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RESEARCH ARTICLE

VALUE CHAIN ANALYISIS OF WHEAT IN WENBERMA DISTRICT, WEST GOJJAM ZONE, AMHARA NATIONAL REGIONAL STATE, ETHIOPIA

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ABSTRACT

This study was aimed at analyzing value chain of wheat in Wenberma District in west Gojam Zone with specific objectives of identifying wheat value chain actors and their roles, examining the market performance of wheat in the value chain. The data were obtained from both primary and secondary sources. Using survey the data were collected from randomly selected 120 farmers and one processor, 39 traders and 10 consumers. Descriptive analysis was used for characterizing farmers, describing value chain and examining market performance and econometrics analysis was used for identifying determinants of marketed supply of wheat and factors affecting wheat value addition. The value chain analysis revealed that the major value chain actors are input suppliers, producers, cooperatives/union, collectors, wholesalers, processors, retailers, and consumers. Value chain supporters includes NGOs and governmental offices such as Office of Wenberma District Agricultural Development, Office of Trade and Transport, District Administration, Amhara Credit and Saving Institution, and Commercial Banks, District Cooperative Promotion Office, Amhara Seed Enterprise, Wenberma Agricultural Research Center. The total production cost of farmers was 311.37Birr/quintal and netreturn 226.92% at selling price. Total gross marketing margin was 22.19% and producers share as 77.81% of the price paid by consumers.

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INTRODUCTION

Wheat is increasingly becoming a key staple in Africa and sub-Saharan Africa as a result of income growth and rapid urbanization. But sub-Saharan countries and Africa as a whole produce only about 30% and 40% of their domestic requirements respectively, causing a heavy dependence on imports and making the region highly vulnerable to global market and supply shocks (Negassa *et al.,* 2012). Ethiopia is one of the largest grain producers in Africa, and the second largest wheat producers in Sub-Saharan Africa, next to South Africa (CSA 2012). Although most of the wheat grown in Ethiopia is bread wheat, there is some durum wheat which is often grown mixed with bread wheat (Demeke and Di Marcantonio, 2013). Wheat is one of the most important cereal crops in Ethiopia widely cultivated in wide range of altitudes. Wheat growing areas in Ethiopia are situated between 6-16^{o} N latitude and 35-42^{o}E longitudes at altitude ranging from 1500 to 3000 masl, however, the most suitable agro-ecological zones of wheat fall between 1900 and 2700 masl (Bekele *et al.,* 2000). According to Amare Aleminew *et al.* (2015), bread wheat in Ethiopia is used as a source of food, cash and the straw used as animals' feed. In spite of its tremendous importance, wheat production in Ethiopia faced large production constraints that are affecting both its economic and straw yield. According to Amare Aleminew *et al.* (2015), currently, wheat is one of the major cereals of choice in Ethiopia, dominating food habits and dietary practices, and is known to be a major source of energy and protein for the highland population of the country. Moreover, wheat has been selected as one of the target crops in the strategic goal of attaining national food self-sufficiency. It is also known in several countries of the world, that wheat provides more human nourishment than any other food source. But, Inefficiency of domestic agricultural market is mentioned as one of the detrimental factors for the reduced productivity of farmers and for the poor performance of the agricultural sector in the developing countries. Amhara is one of the largest regions in Ethiopia that shares largest area coverage of the country. It is also known for high production of cereal crops in the country. West Gojam zone is particularly known for its extensive wheat production and sometimes called "wheat belt'' of Ethiopia CSA (2013). However, several problems hinder the performance of wheat production and productivity in Wenberma District West Gojam Zone highlands. Shortage of improved seed variety, low price of wheat products, high price of fertilizer, pesticides and seed, price instability problems for agricultural products, high costs of combine harvesting, reduced soil fertility, lack of sustainable market, poor infrastructure, grass weed and disease are the major constraints of wheat production (EAAPP, 2012). To reverse this situation and improve wheat production and productivity in the area among calls for development of well-performing marketing system which satisfies consumer demands with the minimum

margin between producers and consumer prices. Therefore, in this study, the supply and performance of wheat market including wheat value chain and actors' role, performance of wheat markets and factors determine the supply of wheat by smallholder farmers were identified and analyzed using data obtained from households and market participants. This study focused on investigating the wheat value chain, quantity of wheat supplied to the market and important constraints using value chain analysis approach in Wenberma District of West Gojam highlands. The finding of the study can assist in developing improved market development to benefit all stakeholders that are participating in wheat value chain in the study area.

Statement of the Problem: The majority of Ethiopian farmers are small-scale producers and the goal of development is undoubtedly changing the scope and efficiency of food production. However, majority of Ethiopia's farmers have been using traditional way of agricultural practices. This has contributed for low productivity of the agricultural sector, the estimates show about 94% of Ethiopian farmers rely on less than 5 hectares of land, of which 55% cultivate less than 2 hectares. Crop productivity still remains very low relative to its potential yields, only averaging 2.21 qt/ha between 2010 and 2014 (World Bank, 2014). According to (CSA, 2014), low productivity could be attributed to many factors including land degradation, lack of improved varieties, small farm size, drought and poor farm technology. High food prices since 2008 also affected food security for the poor and net-buying households, Wheat has assumed its importance as an important staple in Ethiopia and accounts for about 15% of the total cereal production and 20% of the cereal consumption. But, Ethiopia still deficient in terms of wheat production to meet the national requirements. In 2009, the country had about 10% wheat production deficit, which led to its imports about 40% of its total supply (FAO, 2014).Ethiopia is the only country in sub-Saharan Africa where smallholder wheat production meets more than 70% of the national consumption demand Shiferaw *et al.* (2011).

The development and upgrading of the value chains is an important agenda for the government, companies and other institutions. Entry into higher value markets requires an understanding of the requirements and dynamic forces within the value chain (Baker, 2006). Understanding of the existing inputs supply systems, production, marketing systems and consumption of wheat is important for developing/upgrading value chain in the study area. According to Mohammed (2009), upgrading the wheat value chain sector takes into account the systematic review of the problems and opportunities that exist across the value chain from input supply to marketing of the final product. Under current productivity and service provision, it will become more difficult for Ethiopian wheat sector to withstand the competition from more productive and efficient system of most other countries. More productive and efficient countries can provide wheat products at lower cost to the consumer which has repercussion on the economy in general. Some of the specific challenges that affected wheat value chain were less quality control systems, week quality based pricing system, low wheat production and less technical capacity of production. In the study area, wheat is the main crop which comes first in terms of area coverage as compared to other crops produced in the district. Farmers produce wheat for household food consumption and as source of cash income. However, there are many problems related to wheat production such as; shortage of input supply, low productivity, poor post-harvest management, price drop after harvest, limited recipes at consumption level (CSA, 2014), limited infrastructural development, transportation problem and low negotiation power of producers who can be cheated by marketing agents. Thus, in order to motivate farmers to produce and supply more to the market, wheat value chain must operate well .In doing so, the study attempted to contribute in filling the knowledge gap of the district by assessing wheat value chain actors and its performance in the study area for the purpose of providing vital information for effective research, planning and policy formulation and for better intervention by government and other stakeholders.

Research questions

The study was intended to answer the following research questions:

1. Who are the major actors of wheat value chain and identify their roles?
2. How is the market performance of wheat along the value chain?

Objectives of the Study

General objective: The overall objective of the study is to analyze the value chain of wheat in Wenberma District, West Gojjam Zone, Amhara National Regional State.

Specific objectives

1. To identify the actors map of wheat value chain, their roles and relationships;
2. To determine wheat marketing costs, margins and value share of the value chain actors;

MATERIALS AND METHODS

Under this section description of the study area, types and sources of data, methods of data collection, sample size and sampling procedures, methods of data analysis and hypothesis and definition of working variables are described.

Data Sources and Methods of Data Collection

Data Sources and types: The data for this study ware collected from primary and secondary sources. Formal and informal sample survey methods were used to collect primary and secondary data. Primary data were collected from producers, wholesalers, assemblers, retailers, processors, cooperatives and agricultural input suppliers. The main data types include production, buying and selling, pricing, input delivery and distribution, market supply of wheat, market constraints and opportunities characteristics of the actors involved in wheat crop production and marketing in the study area. Secondary data were gathered from published and unpublished materials, internet sources district agriculture and rural development offices, farmers' organizations, input suppliers, marketing agencies and from different development organizations of the study area.

Methods of Data Collection: Primary data were collected using structured interviews and Rapid Market Appraisal

(RMA). Using primary wheat producers as an entry point, the study identified linkages and major chain participants from the input supply to the final consumers. Informal survey was conducted using Rapid Market Appraisal (RMA) technique using checklists. Formal survey were undertake with randomly selected farmers, wholesalers, retailers, processors, input suppliers and cooperative representatives using a pre-tested structured questionnaire for each group.

Sampling Procedure and Sample Size: The study area, Wenberma District, was selected as a study since the area has high potential for wheat production and marketing. Initially actors who involved in a value chain were identified using review of related literature and asking of some key informants from respective offices. Following this, samples were selected from each segment of the value chain and included in this study using diverse sampling techniques. For sampling producers, a multi-stage sampling technique was used for the study. In the first stage out of 19 rural kebeles in the district 16 wheat producer kebeles were selected purposively. Secondly, from 16 wheat producers' kebeles; five kebeles were selected randomly using lottery method, because it gives equal chance for wheat producer kebeles. In the third stage, the lists of wheat producer farmers were prepared with the help of development agents. Then, based on the prepared list, sample farmers from each kebele were selected using probability proportionate to size sampling technique. For this study the total sample size for sample household farmers ware determined based on the sampling formula provided by Yamane (1967). The formula used for sample size determination with 95% confidence level with degree of variability of 5% and level of precision 9% are recommended to obtain a sample size required which represent a true population.

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n= Sample size,
N= Population size and
e= level of precision

Based on the above formula a total of 120 households were interviewed

Table 1. Distribution of sample households in the district

Sample kebeles	Number of wheat producer households	Number of sample households
Yergib	563	20
Marwoled	678	24
Markuma	624	22
Wogedad	979	34
Burafer	514	20
Total	3358	120

Source: Own computation, 2018

In addition to sampled farmers, Sample traders were taken at different stages of the value chain. The list of 12 wholesalers, 10 collectors, 16 retailers from the markets and one processor that wheat passed through were selected randomly. Accordingly, total of 39 traders were selected from Shindi, Burie and Fnoteselam (Table 3). Since processing/milling of wheat is only conducted in zonal town Fnoteselam, only one flour mills available in Fnoteselam town was interviewed. Finally six primary cooperatives were obtained from the district; two cooperatives were interviewed from each PA.

Table 2. Processor and Sample distribution of wheat traders at different markets

Traders	Shindi	Burie	Fnoteselam	Total
Collectors	10	-	-	10
Wholesalers	7	3	2	12
Retailers	8	5	3	16
Processors	-	-	1	1
Total	25	8	6	39

Source: Own survey results, 2018

Sampling of consumers: To collect data from wheat consumer's random sampling technique was employed and 1 0 respondents were selected.

Methods of Data Analysis: Descriptive statistics, value chain analysis and econometric analysis were employed to analyze the data collected from wheat value chain actors to meet the objectives of this study. Descriptive statistical analysis is used to clearly compare and contrast different characteristics of the sample households. Hence, descriptive statistics such as frequencies, percentages, maximum, minimum, means and standard deviations were computed to analyze the collected data.

Analysis of wheat value chain market performance: To evaluate value chain performance costs and prices information are very important and is used to construct marketing costs, margins and net returns. Estimates of costs, the marketing margins and net returns along the value chain are the best tools to analyze performance of market. Accordingly, to evaluate the market performance in the value chain, marketing margins; total gross marketing margin (TGMM), producers' share (GMMp), net marketing margin (NMM), marketing margin at a given stage 'i' (GMMi), net returns and estimated costs of value chain actors along the value chain was calculated.

RESULTS AND DISCUSSION

This chapter discusses the descriptive and econometric analyses results of the study. The descriptive statistics results section includes discussions about demographic and socioeconomic characteristics of sample farmers; econometric analysis, sub-section discusses about the determinants quantity of wheat marketed by the producers and value addition in the study area.

Demographic and Socioeconomic characteristics of the respondents: The results of the study revealed that of sample households 80% were male headed and20% were female headed. The marital status indicates 98 % of the sample households were married, 10%widowed, 7% Divorced and 5% were single. The results presented in (Table 3) depicts that 93.3% and6.7%of the respondents were Orthodox and Muslim respectively. The educational background of the sample household heads is believed to be an important feature that determines the readiness of household heads to accept new ideas. It is clear that education can influence productivity of producers and adoption of newly introduced technologies and innovations. Hence, literate producers are expected to be in a better position to get and use information which contributes to improve their production of wheat. The educational level of the

households also indicates that 55.8% were read and write while 44.2% of them were literate (Table 3). Farming was the main occupation and source of livelihood for all sample producers, where the major ones are crop production and animal husbandry. Moreover, in addition to the farming activities, 35.8% of respondents have also reported that they have been engaged in non-farm activities like petty trading and transport services using donkey carts to earn additional income.

Table 3. The comparison characteristics of sample households (categorical variables)

Variables	Number of respondents	Percent
Sex of the household head		
Male	96	80
Female	24	20
Education level of the household head		
Illiterate	67	55.8
Read and write		
Primary(1-8)	40	33.33
Secondary(9-12)	13	10.83
Nonfarm income		
Yes	43	35.8
	77	
No		64.2
Marital status	5	
Single	98	4.2
Married	7	81.7
Divorced	10	5.8
Widowed		8.3
Religion		
Muslim	8	6.7
Orthodox	112	93.3

Source: Own survey result, 2018

It is believed that age of the household head determines whether the household benefits from the experience of an older person or base its decision on the risk taking attitude of the younger producer. Age is one of the important characteristics of the community. It reflects on the productivity of the population as it has bearing on the overall health situation within the community. Age plays a significant role in any kind of business, particularly in agriculture, because the use of child labor on the farms is quite high. As reveled in (Table 4), the average age of the sample household heads was 47.19 years with minimum and maximum ages of 25 and 76 years, respectively. The average family size of the sample households was 4.73 persons; with minimum and maximum family size of 1personand 9 persons, respectively. Farming experience was taken to be the number of years that an individual was continuously engaged in wheat production. The average years of wheat farming experience for the sample household heads was found only 4.27 years with minimum and maximum farming experience of 1 and 7 years, respectively.

Table 4. Characteristics of sample households (continuous variables)

Variables	Mean	St. deviation	Max	Min
Age	47.19	12.141	76	25
Family size	4.73	1.36	9	1
Farming experience	4.27	1.3	7	1

Source: Own survey result, 2018

Value chain analysis: Value chain analysis assesses the value of each activity which increases the products and services to a firm. The ability to perform particular activities and to manage the linkages between these activities is a source of competitive advantage. The competitiveness of value chain is greatly influenced by the partnership and collaboration for innovation that can be realized by chain actors. Moreover, the development and operation of enabling and supporting business development services (e.g. market information, transport, credit) play critical role on how well the value chain responds to consumer demands (Anandajayasekeram and Berhanu, 2009). Therefore, to enhance opportunities for wheat value chain actors, we need to understand the main value chain actors of the entire value chain. At this point, actors involved, the role they have been playing and the prevailing linkage of actors in the wheat value chain is assessed.

Map of Wheat Value Chain in the study area: The value chain map of wheat in Wenberma district is presented as follows (Figure 3).

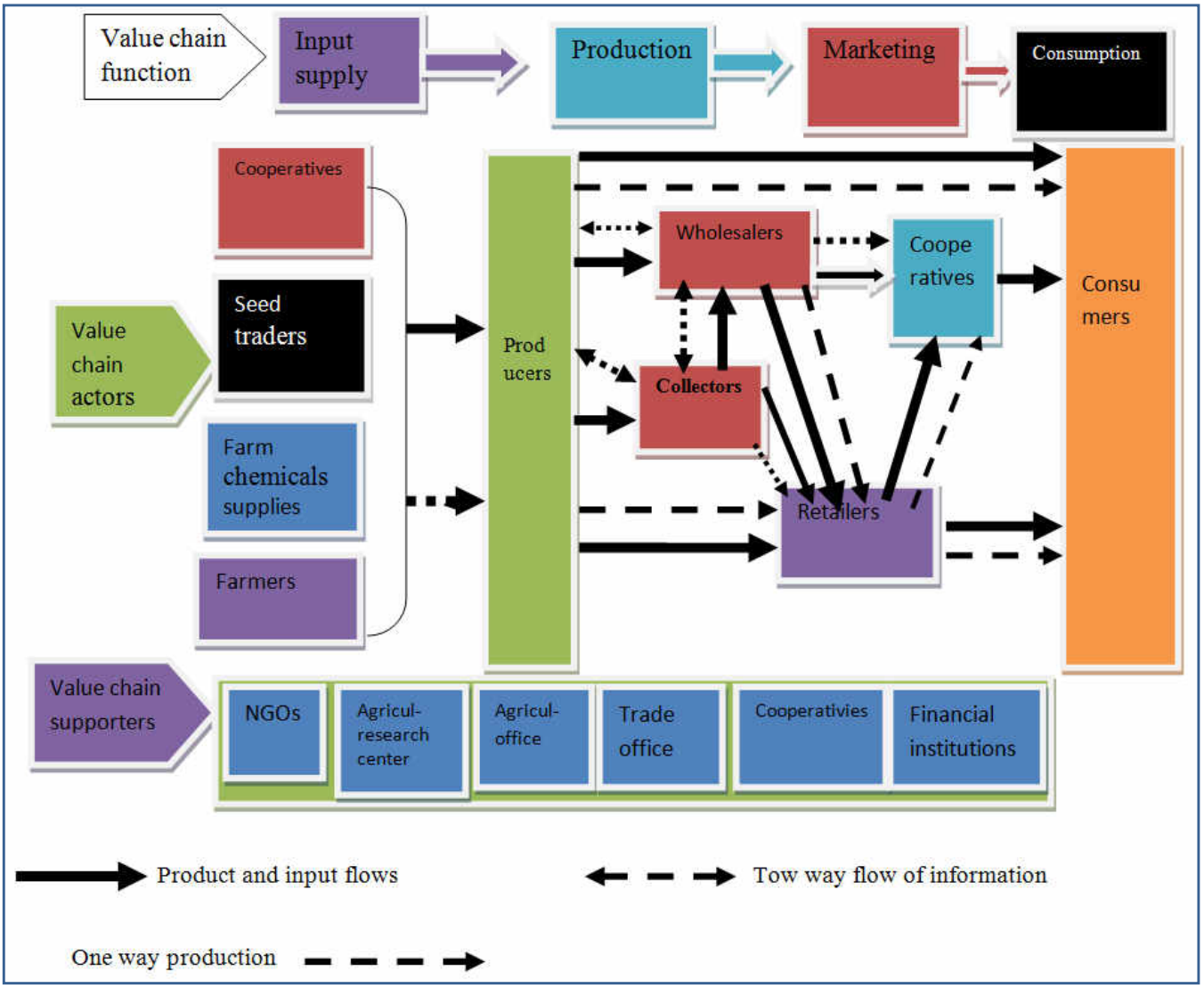
Actors, their role and relationship in wheat value chain: The value chain map highlighted the involvement of diverse actors who participated directly or indirectly in the value chain. The direct actors are those involved in commercial activities in the chain (input suppliers, producers, traders, consumers) and indirect actors are those that provide financial or non-financial support services, such as credit agencies, business service providers, and government, NGOs, cooperatives, researchers and extension agents. Defining each actor's role in the value chain is one part of value chain analysis so in this section wheat value chain actors, their role and linkages are discussed as follows.

Input Suppliers: This is the first stage of wheat value chain, many participants involved in this activity. Primary multipurpose farmers' cooperatives, seed suppliers (traders), NGOs and private agricultural chemicals suppliers are the main actors in supplying inputs to farmers. Wheat farmers also participated in this stage in preparing their own inputs and they also supply input to fellow farmers. In combination, these actors supplied seeds, fertilizers (both DAP and Urea), chemicals and farm implements.

Producers: Wheat producers in the study area are the main actors who perform most of the value chain function activities right from farm inputs preparation on their farms or procurement of the inputs from other sources to marketing of their product. The main value chain activities performed by wheat producer farmers include land preparation/ ploughing, seeding and fertilizer application, weed management/ digging, disease controlling, harvesting, post-harvest handling and finally marketing.

Assemblers (collectors): The assemblers play important role in the system of assembly. They consolidate the product of individual farmers produce and prepare it for marketing. They also relieve their customers of the burden of quality by controlling the small quantities of wheat typically offered by farmers. On the market days early in the morning they took money from regional wholesalers to buy the product so that they transfer the purchased product to the trader who already delivered them money on the same market day. Although wholesalers are the main customers of urban assemblers, they also sell the product to retailers and consumers.

Millers/processors: Wheat as the most important crop utilized as an industrial raw material and input for food-



Source: Sketched from own survey 2018

Figure 1. Wheat value chain map

based factories. Wheat grain millers using wheat as a raw material include factories with large and medium capacities. It is the transformation of wheat into a variety of value added products. Wheat processing industries convert wheat into wheat flour and barn, flour into biscuits, pasta, macaroni and bread that add value to the product and to satisfy market requirement. The surveyed flour processors purchase wheat grain from individual traders (wholesalers and commission agents/brokers) within the district and the surrounding districts. On average 28,980 kg is purchased per week per flour processor. The main sources of wheat for flour factories are Wenberma and Bure districts by suppliers who use hired vehicles. Flour processors process grains into flour as well as wheat bran before selling to end consumers, retailers and wholesalers. On the other hand, bakeries process flour into bread, cakes, and/or cookies and then sell to end consumers. The highest grain supplies to flour processors are made in January and February while the lowest supplies are experienced from May to December. Processors engage in grading, labeling and packaging before selling the products. The value added is reflected by the differences in prices charged per kilogram of processed products. But in wenberma district there no wheat processors that can be convert wheat into wheat flour. In the zone town of the district Finote selam there is wheat processors that convert wheat into flour.

Wholesalers: Wholesalers are major market participants of the marketing system who usually used to buy wheat on the farm filed with larger volume than any other actors in the marketing system and resell the products to retail merchants and processors than ultimate customers. Wholesalers side in the district market and purchase wheat either through broker or directly from farmer or farmer trader or urban assemblers. Commodities bought from different sources put together in one place (store) to be processed so that uniformity of the product will be attained.

Retailers: these market actors are located at the end of marketing channel to consumers, directly servicing the ultimate consumers of the marketing system. They buy from wholesalers and farmers in their surroundings and directly sell wheat to consumers. They perform numerous marketing functions such as buying, transporting, storing, selling and other functions to end users

Consumers: are those purchasing the products for consumption. Wheat is consumed in the district and outside the district in both rural and urban areas. They purchased from retailers based on the quantity desirable for them.

Brokers: These are marketing agents that exist between producers and the final consumers. They facilitated the buying and selling activities between farmers and other

marketing agents. Brokers were mainly involved in between retailers and wholesalers, retailers and other retailers, wholesalers and consumers and retailers and consumers. All brokers use mobile telephone to exchange market information to link the marketing agents involved in between producers and consumers. Brokers disseminate price and other information to the market participants and influence wheat trade and price formation mainly in between wholesalers in the district and wholesalers out of the district.

Cooperatives: cooperative are established by law. There are 6 agricultural primary cooperatives which were established in the district with the aim of increasing farmers' bargaining power in the exchange processes. Among these, two primary cooperatives from five sample kebeles (Shindig and Wogedad farm cooperatives) were survey in this study area. The cooperative is governed by elected members that negotiate on purchase price with the producers and bargain selling price with processors with assist of their union. They keep stocks using both member's working capital and loan. According to the survey result, the existence of cooperatives in wheat value chain has two functions. Initially, cooperatives perform as supporting actors who brings inputs from Wenberma agricultural research center, seed multiplier producers and other supplier by adding transport and other costs and then resale it to both member and non-member of wheat producers. Secondly, cooperatives are acting as major actors of wheat value chain that has stabilizing role in the local market through purchasing the product.

Value chain support providers: In the study area, different governmental and non-governmental organizations supporting wheat value chain. District Agricultural Offices, Trade and Transport Office, Primary Farmers' Cooperatives, Amhara Saving and Credit Institution, Private Transporters and NGOs are value chain supporters identified in the study area. Some service providers extend their supportive functions along the value chain and also have multiple activities. Describing value chain supporters in detail is useful for analyzing the efficiency of the institutions and for coordinating and planning new interventions. So, it is better to describe about each institution what function they performed in wheat value chain in the study area. Agricultural offices provided agricultural extension services, follow closely the wheat farmers, they advise on wheat cultivation, management of wheat product, organizing and providing trainings. Schiff and Stallard (2009) view value chain finance as financial products and services that flow to or through a value chain to increase returns on investment and growth and competitiveness ofthat value chain. The major sources of finance are Amhara credit and saving institution, cooperatives/union, NGOs and traders in the district. This are contribute in wheat value chain improvement. However, as producers said high collateral requirements, long credit process, lack of continuous credit services and limited number of credit institutions are the major challenges that discourage the users in the study area.

Value Chain Governance: In this part of the study a relationships with buyers, sellers, service providers and regulatory institutions that operate within or influence the range of activities required to bring wheat from inception to its end use is presented. It is found that the dominant value chain actors 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. The wholesalers are the key value chain governors and had a relationship with other value chain actors like farmers, collectors and retailers. In most cases, the business relations between the various operational actors are of free market exchange. Processors usually have strict quality standards/parameters/ and expect their wheat suppliers to meet these standards. Thus, processors fixe the price based on their quality requirements while they purchase wheat. Moreover, processors fixe price of their value added products (flour) as they distribute. Processors are always complaining that the traders are not providing quality wheat while traders are blaming the processors for offering low prices. Due to limited capital capacity of farmer primary cooperatives and 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, and traders with traders. Overall, the governance of the wheat value chain is buyer driven with minimum trust between various actors.

Wheat market performance: Wheat market performance was evaluated based on the level of marketing margins by taking in to consideration associated marketing costs for key marketing channels. Therefore, based on the 2018 production year of sampled households in wenberma district, wheat-marketing margins were analyzed based on cost and the average sale price of different marketing agents in the marketing channels of producers, assemblers, wholesalers and retailers.

Costs and profitability of wheat production: Method employed for the analysis of wheat market performance was marketing margins by taking in to account associated marketing costs for key marketing channels. Hence, on the consideration of 2018 production year, costs and purchase price of channel actors, margin at farmers, assemblers, wholesaler's, retailer's, cooperatives and processors level was conducted. This section focused on activities and associated costs in producing wheat at farm household level. This is to know costs associated with wheat production and marketing at farmers 'level. This provides an insight about the performance of wheat market. Producers obtained average profit of 688.63 Birr per quintal in 2018 cropping year from wheat production. The total average cost they incurred per quintal was311.86 Birr per quintal (Table 5). 5.4.2. Profitability analysis of wheat traders in the value chain. The costs and returns (profits) in the marketing of wheat by the different value chain actors (wholesalers, retailers and collectors) are presented below. Collectors in the district purchase wheat from farmers and sell to wholesalers and retailers. Wholesalers in the district also purchase wheat from producers and collectors to sell to wholesalers of other markets, to retailers and consumers .As a survey result indicates, the amount of average transaction costs incurred across traders were varies because traders purchase wheat product from different market like burie and fnoteselam. Accordingly, the average total costs incurred by assemblers, wholesalers, and retailers of wheat were birr per quintal of 9.2, 32.27, and 16.15birr per quintal respectively. The net profit for wholesalers was greater than assemblers and retailers. Purchase price of retailers were greater than assemblers and wholesaler because of retailers purchase small volume of wheat when compare to other type of traders.

Table 5. Costs and profitability analysis of wheat production for farmers per quintals in 2018

Cost item	Cost per quintal in Birr	Percent from total cost
Transport from farm to home	7.07	2.27
Loading and unloading	13.4	4.3
Food items	46.1	14.8
Transportation to market	9.19	3.01
Market search cost	0.44	0.14
Labor cost		
Plowing	18.4	5.9
Weeding	12.15	3.902
Digging	14.6	4.68
Others	42.2	13.55
Cost of Value addition activities harvesting, threshing and storing, Sack, sisal rope, storing and drage /kinin/	147.82	47.54
Total cost/qt	311.37	
Wheat selling average price /producers price per qt	1000	
Net profit/quintal	688.63	
Net return (%)	68.86	

Source: Survey result, 2018

Table 6. Costs and net returns of value chain actors Birr per quintal

Cost item	Assemblers	Wholesalers	Retailers	Average
Average purchase price	1000	1018.5	1065.67	1028.05
Sack price	4.5	4.5	4.5	4.5
Loading and unloading	1.5	2.5	2.65	2.21
Transportation	0.80	6.25	6	3.52
Permanent and temporary workers	-	1.72	-	1.72
Storage and other losses	1.75	2.25	1.75	1.91
Market search costs	0.65	2.5	-	1.57
Packaging cost	-	12.5	1.25	11.87
Total cost	9.2	32.27	16.15	19.2
Average selling price	1050	1143.65	1295	1162.88
Gross margin= sp-pp	50	125.15	229.33	134.82
Net profit/ loss= gm-tc	40.8	92.88	213.18	115.62
Net return (%)	3.88	8.11	16.46	9.48

Source: Survey result, 2018

Marketing margins: In this subsection for calculation of different margins the average selling prices of different participants in wheat value chain (farmers, collectors, wholesalers and retailers) and marketing costs along the chain are considered. Market margin measures the share of the final selling price that captured by particular agents in the marketing of value chains. However, it may also describe price differences between other points in the chain, for example, between producer and wholesale, or wholesale and retail prices. As seen from Table18, margins for wheat value chain actors, the total gross marketing margin was 22.19%.Producers share was 77.81% of the price paid by consumers. The lower share is due to the involvement of different market participants. Individually considered trader's collectors receive relatively less margin and retailers got relatively high margin.

Production and marketing constraints of wheat farmers: Wheat is widely grown and marketed for a long time in the study area, farmers and traders face many constraints. The most wheat production and marketing problems in the study area include lack of timely and sufficient market information, respondents provide only 45.8% (Table15),but the presence of market information providing is important in increasing the efficiency and effectiveness of marketing activities. Provision of market information plays a greater role in farmers' decision making process. This made farmers to reduce risks and uncertainties associated with the market and made them to take the right decision and also high price of seeds, weak market linkages among value chain actors and less bargaining power of farmers in the market and also there is no wheat processors in the district that can be convert wheat in to flour. Although the availability of credit is important source of cash for farmers to buy agricultural inputs needed to increase production and marketed surplus of wheat. Only few of the respondents accessed credit from the sources. As a result farmers were forced to use input below the recommended rate. Because of these reasons, about 25.5% (Table15) of sample respondents did not obtain any credit from financial institution. There are also quality problem in the actual production and harvesting of cereal grains. This is related to poor weeding and inferior harvest management techniques. The storage capacity and quality of stores was also very poor. Because of these reasons, about 3.3% (Table13) of sample respondents don't use modern storage facilities. Almost all farmers don't use modern storage facilities in terms of appropriate design, pest prevention and building materials and Increased cost of transportation due to the increased in oil price is also the other problem for traders are mentioned.

Opportunities: There are many production and marketing opportunities in the study areas identified during survey with key informants, respondents and from observation of the area. This are presence of suitable for wheat production, presence of experienced and interested farmers in production, support NGOs and governmental organization(district agricultural offices), the presence of Kebele agricultural office at kebele level which are playing great role in improving farmers livelihood in wheat production, availability of multipurpose development primary cooperatives which can supply input and buy products even though they are not involved yet are among the opportunities which can be exploited in production of wheat. On the other hand, availability of market demand throughout the year, growing number of buyers, high experience in wheat production and marketing were some of the opportunities. The existence of Agricultural Development Led Industrialization Policy of the country (ADLI) creates

good opportunity for producers through input and output supply and extension services provided by the DAs.

Summary, Conclusion and Recommendations

Summary and Conclusion: This study was aimed at analyzing value chain of wheat in Wenberma district, West Gogam zone, Amhara National region State, Ethiopia. The main focus of this thesis was analyzing value chain of wheat .The specific objectives of study include identifying the mapping of wheat value chain actors, understand the role of chain actors and relationships, identify the determinants of marketing costs, margins and value share of the value chain actors. The data were collected from both primary and secondary sources. The primary data were collected from individual interview using semi-structured questionnaire and key informant interviews by using guiding questionnaire. The primary data for this study were collected from 120 randomly selected wheat producer household heads and 39 traders from the market. Data were also collected from 10 consumers. Secondary data were obtained from different sources like agricultural development office, trade and transport office, publications, CSA and web sites. Data analysis was made using descriptive statistics and econometric analysis using STATAversion8 software.

The descriptive statistics measures like mean, standard deviation, proportion and graphs were used in the characterizing of households heads, analyzing value chains and to evaluate the market performances. Wheat value chain analysis in the study area revealed that the main value chain actors being input suppliers, producers, collectors, wholesalers, retailers and consumers. Producers themselves, primary cooperatives, private chemical suppliers and NGOs were the actors involved in the input supply activities. Only small scale farmers are involved in wheat production in the study area. There are also governmental and nongovernmental organizations that provided support services to wheat value chain. The main supporters of wheat value chain in the study area are office of agriculture, office of trade and transport, primary cooperative, district administration, wenberma agricultural research center, Amhara Saving and Credit Institution (ACSI) and commercial banks are the major wheat value chain supporters in the district. Only 45.8%of farmers reported that they had market information but it is in formal. Mostly their source was from farmers and others get information from direct visit of market, traders and development agents. This shows that there is no formal system of disseminating market information to beneficiaries. The result also showed that 25.8% and 98.1% of the respondents have access to credit and storage facilities respectively. In the study area, during the year under the study, the total wheat production was 480,000 quintals, In this study, the market performance was analyzed. Regarding the cost of the chain actors, producers of wheat in the study areas incur costs mostly during production periods rather than marketing their produce. The total production cost of farmers was 311.37 per quintal and net return was 226.92% a t selling price. Gross marketing analysis result show that total gross marketing margin was 22.19% and producers share was 77.81% of the price paid by consumers.

Recommendation: Recommendations are suggested as follows to improve the value chain of wheat in the study area based on the findings of the study so as to make future intervention. The major source of wheat seed varieties was primary cooperatives. Producers prefer improved seed varieties, they always obtain below their requirement, quantity, quality, uniformity, and the recommended one is 1.5quintal per hectare .Producers said that seed supply is limited. This has led to most of the producers recycling seed from the previous crop which reduces yield per unit area over time. Therefore ,it would be better that value chain supporters to promote and encourage the production and dissemination of quality seed systems in production sector is more strengthened since the area is suitable for seed and wheat production. It should strengthening provision of training on proper managements of crops including controlling of diseases and insects, harvesting and post harvesting practices as an important component in wheat sector development. Establishment of processing and storage facilities for wheat, storage facilities are poor and there is no wheat processor in the district area. To solve these problems constructing best storage and processing facilities by farmers and the government would be very important. Education, to increase the value chain of wheat technique education has a significant effect to increase production by farmers. Hence, continuous education that would change the production skill of producers is very important to change the attitude of farmers. So it should concern to provide continuous education in production and value chain analysis of wheat. Information**,** information plays a key role 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. Lack of proper and timely information creates a gap among key participants, mainly, between producers and retailers. Hence, information services have to be established or strengthened to provide farmers and traders consistently and timely. Quantity of wheat produced is one of the determinant factors that affect volume of wheat supplied to the market positively and significantly. Therefore, policy proposed should focus on increasing production and productivity of the sector. This could be partly achieved through identifying new technologies and management systems that would improve the production and productivity of the crops. Creating stable demand for surplus production would also enhance farmers' decision on wheat production consistently.

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