No
   6.3. Inputs (seed, fertilizer) ____________________ 1= Yes 2=No
   6.4. General advise ____________________ 1= Yes 2=No
   6.5. Other (specify)____
7. **What was the unit price you bought from different suppliers**
   7.1. Other traders _____________Birr/qt
   7.2. Malt barley producers who are not members of coop _____________Birr/qt
   7.3. Malt barley producers who are members _____________Birr/qt
   7.4. Primary cooperatives _____________Birr/qt
   7.5. Unions _____________Birr/qt
8. **What time of payment you offer to those who sell for you?**
   8.1. Partly before time of sale (delivery) ____________________ 1= Yes 2=No
   8.2. Immediately at the time of sale ____________________ 1= Yes 2=No
   8.3. After sometime following delivery ____________________ 1= Yes 2=No
9. **How you manage to buy malt barley that fulfils the required quality for malt making?**
   9.1. Follow the farmers during the production season
   9.2. Provide inputs like seeds of preferred varieties
   9.3. I have personal skill in determining the quality
   9.4. Other (specify)____
10. **What are the main challenges you face in malt barley trade**
   10.1. ____
   10.2. ____
   10.3. ____
   10.4. ____