



Addis Ababa Chamber of Commerce & Sectoral Associations

(AACCSA)

Value Chain Study on Wheat Industry in Ethiopia

By

Afro Universal Consult & General Trading P.L.C

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Disclaimer

The Value Chain Study on Wheat Processing Industries in Ethiopia is part of the project entitled “Strengthening the Private Sector in Ethiopia”, which is financed by the Royal Danish Embassy in Ethiopia and implemented by AACCSA with technical support from the Confederation of Danish Industries (DI).

Opinions expressed in this report are the views of the consultants and do not necessarily represent the views of AACCSA or DI or the Royal Danish Embassy unless specified otherwise. Needless to mention, the consultant is responsible for any error, omission and misstatement of facts in this report.

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ACRONYMS

AACCSA	Addis Ababa Chamber of Commerce & Sector Associations
ATA	Agricultural Transformation Agency
CIMMYT	International Maize and Wheat Improvement Centre
CSA	Central Statistics Agency
DI	Confederation of the Danish Industries
EGTE	Ethiopians Grain Trade Enterprise
EIAR	Ethiopian Institute of Agricultural Research
EMA	Ethiopian Millers Association
FAO	Food and Agricultural Organization of the United Nations
GOE	the Government of Ethiopia
GTP	Growth and transformation Plan
MoFED	Ministry of Finance and Economic Development
MoARD	Ministry of Agriculture and Rural Development
MoT	Ministry of Trade
REAP	Research for Ethiopia's Agricultural policy
SNNP	Southern Nation's Nationalities and peoples
UNIDO	United Nations Organization for Industrial Development

EXECUTIVE SUMMARY

Addis Ababa Chamber of Commerce and Sectoral Association (AACCSA) has commissioned Afro Universal Consult & General Trading P.L.C to undertake the Value Chain Study on Wheat Processing Industries in Ethiopia. The study is part of the project entitled “ Strengthening the Private Sector in Ethiopia”, which is financed by the Royal Danish Embassy and implemented by AACCSA with technical support from the Confederation of Danish Industries (DI).

The study attempted to make an in-depth analysis on the main actors, opportunities and bottlenecks across the Wheat value chains. It specifically attempted to collect information regarding wheat production value chain in general, undertaken an analysis of the major problems and constraints that the wheat related food industry and business operators have been facing in Ethiopia with particular focus on those who are based in Addis Ababa and provide professional recommendations in addressing the identified needs for AACCSA and other actors to act upon.

The study utilized both quantitative and qualitative methods. Different processes and steps were also gone through during this study. Review of the document, community consultation using focused group discussion, key informant interview and survey using interviewer administered questionnaires were the major methodologies employed in the study process while each of them employs several components and process.

Key findings

- *Discussions held with major stakeholders as well as a review of relevant secondary data analysis indicated that there are still untapped potential for increasing production and productivity to the wheat crop that may satisfy the growing demand of manufacturing industries.*
- *The Ethiopian government through its Agricultural Growth Program has so far made multiple efforts to support farmers improve their productivity. We have come to understand that the multiple effort of government will continue until self-sufficiency in*

wheat supply is realized. Until then, the task of subsidizing wheat grain shortfall through importing thousands of tons and providing it to the milling industries will continue.

- After assessing critical issues and identifying main themes across the value chain, the study has attempted to document key factors that have contributed for the mismatch between the current market demand and supply in the wheat industry. Among several issues documented throughout the study, the following key findings were presented as a summary:
 - Currently, only a few commercial farms are left to conduct large scale wheat crop production which was run under government's jurisdiction. Hence, the predominant producers and contributors of wheat grain into the consumer market are said to be small holder farmers.
 - Most wheat growers in the survey area (92%) are members of farmers' primary cooperatives and unions. However, the kind of quality support farmers envisage and receive from their membership was indicated to be at its lowest level.
 - Despite the many promises held via decision makers to support growers to solve their farming constraint, they still talk of dissatisfaction to the extent of support delivered to their pressing issues including; lack of adequate improved seed supply from seed enterprises, insufficient credit facilities, delayed pesticide delivery, lack of sufficient farm mechanization service provider, impracticality of research outcomes to growers first hand challenges., etc..
 - It has been learnt that proactive communication, joint efforts and preparations are lacking among chain actors and support institutions in terms of making an open dialogue and transparency for a candid value adding relationships among channel participants to ultimately attain quality wheat products.
 - Lack of improved seed is found to be one of a critical farm inputs that contributes negatively to a lower productivity. Of the total wheat growers interviewed, only 20% of growers planted certified seeds in the previous production seasons obtained from seed enterprise, while the majority of respondents (67%) use local seeds recycled from their previous years' crop. The proportion of farmers who use

commercial seeds obtained from unions are also found to be small; approximately 10% of respondents received the service.

- *Of the major agricultural inputs, supply of improved seeds was given a top priority among growers. They believed that improved seeds help bring significant yield difference. This was testified by 84% of the survey respondents. On the other hand, high price of fertilizer and lack of credit facility becomes the main reason for not using a recommended level of fertilizer.*
- *Adequate storage facilities are generally missing along the value chain, thus, becomes a reason for a deterioration of grain quality.*
- *The results of the informative feedback, sample survey and an in-depth analysis to the economic actors and their contribution to the wheat value chain have reveal that, there was no meaningful interaction and relationship between growers and milling industries while doing a transaction. These have created a gap to non-value adding economic actors that simply raise or lower the price of the market offering that doesn't change the value of the wheat grain; rather complicates the supply of quality and quantity of wheat produce.*
- *Looking at the other end of the value chain, the flour factories included in this study are working under their factory capacity, nearly between 35-45 percent. Among several issues that have been documented along this line, the following bullets narrate the general situations of the manufacturing industries.*
 - *Wheat crop is deteriorating because of the different qualities of wheat mixed/blended by local assemblers, wholesale traders and other channel participants throughout the wheat value chain. These have resulted in lower extraction flour rate, with higher percentage of crop impurities entering in to the factory gate which consequently affects factory profit margins.*
 - *There is low vertical integration among wheat growers and millers factory owners*
 - *There is no transparency in terms of clarifying future strategic readiness to combat constraints of raw material and revealing company activities in general.*

- *Inadequate supply of quality and quantity wheat is the main theme of milling factories.*

Policy Interventions in the wheat value chain; how government can play a role:

- *Currently farming areas suitable for the production of wheat are located in the highland and rain fed parts of the country. These areas are mainly saturated with small holder wheat growers. On the other hand, identifying the possibility of irrigated wheat production in some parts of the country to attract large scale farming towards commercialization of wheat becomes an indispensable task on the part of the government.*
- *Government intervention in the wheat value chain can be manifested in terms of providing appropriate market information and infrastructure.*
- *Government can encourage the use of farm mechanization through granting loans to large scale growers and farmers unions as well as arranging favorable treatment of taxes and incentives to the import duties.*
- *Government can play a vital role in convincing stakeholders to create relevant and suitable market governance to mediate market interaction between growers and manufacturing industries within the wheat value chain.*

Addis Ababa Chamber of Commerce and Sectoral association may play a role:

- *In encouraging and supporting members to actively engaged in a meaningful value adding activities within the value chain.*
- *As a facilitator to create conducive governance structure as well as interventionist for a foreseeable valid market interaction between growers and other critical chain actors.*
- *As capacity builder in conducting specific wheat value chain analysis (ex, economic efficiency analysis, top and bottom of value chain analysis etc.), for an in-depth understanding how value is created and where value is destroyed.*
- *As a collaborator with other stakeholders to initiate the task of wheat product standardization and avoidance of market fragmentation which is going to be in favor value adding parties and end consumers.*

On the basis of aforementioned discussions and lessons documented from previous and ongoing interventions by the government and other stakeholders, the following recommendations could be forwarded to be considered by all concerned for future program design, implementation and policy interventions:

In the long run and, to meet the growing demand of manufacturing industries, increasing yield potential of the wheat crop with its high quality parameter would be a solution. And, to achieve this;

I. Mechanization and research inclusiveness; issues for higher yield and productivity.

- + An upcoming stakeholder involvement as well as research endeavor to boost productivity should divert its focus into adoption of mechanization in farmer's fields.*
- + Growers need to acquire small and appropriate, multipurpose farm machinery to boost their productivity. Farm machineries could be acquired in the form of farmers cluster, through cooperatives and unions, by way of localization, or on the basis of voluntary groupings and family ties etc.,*
- + Research intervention to improve productivity should carefully consider farmers specific challenges and constraints under their own field conditions. This is to mean that agricultural researched technologies and varieties should be developed by considering attributes related to growers and processors requirements.*
- + A realistic, future down to the earth support in yield improvement strategy will bring growers into the wheat value chain industry at large, with the highest share of contribution in the process of value creation.*

II. Patching a missing necessary for wheat value addition.

- + Value addition is not only limited to the close relationships between farmers and milling industries, but also other economic actors in the supply chain including business partners/stakeholders and ultimate consumers should come together to co-produce value.*

- ✚ *High-quality interaction among channel actors helps to explore new sources of competitive advantage and unique value addition experiences*

III. Making intermediate chain actors/traders/ play a role in value addition

- ✚ *More and more opportunities for value creation on the wheat product are in the hands of growers and grain milling industries. For this reason, unless the role of relevant channel actors (trader/brokers) have all been transformed into a new kind of value offering within the system, then, their role is going more of sharing the same profit margin by competing with each other. Hence, there must be a direct and new way of making relationships between producers and consumers in the wheat value chain industry by avoiding the middle channel actors that don't create meaningful value.*

IV. Leadership adds value; making the milling industries play active role

- ✚ *The researcher believes that there is practical reasons to believe leaders can create value through improving organizational capabilities, harnessing individual talents and introducing best human resource practices within companies. Additionally, the study recommends that manufacturing industries must be aware and be actively involved through focus and concern to improve organizational leadership with a special emphasis to supply chain involvement.*

V. Value chain governance issues; to mediate market interactions

- ✚ *New governance functions and capabilities in the value chain can create efficient and high quality interactions amongst wheat producers and milling industries.*
- ✚ *To improve the value addition process channel participants relationships must be built on an open dialogue, transparency, accessibility, and exchanging unique experiences to each other. The goal of the governance issues will be to mediate an interaction and create mutually beneficial results among wheat grower, milling industries and consumers. This is the way how value can be created in the future*

VI. Avoiding asymmetry of market information within channel actors: using ICT

✚ *Information Communication Technology (ICT) plays key roles to enhance the performance of wheat value chain. Since knowledge and information are the major drivers of economic endeavors its application has been becoming critical for social and economic transformation. This problem creates the gap of information among key participants, mainly, buyers in one end and sellers on the other side.*

1. INTRODUCTION

1.1. Background

Ethiopia is one of the largest grain producers in Africa, and the second largest wheat producer in Sub-Saharan Africa, next to South Africa. Wheat production in Sub-Saharan Africa is at 10 to 25% of its potential and the region could easily grow more to improve food security. Farmers in Sub-Saharan Africa produce 44% of the wheat consumed locally and import the rest from international markets, making the region highly vulnerable to global market and supply shocks (AC, 2009).

Wheat plays a leading role in both the diet and the economy of Ethiopia. According to research conducted by IFPRI for the Ethiopian Agricultural Transformation Agency (ATA), wheat is the fourth most widely grown crop in the country (after teff, maize, and sorghum) and ranks fourth (tied with teff) in terms of the gross value of production. In addition, wheat and wheat products make up 14 percent of the country's total caloric intake. Ethiopia also imports a significant amount of wheat for domestic consumption – between 25 and 35 percent.

In Ethiopia, both the bread and durum wheat are widely cultivated in the highlands of the country largely in the areas like South East, Central and North West parts. According to MoARD (2005), it is estimated that 1.4 million hectare of land is covered with wheat and more than 2.18 million tons are produced annually. In terms of area cultivated and annual production, wheat is the third most important cereal crop in Ethiopia following maize and teff (CSA, 2012). Existing literatures have also shown that the trend of wheat production and areas covered under wheat has been increasing from time to time.

On the other end, the country is experiencing a rapidly growing rate of urbanization and increased expansion of existing as well as newly emerging food processing industries that have contributed for increased demand for durum wheat products such as macaroni and spaghetti in the local market in Ethiopia.

The Ethiopian Commodity Exchange reported that farm households consume about 60% of wheat produced; 20% is sold; and the remainder is used for seed, in-kind payment for labor and animal feed. As indicated above the gap between domestic wheat production and consumption has grown significantly which resulted in higher wheat price. Hence, commercial and subsidized wheat imports have become an option to offset the shortfall in domestic production as well as to stabilize the exorbitant increase in wheat price. For example, in this year 2015/16, EGTE imported 750,000 MT of wheat mainly from Russia and Argentina and around 300,000 MT through food aid mainly from the United States (CSA, 2014).

The flour mills are able to obtain required wheat from the Ethiopia Grain Trade Enterprise (EGTE), which controls all commercial wheat imports and makes wheat available to flour mills at a government subsidized rate (CSA, 2014). These wheat imports account for roughly thirty-three percent of the wheat market. The flour mills get the remainder of the wheat supply from the local market. In this fiscal year, the wheat price in the local market is about forty two percent higher than EGTE wheat prices and its quality is much better than imported wheat (EMA, 2016).

Further to the above discussion there are several reasons to be optimistic about wheat crops are offering a very promising value chain commodity, and seem suitable for promotion. There is a promising potential to involve in value addition of the stored grains particularly wheat, to meet the ever growing national market demand for industrial processors and consumers. It is also found to be one of the potential areas that both the local as well as foreign entrepreneurs can further invest in this sub sector.

However, full information about the overall potential of this subsector in general and comparative advantages and existing bottlenecks/constraints across the value chain did not been well studied and documented for better understanding of the wheat value chain and

assess possible improvement strategies to upgrade durum wheat value chain for the benefit of smallholder farmers, existing and new processors, traders, and other durum wheat value chain actors.

In view of this, the Addis Ababa Chamber of Commerce and Sectoral Association (AACCSA) has commissioned Afro Universal Consult & General Trading P.L.C to undertake the Value Chain Study on Wheat Processing Industries in Ethiopia. The study is part of the project entitled “ Strengthening The Private Sector in Ethiopia”, which is financed by the Royal Danish Embassy and implemented by AACCSA with technical support from the Confederation of Danish Industries (DI).

The overall objective of the assignment was to undertake an in depth value chain analysis to generate sufficient information on the main opportunities and bottlenecks in the value chains of Wheat industry.

Specifically the objectives of the wheat value chain analysis were:

- (1) To collect information regarding Wheat value chain in general.
- (2) To undertake analysis of the major problems and constraints that the Wheat related food industry and business operators are facing in Ethiopia with particular focus on those who are based in Addis Ababa.
- (3) To put recommendations in addressing the identified issues for AACCSA and other actors to act upon

1.2. Organization of the report

The report has been organized to have five sections: Section one presents the introduction session that includes background information; Section two briefly explains the methodological approaches employed in the study. Section three discusses about the overview of the wheat industry in Ethiopia; Section four deals about the main findings of the study and corresponding discussions and finally section five deals with key conclusions and recommendations for future interventions by all concerned stakeholders and actors.

2. STUDY METHODOLOGY

2.1. Data Type and Sources

The results of this study used quantitative and qualitative data generated from different primary and secondary sources. Published and unpublished previous and ongoing study documents; consultation with resource persons and rapid assessments has been used as sources of information for this study. Relevant government publications such as The Growth and Transformation Plan (GTP) of the Government of Ethiopia, Central Statistical Agency (CSA) annual reports and other policy documents and previous researches conducted in the area were also reviewed as necessary.

The primary data are mainly collected through interviewer administered questionnaire, key informant interview and focused group discussions.

2.2. Study Populations

The study population for this particular study includes wheat grower and milling industries.

The target population for this study area includes wheat growers in the scale of small holder land holdings, which are located in Oromia region, Arsi zone, Digelu Tiyo and Hitosa Woredas, located 160 and 190 Km's respectively south of Addis Abeba. These areas are known for their wheat production in the country. Wheat growers contacted for the survey were individual small holder farmers working on their own land. Others include; primary cooperatives, union association and traders at different levels ranging from farmer traders, local assemblers as well as regional wholesale traders were contacted, following the corridors of the wheat supply chain route.

A total of 51 wheat growers were included in this study using a multistage purposive sampling technique. A semi-structured interview was also conducted to elicit some information from 10 sample size traders.

On the other end of the wheat value chain, a total of 200 flour mill industries that are registered membership under Ethiopian Millers Association were targeted as a sample population for the study. As a result the semi-structured interview and survey questionnaire

were administered and data were collected and analyzed on 30 of the respondents. During this data collection procedure a purposive sampling method (Leedy and Ormord, 2006) was used to balance the participation of the bread, pasta and macaroni processors.

2.3. Data Collection , Approaches and Method

The participation and a need to obtain informative feedback from farmers and traders were well thought from the design stage of this study. The dilemma to participate in the study was eliminated through clarification of the study's purpose. Then cooperation was later on assured to continue the focus group discussion and sample survey questionnaire with aid of regional extension workers and development agents.

Regarding local and wholesale trader respondents, independent interview schedule questionnaire was designed to collect data. In this study area, the interview schedule questionnaire guideline was written up formally in a way tailored to the existing market situation, and lists further revised to make sure that important issues had not been missed. Eventually, the survey was made by interviewing randomly selected traders in their market place and where the traders were located.

On the other hand, participants from the flour milling industry targeting around Addis Ababa were accessed in their respective factories and offices, and an overview of the background, purpose, and the benefits of wheat value chain study was clarified, and concurrently voluntary participation was assured to proceed with their participation.

In a nutshell, respondents interviewed/survey provided an informative feed back to the study that have an important bearing to the wheat value chain study.

The methods applied and, important themes identified were briefly summarized below.

Table 1 Summary, Research Participants' Main theme identified

Data collection methods	Research participants and main themes identified			
	Farmers/growers	processors	Cooperative and unions	Government offices
survey/Interview/focus group discussion	Adoption of inputs, Quality of wheat produced, Mechanization use, Research benefits, Market linkage, Land degradation, Crop rotation, Wheat price, Credit service, Value addition	Milling capacity, Quality and quantity of wheat supply, Capacity utilization, Supply chain r/ship, Product range, Competition, Resource management, Value addition Leadership	Storage facility, Finance availability, Market linkage, Role in wheat value chain, Hoarding, Mismanagement, Market linkage Value addition	Wheat policy, GTP. plan, market linkage and intervention
Key informants interview approach	--	--	---	✓

2.4. Data Analysis and the Conceptual Framework

Data analysis was done using descriptive statistic and based on the conventional value chain methodology.

The following steps of value chain analysis were applied in this study:

- Current wheat value chain map was sketched,
- Characteristics and function of wheat value chain actors including primary and supporter actors were identified and discussed,
- wheat market channels were identified,
- Finally, chains which need upgrading and governance roles were identified.

Following the above procedure, the main aspects of wheat value chain analysis was done by applying some quantitative and qualitative analysis. First, an initial map was drawn which depicts the structure and flow of the chain in logical clusters. This exercise was carried out in qualitative and quantitative terms through graphs presenting the various actors of the chain, their linkages and all operations of the chain from pre-production (supply of inputs) to consumption.

After having developed the general conceptual map of the value chain, the next step was analyzing the chain's performance and benefit share of actors.

3. OVERVIEW OF THE WHEAT SUB-SECTOR IN ETHIOPIA

3.1. Wheat Crop and the Food-Based Industries

Wheat is one of the most important cereal crops in terms of area and production in the world. It was grown on more than 216 million hectare (ha) of land with a total production of 651 million tons of grain in 2010 (FAO, 2012). In Ethiopia, wheat covers an area of 1.6million ha with a total production of 3.9 million tons annually. The average yield in 2013 production season was 2.4 t/ha which is approximately 70% and 30% below Egypt's and world average respectively (FAOSTAT, 2013).

From the domestic wheat production attained around 58.04% is utilized for household consumption, 19.59% for seed requirement, and 20.13% sold for domestic market usages (CSA, 2012). Despite an increment in production and marketable volume, the current level of wheat marketed is still low and insufficient to meet the domestic consumption needs for the growing food processing industries. To stabilize the demand gap the government of Ethiopia has been importing subsidized wheat in the last decade at an average of 9% annually while production was still increasing at an average of 7% (ATA, 2014).

Wheat is mostly grown in the highland and mid highland areas of the country. Among nine regions of the country, Oromia and Amhara produces 59% and 27% of the country's total wheat

production respectively; with an additional nine percent coming from the Southern Nations, Nationalities, and Peoples Region (SNNPR). Nearly around 98% of cereals are produced by small holder farmer, while 2% is produced by commercial farms mainly for seed multiplication purpose. The average farm size holding is less than one hectare (USAID, 2016)

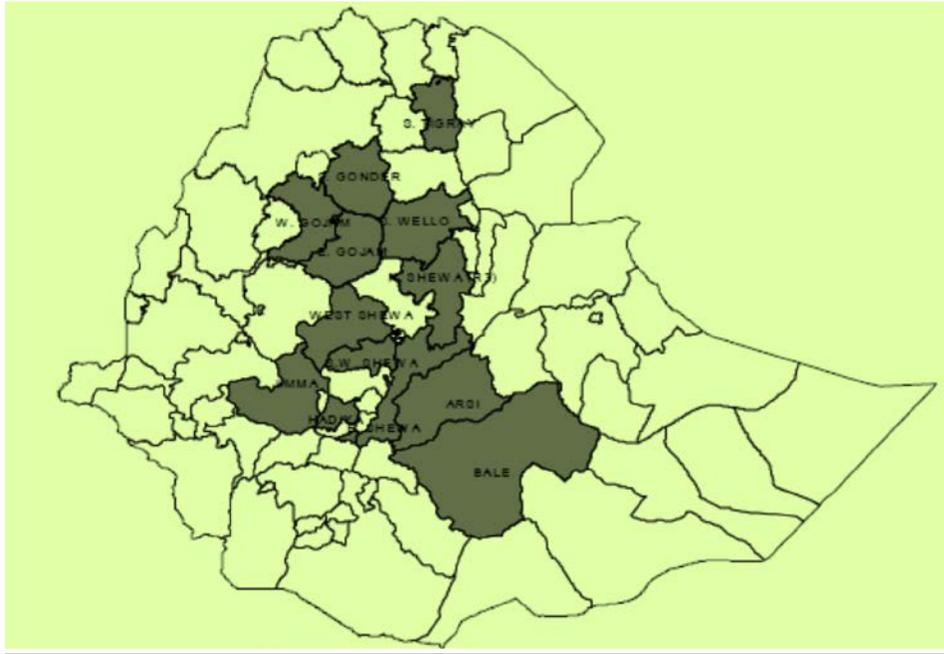


Figure 1 Wheat growing regions of Ethiopia (source: USAID 2016)

There are two varieties of wheat grown in Ethiopia namely; bread wheat accounting for 60% of production, and durum wheat, accounting for the remaining 40% (Bergh et al., 2012). Both are widely cultivated in the highlands of the country largely in the areas of South East, Central and North West parts. In terms of area cultivated and annual production wheat is the third most important cereal crop in Ethiopia following maize and *Teff*(CSA, 2012).

The two species of wheat crop, bread wheat (*Triticumaestivum L*) and durum wheat (*Triticumturgidum*) are both worth mentioning for the purpose of the value chain and wheat industry study in Ethiopia. Although both crop species are highly important for agro-processing industries, bread wheat variety has gained much popularity over durum wheat due to the attention given by many researchers to improve its genetic potential as well as several other studies made to adopt suitable agronomic practices for higher crop productivity. In the years of

research trial made on bread wheat, positive results has enhanced its diversified usages and suitability as a raw material in the agro-processing industries.

On the other hand, durum wheat variety known for its hardness, protein, and intense characteristics has been cultivated in Ethiopia for thousands of years and used to pre-dominate the Ethiopian wheat production systems. This wheat crop species which was mainly utilized for the preparation of local traditional recipe was gradually replaced by the common bread wheat species.

But, quite recently efforts were being hastened by different responsible bodies for the intensification of quality durum wheat, improved seed production and distribution, as well as seed multiplication to aggressively expand durum wheat cultivated area coverage (CSA, 2004). There is a growing demand for durum wheat, its unique grain quality attributes is always of highest preference within the food-based industries.

in view of the current rapidly growing rate of urbanization, coupled with an increased expansion of the existing as well as newly emerging food processing industries, both bread and durum wheat species will be point of focus as a raw material products that are highly demanded to become an important part of daily diet in the urban and rural areas of Ethiopia.

3.2. Opportunities for Enhanced Economic Development

Wheat is an important staple food in the diets of many Ethiopians, providing an estimated 12% to the daily per capita caloric intake for the country's over 90 million population (FAO, 2015). Not only is wheat one of the most widely produced cereal in the country—accounting for 20% of the domestic cereal production in 2013/14—it is also the most important staple food crop that the government imports from abroad.

The government of Ethiopia placed emphasis on improving the living standard of its people through an intensive agricultural extension program by promoting modern farm technologies. The GOE's ambitious five-year Growth and Transformation Plan (GTP), which started in 2010 aims to double grain production by 2015. This opportunity and a plan laid out gives wheat grain a top priority among the three cereals selected to receive a unique treatment great to achieving self-sufficiency in food production.

Following this commitment, wheat production per unit area has increased significantly. Data from the Central Statistics Agency (CSA) indicate that the observed increase in wheat production over the last ten years can be attributed both to expansion of production area and major yield per hectare improvements. Between 1995/96 and 2013/2013 wheat production area increased from 0.8million ha to 1.6million ha and yield increment was from 1.2t/ha to 2.1t/ha (ATA, 2014).

This significant increase in wheat production volume and productivity per unit area over the decades, high population growth, increased migration to the cities for urbanization, and changes in the life style has stimulated private investors to undertake long-term investment in agribusiness and agro-processing industries.

Following the improvement in production and increased consumption, the scale and impact of private sector investment, which include the investment made by small holder farmer themselves as well as those made by large-scale domestic agribusiness investors has increased all over the country. Quite recently large grain industry exhibits a greater degree of concentration around Addis Ababa. There are 200 registered milling industry member factories under the Ethiopian Millers Association (EMA) with a diversified capacity, and nearly over 100 large and small grain miller industries, and bakers scattered throughout the country.

This indicates wheat production and marketing becomes the means of livelihood for millions of small holder households and it constitutes the single largest sub-sector in economy. Nearly 20% of the production is marketed annually which makes it 2nd to Teff. And, the contribution of wheat crop to national income was so large about 64% growth in total volume production in less than a decade (2006-2013) was achieved because of the wheat production sector (CSA, 2014).

Table 2 Sectoral Distribution of GDP in 2014(In %)

Sector	Ethiopia	Kenya	Tanzania	South Africa	Egypt
1. Agriculture	41.4	29.9	26.5	2.4	14.3
2. Industry	15.6	19.5	25.6	30.3	39.6
3. Service	43	50.6	47.9	67.3	46.1
Total	100	100	100	100	100

Source: World Fact Book, 2014

The successes of increased wheat productivity and higher consumption in the cities have attracted many investors into the wheat-bread value chain by encouraging significant investment in the agro-processing industries. However, many of the manufacturing sub-sector activities are faced with some problems and constrained as a result of ineffective value chain approaches of the participants which in turn led to lengthened investment returns and below capacity factory performances.

An efficient, integrated, and responsive value chain mechanism is of critical importance for optimal allocation of resources in agriculture and in stimulating farmers to increase their output and benefits all participants of the system. A well-functioning value chain marketing system is not limited to stimulation but it also increases production and consumption by seeking additional output.

This created an imperative desire to make an assessment to the wheat value chain paradox and its consequences for wheat grain millers found around Addis Ababa. This study is, then, sought after and designed to explore the prevailing constraints and desirable changes on the wheat value chain issue to proactively contribute to the value chain development. It will further assist in configuring improved relationship among different economic actors and devises new value creation ways that can benefit smallholder farmers/growers, milling industries/processors, traders, and ultimate consumers.

3.3. The Flour Milling Industry

Currently, there are around 300 flour mills in Ethiopia with a total of 3.7 million tons of milling capacity per year. The flour mills are able to obtain the required wheat from the Ethiopia Grain Trade Enterprise (EGTE), which controls all commercial wheat imports and makes wheat available to flour mills at a government subsidized rate (CSA, 2014).

These wheat imports account for roughly thirty-three percent of the wheat market. The flour mills get the remainder of the wheat supply from the local market. In current fiscal year, the wheat price in the local market is about forty two percent higher than EGTE wheat prices and its quality is much better than imported wheat (EMA, 2016).

3.4. Trends in wheat Trade

As indicated above the gap between domestic wheat production and consumption has grown significantly which resulted in higher wheat price. Hence, commercial and subsidized wheat imports have become an option to offset the shortfall in domestic production as well as to stabilize the exorbitant increase in wheat price.

Since 2003/04 the Government of Ethiopia (GOE) has started importing wheat through a government institution, Ethiopia Grain Trade Enterprise (EGTE), at a subsidized price that helped to stabilize the domestic market price. This costly effort of the government is going to continue in to the foreseeable future until self-sufficiency in wheat production is attained through a coordinated research efforts and the commitment of wheat growers to score a higher productivity per unit area.

Currently, the Ethiopian Grain Trade Enterprise (EGTE) provides wheat grain to the flour mills, then with a predetermined extraction percentage and marketing outlet and channel it is distributed to ultimate consumers.

3.5. Existing Government Policy and the Wheat supply

The Government of Ethiopia's policy in the Wheat sector has been shaped by the underlying desire of achieving higher self-sufficiency in this staple food product. Consequently, a series

support plan has been laid out for its execution. Providing subsidized wheat which is a central aspect of social security has been started since the year 2004.

The Ministry of Trade (MOT) controls the supply and distribution of imported wheat into a predetermined marketing outlet through EGTE. Most of the grains milling industry in the country are, then, provided with subsidized wheat. The price of this imported grain is Birr 550 per quintal excluding transport cost while flour selling price costs Birr 796.20 per quintal at 70% flour extraction. Both selling and buying price is capped by the MOT.

The involvement of Ethiopian government in its wheat policy further goes beyond subsidized import of wheat in to supporting research institution to come up with new results to increased productivity, support small holders in subsidizing Input and output prices, public investment in supporting primary unions and cooperatives, as well as investment in improved grain storage in many parts of the country.

3.6. Information Communication Technology

The Agricultural Transformation Agenda in GTP II comprises Information Communication Technology (ICT) as a means to augment implementation capacity in agriculture sector in Ethiopia. Information Communication Technology (ICT) plays key roles to enhance the performance of wheat value chain. Since knowledge and information are the major drivers of economic endeavors, its application has been becoming critical for social and economic transformation. In the context of Ethiopian Agricultural sector the ICT lacks infrastructure for internet application on one end, that is, at farm level. This problem creates the gap of information among key participants, mainly, buyers in one end and sellers at the other end.

During our survey we observed that greater gap of information among value chain actors at both ends, namely, farmers and manufactures of wheat products.

In order to solve this problem it would be advisable to increase the penetration rate of ICT for application for internet use so that farmers can make informed decisions. In connection with this effort, extension staff can play critical roles to the transformation process by transferring technology, support learning, assist farmers in problem-solving, and enable farmers to become

more aware of market situations and requirements. Of course, there are challenges to speed up the penetration of internet use for farms such as the rural setting, infrastructure and capacity problems, and nature of local communities including their ability to use the technology to access information for their work.

4. ANALYSIS OF THE WHEAT INDUSTRY VALUE CHAIN, FINDINGS OF THE STUDY

This chapter discusses the findings of the study which sought to examine the wheat value chain from the growers' as well as the flour milling industries point of view. However, other channel participants or intermediary was also discussed in the course of the investigation.

4.1. Value Chain Map of the Wheat Industry

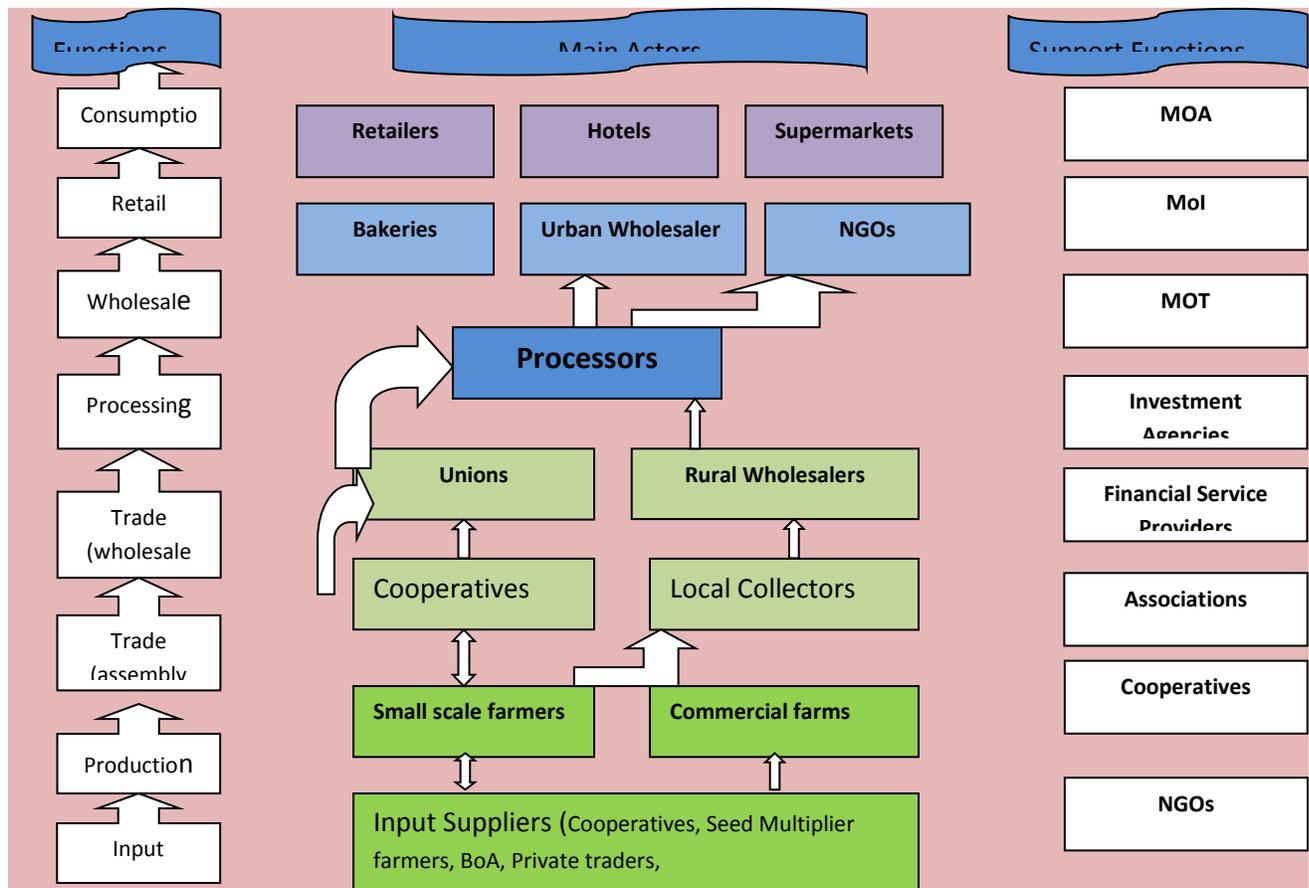


Figure 2 Value Chain Map of Wheat (Source- Current Research, 2016)

Value chain economic actors

Producers

Wheat producers under Ethiopian situation include smallholders and a few state owned commercial seed farms. There are some 4.2 million smallholders, two seed multiplication farms (in Arsi and Bale), and a few private commercial farms that produce and supply wheat. The major producers and suppliers, however, are smallholder farmers, accounting for more than 89% of the market share.

Smallholder wheat producers have different market outlets for their produce, depending on their proximity to the market and prevailing market and price conditions. At times they directly sell to rural consumers and assemblers, or to primary cooperative in their areas and unions, or to grain wholesalers. It is estimated that about 30% of farmers' produce is directly sold to consumers, 25% to assemblers, 20% to cooperative unions and the rest 25% to grain wholesalers (CSA, 2013)

Assemblers/Local collectors

Assemblers are traders or farmer/part-time traders who collect grain from small rural markets. They play a crucial role, particularly in collecting and transporting grain from inaccessible or distant markets. Their number is not documented, but it is estimated that they handle about 78,000 metric tons of wheat annually, which they sell to consumers directly (40%) or to grain wholesalers (60%). The value adding activities of collectors include; buying, assembling and selling to rural wholesalers. Sales decision by assemblers is influenced by the size of the local market demand and the overall wheat and cereal supply situation.

Grain Wholesalers

Grain wholesalers include; the Ethiopian Grain Trade Enterprise (EGTE), private companies, and the regional grain merchants in both surplus and deficit areas. Together, these actors handle about 281,982 metric tons or 48.5% of the total wheat supply to the domestic market. In some years, however, when the domestic supply of cereals decreases, the Government imports

substantial quantities and distributes it to food processors and the public. Under normal market circumstances the sources of the wholesaler wheat purchase are smallholders that constitute about 64%, rural assemblers 16%, cooperative unions 15% and state and private commercial farms 5%.

Currently the most active participants in the domestic wheat market are the regional merchants who purchase wheat from the surplus growing areas and distribute to deficit areas and major consumption centers directly or indirectly through brokers.

Processors

It has been discussed wheat as the most important crop utilized as an industrial raw material and input for food-based factories. Wheat grain millers using wheat as a raw material include factories with large and medium capacities.

The major suppliers of wheat to the mills include grain wholesalers, primary cooperatives and unions, which supply 60% and 17% of food processors annual wheat purchase. Food processors normally operate below their capacity. For example, the capacity utilization of flour mills, bakeries and manufacturers of pasta and macaroni operate at 36%, 67% and 58% respectively of their capacity in 2006/07 (CSA, 2008).

Wholesalers for processed flour

Wholesalers of processed wheat, especially wheat flour and spaghetti products, obtain their supplies from the domestic flour mills and supply the same to retailers and bakeries. They mostly operate in large towns.

Retailers

Wheat and wheat product retailers include grain retailers and retailers of processed flour, spaghetti and bakery products. About 53% (CSA, 2014) of the wheat is supplied to consumers in the form of flour, spaghetti and bakery; while the rest is distributed in the form of whole grain

which is then further processed by the consumers. Retailers include small shops, bakeries, kiosks, restaurants, cafes, and supermarkets.

Consumers

Most consumers buy wheat products from particular outlets and retail shops. The main reason to buy and consume wheat products depends on market outlet which is convenience to buyers. With regards marketing other wheat products like; spaghetti and macaroni, survey results indicated that majority of consumers prefer to buy domestically produced spaghetti and macaroni, because imported spaghetti and macaroni have 4-6 Birr price higher than domestic one. However expensive it may be imported spaghetti and macaroni have still a large number of consumers in standard hotels and restaurants around Addis Ababa. The reason for a growing market demand to the imported wheat products indicated that some customers want to sacrifice quality for higher prices.

During a series of consultations particularly with consumers and processors, it was admitted that the quality of pasta and biscuit compared to the international standard is low mainly because of the raw material supply. Some of the major problems in pasta production can be cited shortage of durum wheat, marketing problem of wheat, and absence of quality and standard control.

Generally, regardless of its potential opportunities and climatic suitability for wheat growing; Ethiopia remains to produce poor quality pasta that is already forcing households in the major cities to consume imported pasta.

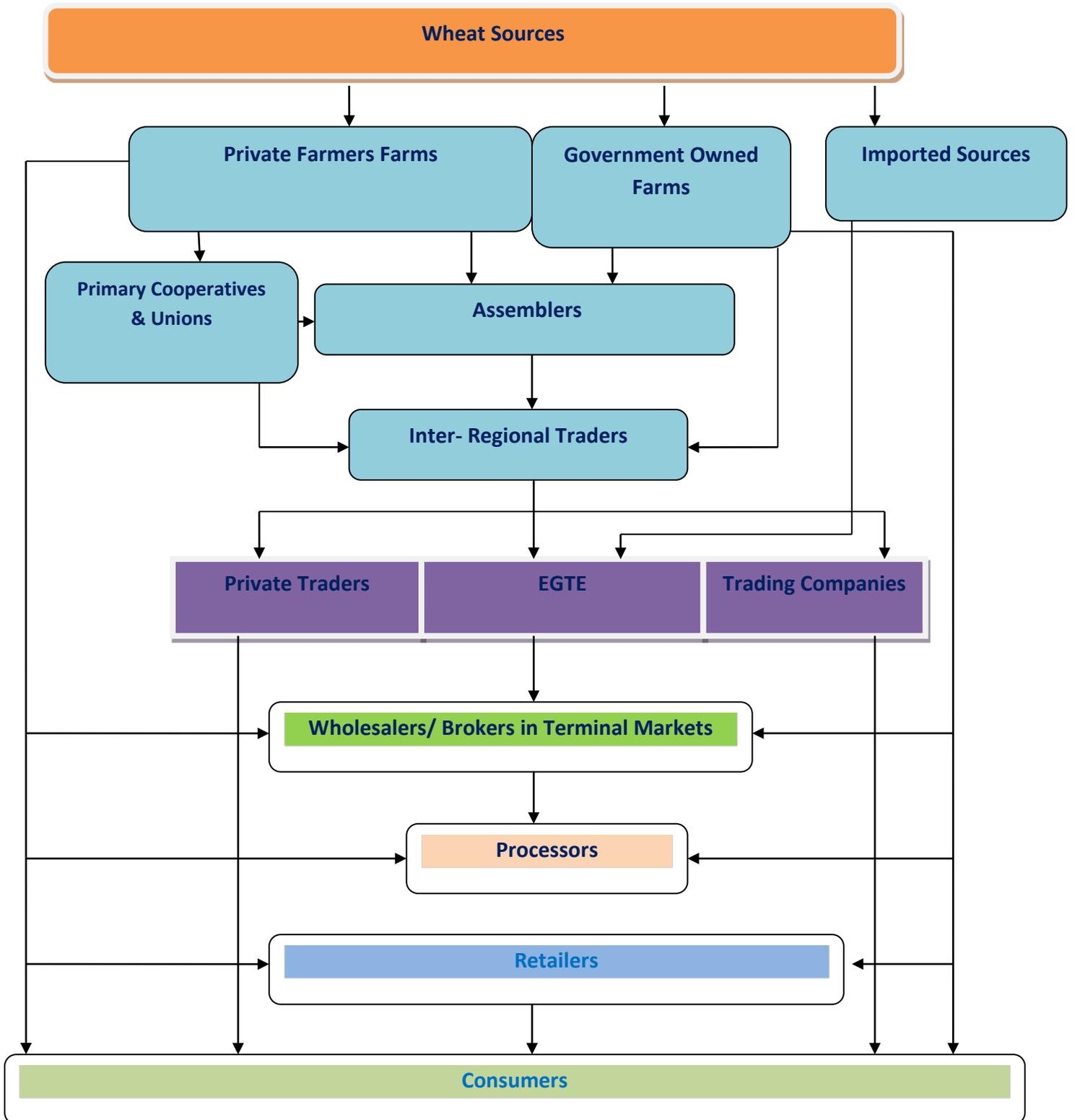


Figure 3: Wheat value chain map,(Source: modified by FAO consultant, 2013)

4.2. Farm Survey Results and Discussions

Descriptive Statistics

The sample population of wheat producer respondents handled during the survey was 51. Out of the total respondents 95% were male while 5% were female headed growers.

All respondents were married.

Table 3 Growers' Demographic Characteristics

Variables/Sex of growers	Number (N=51)	Percent
Male	46	90%
Female	5	9.8%
Marital status		
✓ Single	-	-
✓ Married	51%	100%-
✓ Widowed	-	

Also, from our discussion with some wheat growers we come to understand that, many of the respondents have been engaged in farming activities in their life time, and are well informed about wheat crop growing practices, and constraints with reference to their respective farm plots. And farming was considered to be their main occupation and source for family livelihood.

Access to institutions

During a group discussion growers have clarified their easy access to cooperative services, credit facilities to buy agricultural inputs, access to market information and extension services as well as several other supports. Despite the many promises and activities undergone to support growers to their farming challenges, they still complain on the quality and timely support to their problems from different service providers; including lack of support for improved seeds, credit facilities and delaying pesticide delivery.

Wheat grower's membership with cooperatives

Most of the wheat growers in the survey area (92%) are members of farmers' primary cooperatives and unions. They claim membership to cooperatives and unions to become beneficiaries from the advantages gained from those institutions as well they understand that this organizations has a governments support to facilitate easy access to each farmer for any kind of help and support.

Farmers' perception with regards to industrial wheat quality requirement

During focus group discussion, it has become evident that nearly 85% of respondent growers have sufficient information about key variety traits including bread baking quality standards that are critically required within the wheat milling processing industries.

Nevertheless, a decision to plant farmer's own fields with wheat seeds for the season was not carefully thought of in favor of potential customers (flour mill factories) bread baking quality preference. Rather it is dependent on farmers' will and perception, whether there is an easy access to get credit to buy the required seeds, and access or availability of seed from last year's harvest, or simply self-initiated decision to plant an adaptable variety to farmer's specific growing environments.

The observed gap during the survey should hint milling industries, in particular, to make a direct intervention to build a close relationship and convince growers to allocate larger farm area for a quality bread–baking wheat variety. This is a proactive thinking on the side of companies and a realistic preparation to get wheat grain raw material for the milling factory requirement

Wheat farm cultivation and planting methods

From the survey the researcher was aware of the fact that the vast majority of farming and planting activities for growing wheat were carried out using labor which is followed by a pair of oxen power to cover the seeds with the soil. And, from the sample survey we found out that there was no any house hold heads without a pair of oxen to till and cultivate the lands.

And, this shows that wheat growers in the survey area are predominately dependent for the majority of their agricultural activity (Plowing, tilling, planting) on family labor and animal powers.

Input utilization for wheat crop --- Fertilizer

A variety of agricultural input application is one of the most important farming practices that are used by wheat growers in the study area. Moreover, proper application and rate of recommended input is a precursor to obtain quality and quantity wheat product. In this regard, there was no any single surveyed wheat grower that doesn't make use of an available agricultural input.

But, relevant knowledge for a significant yield increase with regards to specific input usage including; application technique, dosage, time and stage of a crop, amount and type of fertilizer, soil crop nutrient requirement etc., are far from vividly understood by many small holder farmers and wheat growers.

Input utilization- Improved Bread wheat seed

Seed is a basic requirement and one of the most precious resources in any crop production. The use of improved wheat seed varieties is no doubt part of the solution towards increased and sustainable wheat production to meet the ever increasing demand of the food processing industries. About 95% sample respondents from the survey have indicated higher interest for an improved seed source. This implies that wheat producers generally have preference for improved seed varieties compared to local seed to attain higher yield productivity per unit area.

What type of improved seeds did you use in the previous production season to cover your wheat farm?

Table 4 Proportion Respondents who uses improved inputs

No	Types of seeds	Number (N=51)	Percentage
1	Certified seeds from seed enterprise	10	19.6%
2	Local seeds (recycling own seeds)	35	68.60%
3	Commercial seeds from unions	5	9.8%
4	Basic seed	1	1.9%

Table 5 which agricultural inputs are you lacking critically to improve your productivity?

No	Variables	Number (N=51)	Prioritize
1	Shortage of improved seeds	43	1 st
2	Supplementary Irrigation equipment	25	2 nd
3	Shortage of fertilizers	25	2 nd
4	Agricultural machineries/planter	23	3 rd
5	Others, specify	---	---

Source: survey result, 2016

The above table (Table.5) for respondents shows that, although wheat growers in the survey area have still limited access to improved seeds and fertilizers, growers want more of quality and quantity supply of critical inputs including, improved wheat seeds varieties, fertilizers and pesticides.

This was also indicated during focus group discussions, that some farmers are raising issues about using recycled seeds from the previous crop to compensate a shortfall of adequate supply in improved seeds. Additionally, respondents indicate about a new demand for easy planter technologies and supplementary easy to use irrigation facilities to help them boost their wheat productivity.

Focus group discussions also indicated that, high price of fertilizer and lack of credit facility becomes a main reason for avoiding and using a recommended rate of fertilizer. The major sources of fertilizer for farmers are cooperatives, unions and traders in local markets. Most of

the wheat growers indicated that they access their fertilizer requirement through cooperatives; only a few farmers found out to purchase their fertilizer requirement from traders in the local markets.

Production and productivity

The main crop grown in the survey area was bread wheat, with some leguminous, maize and vegetable and root crops intermingled as a rotation crops. The average size of land a farmer owns under the study area is approximately 1.75 hectare per household. The minimum and maximum hectare of wheat land cultivated by the sample house hold was estimated to be 1 ha and 15 ha respectively. There seems to be slightly higher land size holdings in the study area.

The size of the land allocated by many house hold to be planted for any crop year was predominately decided to be a wheat grain. This is because of wheat crops suitability to harvesting using mechanization, farmers routine and accumulated knowledge to grow and make it so productive relative to other crops, and not least the relative market return obtained from producing and selling wheat grain.

Wheat Crop Harvesting

The average wheat yield obtained in the survey areas in the year 2007/2008 production season was 33 quintals per hectare. However, during a group discussion a few exceptional farmers indicated productivity in the range of 46-50 quintals per hectare. Generally, the survey area was considered to be one of the wheat belts of Arsi Zone with higher productivity recorded history.

Wheat crop harvesting and threshing in the study area is customarily and predominately done using combine harvesters, and, almost all sample respondents reported to have used combine harvesters to collect their crops, through renting from local private mechanization service providers. Harvesting cost is said to be the single and only machinery cost to be recorded for wheat growers' financial expenses and recording.

Distorted Information

Due to unfortunate gap and forsaken relationship between wheat growers and manufacturing industries, information on wheat pricing, quality, and quantity has been distorted. Farmers in

most of cases have difficulty accessing manufacturers directly; in return manufacturers were also unable to get and know farmers for direct and genuine information and relationship on wheat supply.

4.3. Value Chain and the Marketing Channel

Intermediate economic/actors (traders) discussion

Wheat crop has a bit higher complexes numbers of marketing channels than any other cereal crops. It passes through different channels in its way to reach the ultimate consumers. The volume of wheat flown in to the market and end receiver within the channels significantly differs for each channel, and beyond the scope of this study to determine the amount passing through each channel.

However, an identified and possible wheat marketing channels looks like as listed below.

Channel 1 producers-consumer

Channel 2 producers- cooperative/union-processor-consumers

Channel 3 Producer-cooperatives/union-processor-institutions

Channel 4 producers-cooperative/union-processor- urban wholesaler-hotel/restaurant

Channel 5 producers-cooperative/union-processor-urban wholesaler-supermarket-consumers

Channel 6 producers-assembler-rural wholesaler-processor-urban wholesalers-hotels/restaurants

Channel 7 producers-assemblers-rural wholesalers- processor -urban wholesaler-supermarket-consumer

Channel 8 producers-assemblers-rural wholesaler-processor-urban wholesaler retailers-consumers

Value chain governance

From the above marketing channel review we can understand that the dominant value chain actors play facilitation roles. They determine the flow of commodities and level of prices. In effect they govern the value chain and most other chain actors subscribe to the rules set in the marketing process.

During discussions on the marketing channel activity, it indicates that the whole wheat market seems to be governed by processors. Processors fix price and usually have strict wheat quality standards depending on the hardness and softness of the wheat crops and expect their suppliers to meet these standards.

Producers are not governing the value chain. Hence, they are price takers. There is no significant vertical linkage between producers and other actors along the value chain. However, there is horizontal linkage between producers with producers, cooperatives with union, local traders with wholesale traders. Overall, the governance of the wheat crop value chain is buyer driven with minimum trust between various actors. To date, due to the government subsidy and import of wheat crop price of wheat is regulated with government policy interventions hence, the wheat market is affected by price control.

One of the reasons behind the inefficiency of the value chain is inactive governance that should be responsible to carry out leadership roles and facilitating smooth business atmosphere among stakeholders. Manufacturers lack confidence to directly deal with suppliers of wheat or farmers as there is almost no system of governance in which contracting parties are responsible for any defeats that will be emerging during the course of actions. In most of the reply obtained from manufacturing interviewee we understood that there is high degree of expectation for some mechanism to establish confidence and trust amongst stakeholders. Government can play a leading role for establishing / reinforcing the governance system that can function in a sustainable manner. Of course, some efforts have been made by so far by few NGO'S (for example, Ethio- Italy ...) in some parts of the country and yet more efforts should be done to make it more sustainable.

4.4. Wheat processors survey Results and Discussions

A key informant interview was held with Leaders of the Ethiopian Millers Association factory owners, production managers, head of procurement staff member, wheat suppliers to have the detail insights of the wheat value chain in general and issues related with wheat processing in particular. A total of 45 participants were contacted in this study using this approach, while the total response rate was 71%..

The following points become key areas of discussion and concern among participants.

Descriptive statistics

- Of all the total respondents, 42% were managers of the companies while the rest were administration staff members and other participants working on different positions
- 66% of the factories visited were flour producers while 11.4%, 11.4% and 8.6% were Pasta, Macaroni and Biscuits producers respectively..

Milling factory capacity utilization

A large number of milling factories based in and around Addis Ababa procures domestically grown wheat by purchasing from a local market and subsidized imported wheat, through the government, for bread preparations. The imported wheat is distributed to the private mills to be grounded in to 73 % flour extraction, then, distributed at a fixed price in to a predetermined marketing channel and outlet.

There are around 140 private mills around Addis Ababa engaged in wheat flour production. These private sector mills have a smaller capacity ranging output from 288 qt/day up to a larger capacity of 1200 qt/day. Almost all of imported wheat is milled in the private sector mills. Although factories couldn't provide accurate figures of their total capacity, according to the survey study and informed estimates suggest the average utilization/capacity of the milling factory nearly approaches between 35-45 percent.

Wheat quality

Favorable agro-climatic condition to grow the wheat crop, diverse wheat crop varieties adapted and released locally altogether to the wide use of mechanization for harvesting around Arsi and Bale wheat belt area, has contributed for the wheat crop to become of sufficiently good milling quality at harvest.

Nevertheless, according to discussions and sample survey made the current marketing transaction trend in wheat crop is deteriorating because of the different qualities of wheat mixed/blended by local assembles, wholesale traders and other channel participants throughout the wheat value chain delivery. This resulted in lower extraction flour rate, with

higher percentage of crop impurities entering in to the wheat crop which consequently affects factory profit margins.

Wheat crop quantity and supply

During the survey and key informants discussion, almost unanimously the milling industries complain about inadequacy of wheat supply from the local markets in to their factory gates, and highly demanded a strong involvement of the government at all levels of wheat value chain for more efficient and inclusive agricultural food system

While conducting this survey more complaint for shortage of wheat supply comes amidst of a continuous and increased productivity per unit area in the wheat growing part of the country. For example, a study result (EIAR, 2015) revealed that yield and production of wheat has increased gradually since the period of 1991/92 and the growth rate reached satisfactorily higher from the periods of 2002/03 up to the present time.

Milling industries dilemma in vertical integration and supplier relationships

The study approached milling industry key informants and factory owners about their future plan to determine their firm boundaries to concurrently source and leverage the adequate supply of wheat raw material.

Most of the research participants raise caution about extensive vertical integration. They consider it as an activity that consumes them much resource, need the skill pools which they claim they don't have it, it takes time and further gives a reason that it create inflexibility to diversify in to other businesses, and wanted simply to be restricted to procurement decisions by choosing which flour products to produces internally.

On the other hand, a few of the respondents and key informant from the leadership of miller association are making an endeavor to convince flour mill members to get involved in wheat crop production (vertical integration) for import substitution, as well as for its sufficient supply and further thinks in terms of developing strong relationships with different and important wheat suppliers.

Tangible and intangible resource orchestration in the milling industries

The respondents were also asked about the key factors that they believe determines most for the quality of their product and rank them according to their order of importance. Accordingly the following lists have been made as per their order of importance.

- i. Quality raw material/wheat*
- ii. Factory plant type*
- iii. Employees knowledge*
- iv. Industry Leadership*

Factory manager's talk about local wheat as sufficiently good milling quality, but complain about inadequate supply of quality and quantity wheat. During focus discussion when asked about how they get involved to procure good and quality raw material and their supply modality looks like; the answer was they just buy wheat grain at their farm gate and decide from there to accept and not to accept.

Then, how is the desire for high quality whet material (No-1 in priority in Table 6) to be realized without well-thought leadership and supply chain strategy?

Below production capacity

The Ethiopian Milling industry manufacturers are producing very much below their machine capacity which ranges between 20 to 25 % of their machine. The major reason is less supply of wheat which meets the specification requirements for flour, pasta, macaroni, and other elated wheat products. Moreover, power supply, water and other infrastructure problems have been also contributing to low production capacity even when the supply of wheat is available.

We have made various discussions with Ethiopian Milling Association's staff & manufacturers at their factory. In our observation we feel many of them have developed sense of dependency on imported wheat that are distributed to manufacturers since the price of wheat is lower than the local supply and the quality of wheat is relatively better.

In order to curb this problem the Ethiopian Milling Association has proposed to engage their members into mechanized farm. They presented the case to respective ministry and waiting for response.

5. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

The purpose of this study was to illustrate and examine the dynamics of value creation and value adding activities in the Wheat industry of Ethiopia. It specifically aimed at documenting the necessary information as the potential, existing opportunities and issues related with the wheat value chain. The focal organizations in this study include; the initial value creator “**wheat grower**” and a middle line value creator “**milling industry**”. The data for discussion was generated from primary and secondary sources.

Wheat production and productivity: To date, significant efforts were made from the government and diverse stakeholders to increase wheat yield per unit area in Ethiopia. As a result, major achievement was made in the past fifteen years of increased production all over major wheat growing regions. But, the greatest achievements scored in wheat productivity, are far from attaining the vision of wheat self-sufficiency in the sector.

Additionally, a favorable climate to grow wheat; a gap wide open to reach the potential productivity of improved wheat varieties; the demand for more pasta, macaroni, and bread wheat due to urbanization and life style change; and increased wheat consumption indicate underperformance of immediate wheat growers and a very demanding and realistic support on the part government bodies and stakeholders in related businesses.

Therefore, to meet the growing demand from consumers, milling industries, and to save currency from rising imported and subsidized wheat, to create more social benefits in the value chain, increasing wheat yield sustainably will still remained a critical task ahead.

Wheat growers and milling industries: Wheat growers and milling industries are significant value adding players in the wheat value chain. The wheat grower being upstream supplier

provides the raw material and the milling industry then adds value to these inputs, before passing them down stream to the next actor in the chain; ultimate consumer.

However, wheat value chain industry in Ethiopia doesn't begin and end with main economic actor participation only (growers and milling industries). But, the wheat market channels links growers and milling industries among different value chain participants include; primary cooperatives, union, local traders, rural wholesaler, urban wholesalers, brokers, processors, supermarkets, hotels/restaurants, and urban retailers; that finally transfers the value added product to the ultimate consumers.

The marketing channel intermediaries listed above do not significantly contribute to the right value-adding activities, but facilitates information cascade about customer preference and transfers demand on the value of wheat products to be created and added in to growers, milling industries and ultimate consumers. Regardless of how marginal value is created and distributed in to the value chain by those intermediary actors, they will continue to be the participants to co-produce value in the process.

Milling Industries:- Milling industries around Addis Ababa are currently working below factory capacity. They are mainly dependent on subsidized government wheat import for their production activity. Domestic wheat production covers only small percentage of milling factory capacities, at times even lower than imported wheat.

In addition to a limited supply of wheat grain, milling factories confront a variety of threats for obtaining a quality raw material including; impurity and blending, grain quality deterioration due to bad storage conditions. Additionally, they have problems of frequent power interruption, insufficient infrastructure facilities, issues of withholding tax becoming a reason for unfair competition, uncontrolled wheat market system, illegal business transaction, loose market integration between supplier and milling factory, lack of contract farming, illegal accessibility for wheat grain, lack of grain quality standardization and shortage of hard currency to provide spare parts for the milling machine. These among others are critical limiting factors for effective functioning for the manufacturing industries.

Value Creation within the value chain: During the focus group and key informants discussion with growers, milling industries; the researcher understands that, both main economic actors are acting autonomously in their own production and processing activities with little or no interference to each other.

There were only a few examples to be cited from the milling industries that made a little effort to access its customers and supplier through own means. The majority of milling industries in the survey plainly described that there was no any kind of contact whatsoever with their wheat suppliers (growers). It means they are crafting marketing messages, sales channels with little or no interference (interaction) with growers.

In many instance wheat growers and milling industries are mediated each other's interest indirectly, for example; through relevant government offices, research institutions and different market channel actors. This complicates and delays the value creation process between these two parties, thus, brings multiple misunderstandings. Then, it is imperative that the two parties (growers and factories) need to exercise their influence to each other in every part of the business system by creating a close interaction among them. In this way they can create a mutual understanding based on their own of how value should be created for each of their interest.

5.2. Recommendation

On the basis of an aforementioned discussions and lessons documented from the previous interventions by the government as well as a few stakeholders; the following recommendations are forwarded to be considered by all concerned for future program design, implementation and policy interventions:

To meet the growing demand of manufacturing industries, increasing the yield potential with its high quality parameter would be the solution and demand in the long run. Nevertheless, this study is not going to recommend how to increase productivity per unit area and talk about the agronomic practices to boost productivity. Methods and ways of improving productivity is a continual process and has been done through various research approaches since long time ago, and as yet it is going to be a focal point and an imperative agenda in the research institutions in

the years to come. But, a few seemingly and identified gap including some critical issue that would contribute to improved wheat supply chain with special emphasis to the milling industries are discussed and recommended as follows;

I. Mechanization and farmers inclusiveness in practical research; Issue to increase productivity

- Adoption rate in improved seed and fertilizer had increased from less than 1% in 1981 to 72% in 1998 (Negassa, Shiferaw, Koo et al., 2013). Multiple wheat initiative research conducted had changed farmer's productivity. Many stakeholders, NGO's, extension workers, input providers, government organizations etc., involved in supporting and promoting best agronomic practices that contributed much to yield improvement. Despite these significant efforts, in the last twenty years, for improved productivity; a leap in wheat productivity seems far from achievable. Yield potential from varieties still unachievable in a sustainable way, except to be talked few farmer's field's examples. The averaged wheat yield per hectare was so sluggish to reach 2.4 tones/ha; way behind world and best African wheat producer's average.

✚ Therefore, based on key informants discussion and self-observation, the researchers of this study argue and recommend that an upcoming stakeholder involvement as well as research endeavor to boost productivity should divert its focus in to adoption of mechanization in farmer's fields.

✚ Additionally, research intervention to improve productivity should be carefully considered to solve constraints and challenges taking in to consideration farmer's specific field condition, thus, must be so inclusive to become the interest of a farmer not a researcher.

✚ A realistic, a future down to the earth support in yield improvement strategy will bring growers in to the wheat value chain industry of Ethiopia, with their highest share of contribution in the process of value creation. An increased productivity will rewards their effort all as key determinants and receivers of multiple support in the value adding activity

II. *Patching a missing link necessary for wheat value addition.*

In our thorough discussion with key informants from the milling industry as well as wheat growers, both partners focus on the locus of interaction - the exchange of wheat for money through 'brokers' - as the locus of economic "value extraction". The interaction between the grower/producer and the milling industry owners are not seen as a source of "value creation". In this case, value exchange and extraction are the primary functions performed by the market, which is separated from the value creation process. Hence, this study suggest that not only suppliers/ farmers and milling industries should make a close relationship to create value, but also other economic actors in the supply chain including business partners and ultimate consumers should come together to co-produce value.

III. *The way intermediate chain actors/traders/ play a role in value addition*

The offering of traders and brokers in the wheat value chain system is more of transferring goods and exchanging information than adding a meaningful value. More and more opportunities for value creation on the products are in the hands of growers and grain milling industries. For this reason, unless the role of the relevant actors trader/brokers have all been transformed into new kind of value offering within the system, then, their role is going more of sharing the same profit margin by competing with each other. So there must be a direct and new way of making relationships between producers and consumers in the wheat value chain industry by avoiding the middle economic actors that don't create value.

IV. *Leadership adds value; how milling industries may play active role*

During a field visit to flour mills in and around Addis Ababa; the study generally observed that, factory managers pay far less attention to intangible issues including employee capabilities, factory facilities, supplier relationships etc., and focus more on factory plant wheat material etc., only few factories seems to have leadership brand on their organizations which are performing well. Therefore, the researcher believes that there is a practical reason to believe leaders can create value through organizational capabilities, individual abilities and human resource practices. And, the study recommends milling industries must be actively involved in improving their organizational leadership through focus and concern with a supply chain involvement and activities.

V. Value chain governance issues; To mediate market interactions

New governance functions and capabilities in the value chain can create efficient and high quality interactions amongst wheat producers and milling industries. To improve the value addition process channel participants relationships must be built on an open dialogue, transparency, accessibility, and exchanging unique experiences to each other. The goal of the governance issue will be to mediate an interaction and create mutually beneficial results among wheat grower, milling industries and consumers-This is the way how value can be created in the future.

VI. Information Communication Technology: To avoid asymmetry of information

Information Communication Technology (ICT) plays a key role to enhance performance of wheat value chain. Since knowledge and information are the major drivers of economic endeavors its application has been becoming critical for social and economic transformation. Lack of proper and timely information creates a gap among key participants, mainly, buyers in one end and sellers on the other side.

In connection with the upcoming effort, extension staff and development agents so close to growers can play critical roles in the transformation process by adapting technology, support learning, assist and enable farmers in problem-solving, clarifying how market for their product operates.

LIST OF REFERENCES

AAFC (Agriculture and Agri-Food Canada), 2004. Value-added agriculture in Canada. Report of the standing senate committee on agriculture and forestry. Agriculture and Agri-Food, Canada.

Abele, K, Negassa, A. and B. Ross, 2011. Concepts, Applications and Extensions of Value Chain Analysis to Livestock Products in Developing Countries: A review and research agenda. Mimeo. International Livestock Research Institute, Nairobi, Kenya.

A dugna AbdiWoldesemayat and Tesema Tanto, 2012. Comparative analysis of farmers' and improved varieties of durum wheat (*Triticum durum*) managed on farm in Ethiopia.

Agrimer, 2011. The durum wheat market worldwide, European Union, France. ISSUE January

Anandajayasekeram, P. and Berhanu Gebremedihin, 2009. Integrating Innovation Systems Perspective and Value Chain Analysis in Agricultural Research for Development: Implications and Challenges. Improving Productivity and Marketing

Campbell R, 2008. The Value Chain Framework Briefing Paper. ACDI/VOCA, United States Agency for International Development, New York.

CSA (Central Statistical Agency), 2004. Agriculture Sample Survey Volume III Report on Crop and Livestock Product Utilization (Private Peasant Holdings, Me her Season) Addis Ababa, Ethiopia.

CSA (Central Statistical Agency), 2005. Federal Democratic Republic of Ethiopia Central Statistics Agency Crop Production Forecast Sample Survey, 2003/04. Report on Area and Crop Production forecast for Major Grain Crops (For Private Peasant Holding, Meher Season) Statistical Bulletin.

CSA (Central Statistical Agency), 2009. Agriculture Sample Survey Volume VII Report on Crop and Livestock Product Utilization (Private Peasant Holdings, Me her Season) Addis Ababa, Ethiopia

CSA (Central Statistical Agency), 2010. Federal Democratic Republic of Ethiopia Central Statistics Agency Crop Production Forecast Sample Survey, 2010/11. Report on Area and Crop Production forecast for Major Grain Crops (For Private Peasant Holding, Meher Season) Statistical Bulletin.

CSA (Central Statistical Agency), 2012. Agriculture Sample Survey Volume IV Report on Area and production of crops (Private Peasant Holdings, Meher Season) Addis Ababa, Ethiopia
CSA (Central Statistical Agency), 2013. Agriculture Sample Survey Volume VII Report on a crop and livestock product utilization (Private Peasant Holdings, Meher Season) Addis Ababa, Ethiopia

CSA (Central Statistical Agency), 2014/15. Federal Democratic Republic of Ethiopia. Central Statistics Agency Crop. Agricultural sample survey. Crop and livestock utilization volume 2

Dempsey, J, 2006. A case study of institutional building and value chain strengthening:

Dendena Getachew, Efrem Lema and Lema Belay, 2009. Fresh mango value chain analysis in Arbaminch area. Organization of value chain competency. Addis Ababa, Ethiopia.

Dereje Birhanu, 2007. Assessment of Forest Coffee Value Chains in Ethiopia: A Case Study in Kefa Zone, Gimbo District. Agricultural Science and Resource Management in the Tropics and Subtropics (ARTS). German.

Dereje Biruk., ATA, 2014. Addressing wheat issue through the value chain approach. *International conference on wheat flour & pasta*. 06-07, December 2014 Addis Abeba. Success (IPMS) of Ethiopian Farmers Project Working Paper 16. ILRI (International Livestock Research Institute), Nairobi, Kenya. 67p.

Desalegn Debelo, Bedada Girma, Zewdie Alemayehu and Solomon Gelalcha, 2001. Drought tolerance of some bread wheat genotypes in Ethiopia. *African Crop Sci. J.* **9(2)**: 385-392

Gashaw T., Bernand, T., Brauw A., 2016. The Impact of the Use of New Technologies on Farmers' Wheat Yield in Ethiopia: Evidence from a Randomized Control Trial.

Gereffi, Gary, John Humphrey and Timothy Sturgeon, 2005. "The Governance of Global Value Chains." *Review of International Political Economy*: 78-104.

Efrem Bechere, Hirut Ketema, and Getachew Belay, 2000. Durum wheat in Ethiopia: An old crop in an ancient land: Institute of Biodiversity Conservation and Research. Addis Ababa, Ethiopia.

EIAR (Ethiopian Institution of Agriculture), 2006. Success in value chain; Durum wheat commercialization and adoption improved technology in Bale zone, Ethiopia.

FAO, 2007 (Food and Agriculture Organization). Addressing marketing and processing constraints that inhibit Agri-food exports: A guide for policy analysts and planners. *Agricultural Service Bulletin 160*. Rome. Italy.

Fasse A, Grote U and Winter E, 2009. Value Chain Analysis Methodologies in the context of environment and trade research. Gottfried Leibniz University of Hannover, Institute for Environmental Economics and World Trade. financing value chains, USAID

Fleming, K, 2005. Value added strategies: Taking agricultural products to the next level. Honolulu (HI): University of Hawaii. Agribusiness; AB-16.2 p.

Chatin O., 2010. Value creation, Competition and performance in buyer-supplier relationship. *Strategic management journal*.32 : 76-100

Gereffi, Gary and M Korzeniewicz, 1994. Commodity Chains and Global Capitalism: Praeger Publisher.

Gereffi, Gary, John Humphrey and Timothy Sturgeon, 2005."The Governance of Global Value Chains." *Review of International Political Economy*: 78-104.

Gibbon, P. and S. Ponte, 2005. Trading down? Africa, value chains and the global economy. DIIS, Copenhagen.

Global value chains.org, 2011. Concepts and Tools. From <http://www.globalvaluechains.org/>. Gooding, M.J. and Devis, W.P, 1997. Wheat production and utilization. CAB International, Wallingford.

GTZ, 2008. Value Links Mapping Symbols: The Methodology of Value Chain Promotion. First Edition, Eschborn, German.

Haymanot Asfaw 2014. Durum wheat value chain Analysis: The case of Gololecha district. Bale Zone Ethiopia. Msc Thesis submitted to the school of Graduate studies Harmay University.2014

HailuGebremariam, D.G. Tanner, and Mengistu Hulluka, 1991. Wheat Research in Ethiopia: A Historical Perspective. Addis Ababa: IAR/CIMMYT.

Hobbs J, Cooney A and Fulton M, 2000.Value chains in the agri-food sector. What are they? How do they work? Are they for me? Department of Agricultural Economics, University of Saskatchewan.

Humphrey and Memedovic, 2006. Opportunities for SMEs in Developing Countries to Upgrade in a Global Economy, ILO SEED Working Paper No. 43, Geneva.

Humphrey, J. and H. Schmitz, 2000. Governance and Upgrading: Linking Industrial Cluster and Global Value Chain Research. Institute of Development Studies Working PaperNo.120,Brighton.

Humphrey, John and Hubert Schmitz, 2002. "How Does Insertion in Global Value Chains Affect Upgrading in Industrial Clusters?" *Regional Studies*, 36(9): 1017-1027.

ILO (International Labour Organization), 2009.Local Value Chain Development for Decent Work.A Guide for Development Practitioners, Government and Private Sector Initiatives.Geneva, Switzerland, 2009, International Labor Organization.

Mc Gill., Prikhodko D., Sterk, B., Talko .Peter., 2015 Egypt; wheat Sector review, Country Highlight. FAO investment Centre. Food and Agriculture of the United Nations

Mekebebe G., Kalkul.M., Aligeri, 2016. B., Samuel G., Analysis of price shock transmission; Case of the wheat- bread market value chain in Ethiopia.

Muhammed Urgessa, 2011. Market chain analysis of teff and wheat production in halaba special woreda, southern Ethiopia. M.Sc thesis submitted to the School of Graduate Studies, Haramaya University. 104p.

Nedelcovych, M., and David S., 2012. Private sector perspective for strengthening Agribusiness value chain in Africa: Case study from Ethiopia, Ghana, Kenya, and Mali

Normann, R., Ramirez, R., 2000. From value creation to value constellation: Designing interactive strategy. *Harvard Business Review*. 65-77

Islam, M.S., Miah, T.H. and Haque, M.M., 2001. Marketing system of marine fish in Bangladesh. *Bangladesh J. of Agric. Economics*. 24(2): 127-142p.

Kaleb Shibeshi, 2008. Distributional Issues in Cereal Value Chains, the Case of Wheat Market in Arsi. An MSc Thesis Presented to the School of Graduate Studies of Addis Ababa University. 70p.

Kaplinsky, R. and M. Morris, 2000. A Handbook for Value Chain Research, IDRC. Ottawa, Canada.

KIT, FaidaMaLi and IIRR, 2006. Chain empowerment: Supporting African farmers to develop market. Royal Tropical Institute, Amsterdam; FaidaMarket Link, Arusha; and International Institute of Rural Reconstruction, Nairobi

Kotler P. and Armstrong, G., 2003. Principle of Marketing, 10th Edition. Prentice Hall of India Pvt.Ltd. New Delhi.

Leedy, P.d., AND Ormond., J.E. Practical Research . Planning and design, 8th edition Upper Saddle River NJ: Pearson

MAFAP (Monitoring African Food and Agriculture Policies), 2012. Improving incentives to expand wheat production in Ethiopia. Policies Brief, #9.

Michael Porter, 1985. Competitive Advantage: Creating and Sustaining Superior Performance, New. York: The Free Press.

MoARD (Ministry of Agriculture and Rural Development), 2010. Ethiopia's Agricultural Sector Policy and Investment Framework (PIF) Ten year Road map (2010-2020), Draft Final Report
MSPA (Mauritius Sugar Producers' Association), 2010. Value-added products of sugarcane. <http://www.mspa.mu/index.php?rubrique=15> . Date accessed: December 10, 2012.

Muhammed Urgessa, 2011. Market chain analysis of teff and wheat production in halaba special woreda, southern Ethiopia. M.Sc thesis submitted to the School of Graduate Studies, Haramaya University. 104p.

Parahlad.C.k., ramaswamy V., 2004. Co-creation Experience. The next frontier in value creation. *Journal of international marketing*. Volume 17, Summer 2004

Pender D, 2006. Report on value chains: analysis of existing theories, methodologies and discussions of value chain approaches within the development cooperation. Swiss Centre for Agricultural Extension and Rural Development (AGRIDEA).

Raikes, P., Jensen, M. and Ponte, S, 2000. Global commodity chain analysis and the French filière approach: comparison and critique. *Economy and Society*, 29 (3): 390-418.

SARC (Sinana Agricultural Research Center). 2001. Profile of Sinana Agricultural Research Center. Oromiya Agricultural Research Institute. Bulletin 2013.

SARC, 2013. Durum wheat value chain in Oromia: a role of collective action to substitute hard wheat importation by local durum wheat production. (Unpublished).

Schmitz, H, 2005. Value Chain Analysis for Policymakers and Practitioners, International Labor Organization, Geneva

Sirmon., D .G., Hitt.M.A., & Ireland R.D., 2007. Managing firm resource in dynamic environments to create value: Looking inside the black box. *Academy of management review*. Vol.32.No.1, 273-292

UNCTAD (United Nations Conference on Trade and Development), 2010. Strategies for diversification and adding value to food exports: A value chain perspective. UNCTAD/DITC/COM/TM/1.14. UNCTAD, Geneva, Switzerland.

UNIDO (United Nations Industrial Development Organization), 2009. Agro-value Chain Analysis and Development. Vienna.

UNIDO (United Nations Industrial Development Organization), 2011. Ethiopian Agro-Industry Strategy: Oilseeds Value Chain Analysis, Report on Benchmarking, Strategy and Action Plan, Addis Ababa, Ethiopia.

UNIDO and FAO, 2009. United Nations Industrial Development Organization and Food and Agricultural Organization,. Ethiopian agro-industry strategy: Oilseeds value chain analysis, Benchmarking, Strategy and Action Plan, unpublished report.

USAID, 2010 (United States Agency for International Development). The competitiveness and trade expansion program: Staple Foods Value Chain Analysis in Kenya. Country Report –Kenya.

USAID, 2011 (United States Agency for International Development),,. The competitiveness and trade expansion program: Staple Foods Value Chain Analysis. Country Report – Ethiopia Vavilov N.I, 1951.The origin, variation, immunity and breeding of cultivated plants. The Ronald Press Co, New York

APPENDICES

Appendix- A Focus Group and key informant's discussion points

The major issues for discussion were:

- Discussion about country's wheat market, is it controlled?
- Do we have competition in the milling industries
- How your supplier handling?
- How do you define quality raw material?
- Why are you operating under capacity?
- Is there price difference between your products and between other industries?
- What do you do to achieve competitive advantage?
- How do you attract your customers
- Product Variety?
- Is your milling machine up-to-date?
- How do you run this family business
- What is your profitability margin?
- What is mainly the source of your profit?
- identification of missing links and point of intervention for the wheat industry;
- Critically discuss reasons for lower productivity
- value chain's performance, challenge, and prospects;
- governance issues of wheat value chain;
- identification of major players and stakeholders in the industry;
- how to upgrade the wheat value chain and improve industry performance to reach the export market;
- pull more members to the industry with better technology and knowhow;
- How to create stronger market linkage with better value addition system;
- Documenting and sharing their best practices for benchmarking; and more.

Appendix B- Questionnaire I: Farm Survey

I. Dear Respondent,

Addis Ababa Chamber of Commerce has commissioned a study entitled “**Value Chain Study on Wheat Industry in Ethiopia**” with the objective to carry out an in depth value chain analysis to generate sufficient information on the main opportunities and bottlenecks in the export and local market for wheat products. AACCSA believes this study is likely to contribute significantly to increase production, profit and export for manufacturers in Ethiopia.

Put (X) to each answer where you feel appropriate. Your response will only be used for survey purposes and never be shared. In case you have any questions regarding the survey, please call Ahmed Abubeker at 0911-232253, and Assefa Hagos 0911-841059 ***Thank you very much for your time and suggestions.***

General Information:

Farmer's Name: _____ Sex: _____

Zone: _____ Woreda: _____ Farm size/ha: _____

Questions: (Please Mark your answers as "X")

What type of wheat do you produce:

Durum wheat _____

Bread wheat _____

others, specify _____

What is your production, yield per hectare; for most recent two years

2006/2007 production season _____

2007/2008 production season _____

By which method do you plough and plant your wheat farm?

Using Oxen plough _____

Using Tractor _____

Others, if any _____

Which of the following method do you use to harvest your crop?

Using labor _____

Using combine harvester _____

Others, if any _____

What kind of inputs are you lacking, critically to improve your productivity?

Supply of Improved seeds _____

Supply of Fertilizers _____

Agricultural machineries _____

Irrigation facilities _____

Other, specify. _____

Which one of the following factor is the most challenging issue to improve your productivity?

Shortage of rainfall _____

Excess rainfall _____

Wheat crop diseases _____

Lack of fertilizers _____

Lack of agricultural machineries _____

Others, specify _____

What type of seed do you use to plant your farm/plot?

Certified seeds, from seed enterprises _____

Commercial seeds, from unions _____

Local seeds, from your own source-----

Others type, specify _____

What type of fertilizer do you use in your farm?

- DAP only _____
- UREA only _____
- DAP and UREA _____
- Others, specify _____

Where is the source of your farm Inputs /Seeds, Fertilizer, and herbicides/?

- Government organizations _____
- Private organizations _____
- Farmer’s union and cooperatives _____
- Others specify _____

To whom do you sell your wheat produce?

- To Small private traders _____
- To Individual agents of wheat market _____
- To Large private traders _____
- To farmer’s Cooperatives and unions _____
- To Government bodies like (Ethiopian Grain Trade Enterprise) _____

Where do you sell your farm produce?

- Right at my farm gate _____
- Deliver it to nearby market _____
- Taking it to buyers warehouse _____
- Others ,specify _____

Who is your produce’s major buyer?

- Private small buyers _____
- Big whole sale buyers/traders _____
- Flour factories _____
- Government Organizations _____
- Others specify _____.

How do you access your buyer?

- Through agents _____
- Through friends _____
- Direct contact/Telephone, visiting/ _____
- Through Public media _____
- Others, specify. _____

The selling price of your wheat produce for 100kg

For the following production seasons

2003 e.c.	2004e.c.	2005e.c.	2006 e.c.	2007 e.c.	2008 e.c

How do you characterize the price of wheat?

Highly fluctuating_____

Fluctuating_____

Predictable_____

Others, specify_____

What are the Major reasons for the fluctuation (for increase in price)?

too few suppliers_____

Too much suppliers_____

Buyer's influence_____

Due to farm tractor and harvester price change_____

Low cost of inputs_____

Others, specify_____

Which means of transport do you use to transport your produce?

Using Tracks -----

Using Animals transport_____

Using Horse carts_____

Others, specify_____

What type of storage do you have for your wheat produce?

Traditional storage _____ -

Well prepared ware hose_____

Others, specify_____

Are you a member of a union; if yes, to which one do you belong to?

What are the benefits by becoming a union member?

Get Input supply_____

Get Market linkage_____

Experience sharing_____

Get Credit facility_____

Others, specify_____

Thank you for sharing your thoughts with us !!

Appendix –C: Questionnaire II. Wheat processors/ factories

II. Dear Survey Participants

Addis Ababa Chamber of Commerce has commissioned a study entitled “**Value Chain Study on Wheat Industry in Ethiopia**” with the objective to carry out an in depth value chain analysis to generate sufficient information on the main opportunities and bottlenecks in the export and local market for wheat products. AACCSA believes this study is likely to contribute significantly to increase production, profit and export for manufacturers in Ethiopia.

Put (X) to each answer where you feel appropriate. Your response will only be used for survey purposes and never be shared. In case you have any questions regarding the survey, please call Ahmed Abubeker at 0911-232253, and Assefahagos 0911841059

Thank you very much for your time and suggestions!

III. General Information

- a) Name of the factory:

- b) Location of the Factory:

- c) Contact Person:

- d) Address , Tel Number: _____ E. mail:

- e) Year of establishment or start of operation (Ethiopian calendar) :

IV. Questions: (Please Mark your answers as “x”)

- a. It is not quite suitable _____
- b. We need much improvement in our factory _____

- 1. What is the major wheat product produced at your factory?
 - a. Flour _____
 - b. Pasta _____
 - c. Macaroni _____
 - d. Biscuit _____
 - e. Other, Specify _____

- 2. Please, rank and mark the products stated above, as “The highest produced or the lowest produced”!
 - a. Flour _____
 - b. Pasta _____
 - c. Macaroni _____
 - d. Biscuit _____
 - e. Others, specify _____

- 3. What is the annual volume of produce in quintals for each of the following products?
 - a. Flour _____
 - b. Pasta _____
 - c. Macaroni _____

- d. Biscuit _____
4. What is the amount of your factory processing capacity?
- a. On Daily basis _____
- b. Annually _____
5. How do you describe your factory's processing and manufacturing capabilities?
- a. Our factory plant is a bit old needs replacement _____
- b. We have an old factory but working good still _____
- c. We have a modern and up-to-date plant factory _____
- d. The business does not need a very up-to-date factory plant _____
6. How is the quality of your product determined
- a. By the quality of the raw material _____
- b. By the factory /plant type _____
- c. By employees unique knowledge _____
- d. By good company leadership _____
7. Do you have an R & D section/department in your company?
- a. Yes _____
- b. No _____
8. **Does your factory location and its facilities suitable for a higher output?**
- a. **It is not suitable** _____
- b. **We need to move in to a new and suitable factory site** _____
- c. **It is suitable for our production activity** _____
- d. **We are doing under difficult conditions** _____
9. Do you have any plan or strategy to create long term wheat suppliers partnership?
- a. We have already formed a good relationships _____
- b. We are planning to form a relationship _____
- c. It is not part of our strategy for the time being _____
- d. There is no need to form long term partnership _____
10. Which operation capacity level explains **your factory performance** every well?
- a. We are utilizing at our full capacity _____
- b. We are running on average factory capacity _____
- c. We are working below our factory capacity _____
- d. Other, Specify _____
11. Your major source of wheat seed materials is from?
- a. Individual farmers _____
- b. Unions _____
- c. Ethiopian Grain Trade Enterprise (EGTE) _____

- d. Private wholesale traders _____
- e. Private small traders _____
- f. Agents or broker _____

12. Please put ranks to the following wheat suppliers, stating as Lower **supplier, or higher supplier**, according to your factory needs?

- a. Individual farmers _____
- b. Unions _____
- c. Ethiopian Grain Trade Enterprise (EGTE) _____
- d. Private wholesale I traders _____
- e. Private small traders _____

13. In which of the following markets do you sell your factory products?

Your factory Products	Market destination (put "x" mark)			Proportion (%) of Market destination		
	For Domestic	For Foreign	For Both	Domestic	Foreign	Total
1. Flour						
2. Pasta						
3. Macaroni						
4. Biscuit						
5. Other, specify						

14. What do you think is the constraint for an effective wheat value chain in our country?

- a. Shortage of raw materials _____
- b. Poor quality of raw material supply _____
- c. Lack of transport facilities _____
- d. Price fluctuation of raw materials _____
- e. Less attractive selling prices in the local market _____
- f. Less attractive selling prices in a foreign market _____
- g. Lack of market network and information _____
- h. Poor manufacturing or processing technology _____
- i. Frequent power interruptions _____
- j. Shortage of skilled manpower _____

15. Your suggestions the way improve the value chain for the wheat industry?

Are you a member of Addis Ababa Chamber of commerce & Sector Association?

- a. If yes since when _____
- b. No _____

Thank you for sharing your thoughts with us !!

Appendix –D: List of study Participants

Grain milling industries listed for the survey

No.	Flour mill industries participant in the survey				
	Milling factory	Location		Milling factory	Location
1	Kaliti food share company	AA/Kaliti	15	Ethio Flour	Burayu
2	Meseret flour Factory	Dukkem	16	Al.Kemer flour factory	Burayu
3	Astco food complex	AA/Akaki	17	Semira flour factory	Alemgena
4	Melkamu flour factory	AA/Akaki	18	Zak flour factory	Alemegena
5	Agape flour mill	Burayu	19	Mohammed Awol flour (Alemgena)	Alemgena
6	Waliya macaroni	Burayu	20	Netsanet flour factory	Alemgena
7	Rhobo Flour factory	Burayu	21	Hanan flour factory	Alemgens
8	Wakene Food complex	Burayu	22	Almaz flour factory	Alemgena
9	Kebron food complex	Burayu	23	Gohe flour factory	Nefas Silk
10	Afia food complex	Burayu	24	KoJJ food complex	AA/winget
11	Misrak Flour factory	AA/Gotera	25	Kokeb Flour factory	AA/Saris
12	Brother Biscuit Factory	Addama	26	Fana Flour factory	Addama
13	Anhadua Flour factory	AA	27	WEB Food complex	Addama
14	Hayat Food Complex	AA	28	Famil Flour Fcatory	Addama
	Afria flour complex	Adama			

Focus group and key informants

1	Agricultural Transformation Agency of EFDRE	8	Zone Office of Agriculture
2	Agricultural Bureau of Agriculture	9	Arsi Zone Office of Trade & Market Development
3	Oromia Bureau of Trade & Market Development	10	Arsi Zone Office of Cooperative & Promotion
4	Ethiopian Miller Association	11	Bale Zone Office of Agriculture
5	Ethiopian Grain Trade Enterprise	12	Zone Office of Trade & Market Development
6	Bale Zone Office of Cooperative & Promotion	13	Bale Agricultural Research Center
7	Farm Cooperative and Unions in Arsi and Bale	14	