INNOVATIONS

Analysis of the Structure-Conduct- Performance of Wheat Marketing, The Case of Farta Woreda, South Gondar Zone, Ethiopia

Walelgn Yalew Beadgie
Agricultural Economics; College of Agriculture &Environmental Sciences; Gondar University; Gondar; Ethiopia
Corresponding Author: correspondence to Walelgn Yalew Beadgie
Email address: **walelgnyalew@gmail.com**

Abstract

Wheat is widely grown as a major food and cash crop in Southern Gondar zone,is facing with problems of seasonal supply, pricefluctuations and inadequate information on production, marketing and consumption.These problems are more acute in urban areas. This research attempted to analyze the structure-conduct- performance of wheat marketing, the case of farta Woreda, South Gondar zone, Ethiopia with specific objective of analyzing the structure-conduct- performance ofwheat marketing in the area, assessing SWOTanalysis and identifying major participants and demonstrate marketing chains of wheat marketing in the study area. Primary data were collected from 154 wheat producers and 30 wheat traders.Based on multi-stage random sampling procedures both probability sampling and non-probabilitysampling procedures were followed to select six kebeles.Structured interview schedule and questionnaire was used for collecting the essentialquantitative and qualitative data from the sampled farmer respondents and wheattraders. To generate qualitative data, field observations; informal interview with keyinformants was conducted. The quantitative data were analyzed using descriptivestatistical tools and the S-C-P framework was used to meet this objective using market performance indicators, as of marketing margin analysis, marketing structure indicators, as of market concentration ratioand market conduct explanationof wheat market in the study area. The S-C-P model identified that the markets for wheat in the study area were non-competitivetype. The survey result indicated that urban retailers have higher marketingmargins which diminishes producers share more than other traders. Generally, wheatmarketing system in the study area seemed to be inefficient and underdeveloped. Thus,marketing system development interventions should be aimed at addressing both wheatproduction technological gaps and marketing problems.

Key words: 1. S-C-P model;Marketing channel 2. Marketing Chain 3. wheat

Introduction

1.1. Background Justification

Rural development is a base for development in Ethiopia, and its success is mainly dependent on the performance of the agriculture sector which Contributes to 39% of the total GDP, 60% of foreign exchange earnings and absorbing 73% of the labour force, agriculture is still to be the main back bone of the economy(CSA, 2016). Agricultural producers were subsistence farmers with small holdings, often divided into several plots. About 90 percent of the agricultural product is produced on small holder farmers in the highlands. In the countries long term economic development strategy like as of ''Agricultural development lead industrialization'' has been put aim small holder private agricultural economy with aim of maintaining food security and strengthen economic growth(Brandsma *et al.,* 2012).

The economy of Ethiopia depends on agriculture and in turn other economic activities depend on agriculture, including marketing, processing, and export of agricultural products. A huge part of exports commodity is supported by the small agricultural cash crop sector.

The transformation of the production mechanism both for major domestic and export farm commodities requires the existence of efficient marketing system. The performance of agricultural marketing system in Ethiopia is hindered by many factors such as: low quality of agricultural produce, lack of market facilities, low level of extension services which avoid marketing development, poor linkage of research and extension, absence of marketing information and excellent services, inflated price and supply fluctuations, limited access to credit, not efficient handling including, storage, packaging and transportation problems which accounts for about 66% of the marketing cost(Gani & Adeoti, 2011).

In Ethiopia, Cereal production and marketing are the means of livelihood for millions of small holder households and it constitutes the single largest sub-sector in economy. Cereal accounts for roughly 60% of rural employment, 80% of total cultivated land, more than 40% of a typical household's food expenditure, and more than 60% of total caloric intake. According to available estimate, cereal production represents about 30% of gross domestic product (GDP). This calculation follows from the fact that cereals contribute to agricultural GDP is 65% (Arinloye *et al.,* 2015). In the country, Cereal products are also the major stable food crops. Out of the total grain crop area, 78.17% (9,601,035.26 hectares) was under cereals. Teff, maize, sorghum and wheat took up 22.23% (about 2,730,272.95

hectares), 16.39% (about 2,013,044.93 hectares), 13.93 % (1,711,485.04 hectares) and 13.25% (1,627,647.16 hectares) of the grain crop area, respectively. Cereals contributed 84.96% (about 196,511,515.46 quintals) of the grain production. Maize, teff, wheat and sorghum made up 26.63% (61,583,175.95 quintals), 16.28% (37,652,411.66 quintals), 14.85% (34,347,061.22 quintals) and 15.58% (36,042,619.65 quintals) of the grain production, in the same (CSA, 2015)

In the Amhara Region; Agriculture is the backbone of the regional economy; contributing for about 73% of the regional GDP and more than 90% of the total employment (Yoon & York, 2017). Out of the total land size of the region of land had been used for the production of cereals, 3,254,156.12hectares; the estimated production was about 59,051,697.91quintals at yield of 16.75 of these 494,625 hectares was covered by wheat contributing 13,387,027.21quintals(CSA, 2018). Cereals account for more that 80 percent of cultivated land and 85 percent of total crop production. The principal cereal crops in the Amhara Region are teff, barley, wheat, maize, sorghum and finger millet (*ibid*). Pulses and oil crops are the other major categories of field crops. Based on thereport of bureau of agriculture &rural development (BOARD), East Gojam, west Gojam, South Gondar zones andFarta district are the major cereal producingareas in the region.

In South Gondar Zone; agriculture is the backbone of the economy. Out of370,138.47 hectares of cereal crops, 6,450,970.22 quintal is produced of which 36,417.32 hectares was covered by wheat with total production of 860,616.98 quintals (CSA, 2018). Farta woreda district is one of the 105 woredas in the Amhara region that can grow diverse annual and perennial crops required for household consumption and for the market. According to(Taffesse *et al.,* 2011)the major cereals crops grown in the woreda include maize, teff, wheat, sorghum, finger millet and barley which are dominantly produced in the woreda. Production of wheat by smallholder farmers of the woreda is mainly for market in the area. According to (CSA, 2015)the land area covered by maize and wheat in the woreda was 9065.5 and 7239 hectares respectively. The woreda produced 132,112.6 and 120,197 quintals of maize and wheat respectively.

1.2. Statement of the problem

The study area comprises mixed farming zones where crops are grown for food and cash.Among producing crops wheat, barley, teff, finger millet and maize are crops farmersusually market them for their cash purposes, Hence different studies have been conductedin different areas about marketing aspects of these crops, for example (Alene *et al.,* 2008) conducted a study using marketing cost and margin analysis on performance of cattle marketing system in southern Ethiopia with special emphasis on Borena found that butchers at Addis Ababa (Kera) market received relatively a larger

share from total gross marketing margin amounting to 69.5%, 63.4% and 61.6% for cattle supplied from Yabelo, Negelle and Dubluk markets, respectively.

However, S-C-Paspects of wheat crops were not undertaken in the study areawhich have potential production volume and marketability problem of wheat at all levelsand the socio-economic variable change and their influence on the quantity supplied ofwheat still unresolved in the study area. Therefore, the study was designed toaddress the prevailing information gap on the subject and contribute to properunderstanding of the challenges and assist in developing improved market developmentstrategies to benefit of smallholder farmers, traders, and other market participants.

1.3. Objectives of the study

1.3.1. General Objectives

The general objectives of the study were to analyze the S-C-P of wheat marketing and assess the SWOT analysis in the study area.

1.3.2. Specific Objectives

- To identifying major participants and demonstrate marketing chains of wheat marketing in the study area.
- To analyze the Structure-Conduct-Performance of wheat marketing in the study area.
- To assess the SWOT analysis of wheat marketing in the study area.

2. Research Method

2.1. Description of the study area

The study was conducted in Farta district ruralhouseholds, South Gondar Zone, Amhara National Regional State. Amhara National Regional State is located at 9° and13° 45'north latitude and 36° and 13 45' eastlongitude. The land area covers about 170,752 Km^2. It is bordered with Afar in the east,Benishangul Gumuz in the south western, Oromia in the south and South western, Tigrayin the north and with the Sudan in the west. Farta district is bordered on the South byMisraq Este, on the west by Fogera, on the north by Ebenat, and on the east by LayGayint. Towns in the District include Gasay and KimirDingay. The town of Debre Taboris surrounded by Farta District administrative kebeles. The District specific location liesbetween 11^0 32' to 12^0 03' latitude and 37^0 31'to 38^0 43'longitude (Desta, 2014)

Based on the 2012 national census conducted by the Central Statistical Agency ofEthiopia (CSA, 2016)this District has a total population of 264,273 with male 133,923 andfemale 130,349 With an area

of 1,070.77 square kilometers, Farta has a populationdensity of 246.81, which is greater than the Zone average of 145.56 persons per squarekilometer. A total of 49,986 households were counted in this district, resulting in anaverage of 4.64 persons to a household, and 48,465 housing units. Largest ethnic groupreported in Farta was the Amhara (99.95%), Amharic was spoken as a first language by99.96%, and 99.57% of the population practiced Ethiopian Orthodox Christianity.

The district is characterized under *Woina Dega*agro- ecological zone. Theme an maximum, minimum and annual temperature of Farta district is 21^0c from February to May, 9.6^0c from June to January and15.5^0c respectively. The rainfall pattern in the district is uni-modal. According to theme teorological report, the mean annual rainfall is 1570 mm. Rain usually starts in mid-March, but the effective rainy season is from May to mid-September with mean precipitation of 1950 mm. There are four main seasons in Farta District, namely Tseday, from September to November, Meher from December to February, Beg a from March to May, and kiremt from June to September. Agriculture activities are planned around the Kiremt rains that fall from June to September. Land preparation begins in February and continues until May when long cycle Maize, Sorghum and Finger millet is planted. A second land preparation phase starts during the rainy season in August, for the cultivation of short-cycle chickpea and vetch starting in September. The consumption year begins in October with the Maize and Finger millet harvest. Chickpea and Vetch are harvested in January. In terms of topography, 45% of the total area is gentle slope, while flat and steep slope lands account for 29% and 26%, respectively. The District has an altitude that varies between 1900 to 4035 meters above sea level (Desta, 2014)

In terms of land use pattern, an estimated 65% of the area is cultivated and planted with annual and perennial crops, while area under grazing and browsing, forests and shrubs, settlements and wastelands account for about 10, 0.6, 8 and17% respectively. 50%, 30% and 20% of the soil are brown, red and black respectively (OoARD). Fertile clay and clay loam soils present the potential for good harvest from the production of crops. The district has a total livestock population of 432,822(OoARD). In Farta district, agriculture contributes much to meet major objectives of farmers such as food supplies and cash needs.

The sector is characterized by its rain fed and subsistence nature. The study area comprises mixed farming zones where crops are grown for food and cash, and livestock are kept for complementary purpose, as a means of security during food shortage, and to meet farmers' cash needs. The dominant crops grown in the district are barley, wheat, teff, sorghum, maize; field beans, peas, chickpeas, oil crops and root and tuber crops like potato, etc. Field beans, teff and wheat are also market crops for cash needs in addition to maize. The map location of the study area is as follows.

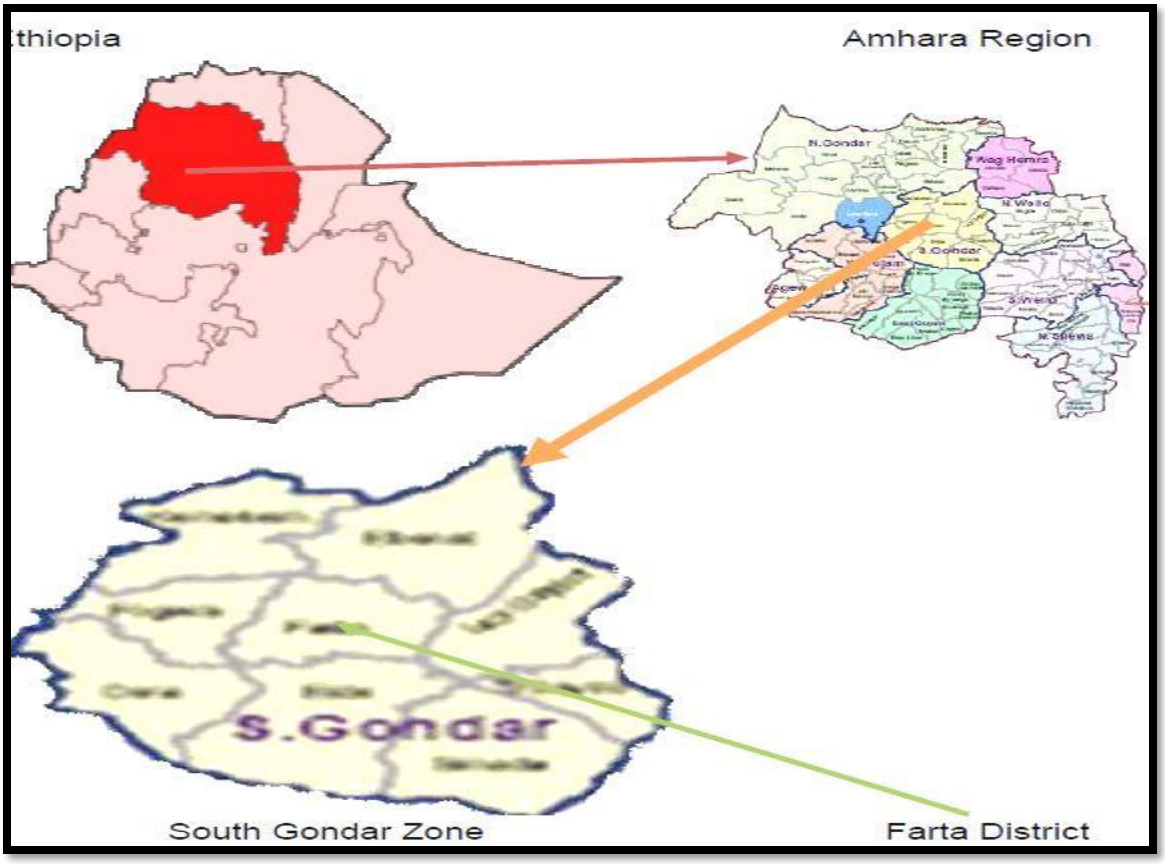

Figure 1: Geographical location of the study area.
Source: (Mequanint, 2010).

2.2. Data Sources and Requirements

In this study both the primary and secondary data were collected.

Primary data: its source was smallholder farmers randomly selected from six differentrural PAs and traders at different levels ranging from farmer traders to wholesales supplyto regional level. In this study primary data were collected focusing on prices, volumeand direction of trade, identification of market participants, relationship among marketingagents, role of marketing agents, number of buyers and sellers in the market, marketingfunctions, facilities and services, production and marketing costs, production andmarketing support services, and other socio-economic variables of wheat producers andtraders.

Secondary data: these are data which were collected reviewing documents of secondarysources namely Farta woreda office of Agriculture and Rural Development, Office ofSmall-Scale Trade and Transport, books of Central Statistical Authority (CSA), andBureau of Agriculture and Rural

Development, Bureau of Finance and EconomicDevelopment of Amhara Region whenever necessary. Beside relevant published andunpublished reports this data was also gathered using browsed websites, and bulletins togenerate relevant secondary information focusing on wheat marketing performance and conduct. Furthermore, fromthese secondary sources data on prices, output, and number of licensed wheat traders,wheat marketing system, and legal requirement to enter wheat trading business and dataon other socioeconomic variables were taken.

2.3. Sampling Procedure

For the study of S-C-P wheat marketing,Fartadistrict was selected purposively. Todevelop sampling frame for the study, multi-stage sampling technique was used. UnderMulti-stage sampling, random sampling from probability sampling techniques andconvenient sampling from non-probability sampling techniques were utilized.The sampleframe of the study was the list of the targeted population of households' PAs in Fartadistrict. Due to time and budget limitations and accessibility problems, the study wasconducted only in 6 PAs and three market towns, two Woreda towns namely Gassy andKimirdingay, and one zone town namely "Debre Tabor" purposively.

Multi-stage random sampling procedure was employed to select potential wheat producerhouseholds. In the first stage since PAs in the study area surrounds the capital city ofSouth Gondar Zone, "Debre Tabor" taking as a center based on distance andinfrastructural facilities, potential wheat producer PAs from the district was stratifieddepending on farness and nearby through stratified sampling method by considering thetotal number of 41 kebeles in the district.In the second stage, potential wheat producers PAs (3PAs from nearby) and (3 PAs fromfar) were selected using convenient sampling.And in the third stage using the population list of wheat producer farmers from sample PAs, the intended sample size was determined proportionally to population size of wheat producer farmers. Then 154 representative households were randomly selected using simple random sampling technique. According to (Joskow & Yamane, 1965)the sample size is determined by considering the confidence level, the degree of variability and level of precision. The formula used to calculate and determine the sample size is: -

$$n = \frac{N}{1+N(e)2}$$ Where: n is the sample size, N is the population size (total household size) and e is thelevel of precision. The minimum level of precision is acceptable at 10%. However, forthis study 8% of precision level was used. Based on the number of the total households(9852) in the sampling frame, the formula equated and reached a minimum of 154respondents to be drawn. Then representative households were randomly selected usingprobability proportional to sample size (PPS).

Sampling of traders is not an easy task for the researcher; this might be due to the nature of their mobility and complexity of the work. The objective of the research is to empirically capture the actual practice and behavior of the wheat traders. A list of 24, 90 and 141 registered wholesaler and retailer traders in Gasay, Kimirdingay and Debre tabor towns were collected from the Office of Urban Development, Trade and Transport in these woreda respectively. A sample of 30 wheat traders were randomly selected from the three markets in Gasay, Kimirdingay and Debre tabor towns. An attempt was made to incorporate licensed and un-licensed traders.

2.4. Method of Data Collection

The data were collected formally by the method of individual interview using pre-tested structured interview schedule questionnaire and informally key informants using checklists. Then five enumerators were given training and briefings on the objective, contents of the interview schedule and were also acquainted with the basic techniques of data gathering and interviewing techniques and on how to approach farmers.

Primary data were collected using two types of questionnaires, one for farmers and the other for traders by the well-equipped enumerators. Primary data were also collected through key informant interviews. Moreover, the questionnaire for traders was covered the following main areas: trader characteristics, trading activities and marketing costs and annual volumes of purchases and sales etc. Secondary data were gathered to support the information to be collected from primary sources.

2.5. Method of Data Analysis

Generally, in this study descriptive statistics was employed.

2.5.1. Descriptive Statistics Analysis

In this study, data were analyzed using different quantitative and qualitative procedures and methods. The important statistical measures that were used to summarize and categorize the research data are means and percentages, maximum, minimum and Chi-square test for dummy variable.

2.5.1.1. Structure- Conduct - Performance (S-C-P) Analysis

The S-C-P framework was used to meet the objective of this research using market performance indicators (marketing margin analysis), marketing structure indicators (market concentration ratio)and market conduct explanationof wheat market in the study area.

Market Concentration Analysis: The perfect competition model was used as a standard to studythe structure of the market. Here market concentration was used as a measure of marketstructure. The

greater the degree of concentration, the greater will be the possibility ofnon-competitive behavior, such as collusion, existing in the market.

Market concentration calculation: - The concentration ratio (market ratio) wascalculated using the formula: -$si = \frac{vi}{\sum vi}$Where S_i - market share of buyer i, v_i - amount of product handled by buyer i ,$\sum vi$ - Total amount of product handled, Then

C= $\sum_{i=1}^{N} si$Where C - concentration ratio, S_i - percentage share of the i^{th} firm

N - Number of largest firms for which the ratio is going to be calculated.

According to(Bellemare, M. F., 2006)bring into play as a rule of thumb, four largest enterprises concentration ratio of 50% or more (an indication of a strongly oligopolistic industry), 33-50% (a weak oligopoly) and less 33% (competitive industry). The problem associated with this index is the arbitrary selection of N (the number of firms that will be taken to compare the ratio).

Market Conduct: - There are no agreed up on procedures for analyzing the elementof market conduct. Market conduct defines the conditions which make possible exploitive relationship between sellers and buyers. It is a systematic way to detect indication ofunfair price setting practices and the conditions under which practices are likely toprevail. In this study the researcher was utilized conduct of the wheat market to beanalyzed in terms of the traders' characteristics, price setting and purchasing and sellingstrategies.

Marketing Margin Analysis: - The approach to measure marketing performance.In a commodity subsystem approach, the institutional analysis is based on the identification of the marketing channels. When there are several participants in themarketing chain, the margin is calculated by finding the price variations at differentsegments and by comparing them with the final price to the consumer. The consumerprice is then the base or the common denominator for all marketing margins. Computing the total gross marketing margin is always related to the final price or the price paid by the end consumer and then expressed as a percentage.

Marketing Margin Calculation: - was calculated taking the difference between producers and retail prices. Net Marketing Margin (NMM) is the percentage over the final price earned by the intermediary as his net income once his marketing costs are deducted. The equation tells us that a higher marketing margin diminishes the producer's share and vice-versa. It also provides an indication of welfare distribution among production and marketing agents. The gross not net marketing margin advised to be used due to warn.

To find the benefit share of each actor the same concept was applied with someadjustments (Abera, 2009). In analyzing margins, first the Total Gross MarketingMargin (TGMM) was calculated. This is the

difference between producer's (farmer's)price and consumer's price (price paid by final consumer) i.e.

$$\text{Tgmm} = \frac{\text{Consumer}'\text{s price} - \text{Farmer}'\text{s price}}{\text{Consumer's price}} \text{x}100\%$$

Then, marketing margin at a given stage, "i" (GMM_i) was computed as:

$$\text{Gmmi} = \frac{\text{SPi} - \text{PPi}}{\text{Tgmm}} \text{x}100\%$$

WhereSP_i=selling price at i^{th} link and PP_i=purchase price at i^{th} link

$$\text{Gmmp} = 100\% - \text{Tgmm}$$

Where Gmmp- Producers' participation (farmers' portion)
Total gross profit margin also computed as:

$$\text{Tgpm} = \text{Tgmm} - \text{Toe}$$

Where, Tgpmis total gross profit margin, Tgmmis total gross marketing margin and Toeis total operating expense.

Similar concept of profit margin that deducts operating expense from marketing marginwas done by (Kabiti *et al.,* 2016)

Then profit margin at stage "i" is given as:

$$\text{GPMi} = \frac{\text{GMMi} - \text{OEi}}{\text{TGPM}} \text{x}100\%$$

WhereGPM_i- Gross profit margin at i^{th} link, GMM_i -Gross marketing margin at i^{th}link, OE_i - Operating expense at i^{th}link, TGPM-Total gross profit margin.

The marketing margin was compared with marketing service costs and the results were interpreted. Margins at each stage were calculated and the shares also were compared.

3. Result and Discussion

3.1. Analysis of the Structure-Conduct-Performance of wheat Marketing

Before proceeding to the calculation share of profit and profit margins, the underlying assumptions must be explicit. Hence the following points were considered in the calculation of share of profits and profit margins.

- The price of wheat per quintal is estimated by market price.
- Wheat produce is measured in "quintal" per hectare.
- Transportation cost by donkeys', by cart and car fromfarm to market was calculated based on the amount ofquintal to be transported per each mode of transportation type.
- Labour cost is estimated based on the price or wage oflabour in each locality.
- The Price of a pair of oxen/plaguing type per day is estimated based on the rental value in each locality.
- A 12% interest rate per month is considered for theinterest rate calculation which is available for loans orcredits from Amhara Credit and Saving Institute (ACSI).

3.1.1. **Production and Marketing of Maize**

Farmers in the study area produced crops mainly for family consumption and sale to earn cash to cover family expenditure.As indicated in the Table 1 below farmers obtained the highest yield from wheat; maize is the next important crop, which has better yield and competing with Teff.

Table 1: Crop productivity and marketing (Mean).

Variables	Wheat	Maize	Teff	Barley	Fingermilet	Sorghum
Area cultivated (ha)	0.32 (0.19)	0.17 (0.13)	0.28 (0.21)	0.13 (0.13)	0.05 (0.10)	0.01 (0.04)
Quantity produced per household heads (Quintal)	7.48 (4.00)	4.14 (2.97)	4.76 (2.56)	3.05 (2.91)	1.13 (2.10)	0.12 (0.54)
Productivity per hectare (quintal)	26.39 (12.89)	20.42 (13.68)	22.00 (13.84)	20.12 (18.98)	7.45 (14.66)	0.75 (3.45)
Amount marketed per household head (Quintal)	1.48 (1.68)	0.74 (1.00)	0.55 (1.71)	0.26 (1.90)	0.09 (0.53)	0.40 (0.18)

Source: Survey result (2020). Figures in parenthesis are standard deviations.

3.1.2. **Traders' Resource and Capital Ownership**

As major Agricultural production is based upon the summer rainy season, storage plays an important role in wheat market performance and traders' marketing operations.

Table 2: Resource Ownership and Capital of Traders (Percent, Mean)

Assets	Sample market place		
	Debre tabor	Kimirdingay	Gassay
Sore (Yes, %)	30	20	10
Storing capacity (Quintal) mean	50.7	72	32
Mobile phone (yes, %)	40	30	20
Land lines (yes, %)	*	*	*
Trucks (yes, %)	32	*	*
Weighing scale (yes, %)	36.7	20	10
Motor cycle (yes, %)	6.7	3.3	*

Source: survey result (2020). *, Stands for values equal to nil / zero

The initial average working capitals of farmer traders, urban assemblers, urban retailers and wholesalers were ETB 90, ETB 306.67, ETB 1900 and ETB 2766.67 with standard deviation of 275.87, 786.06, 3278.46 and 8365.30 respectively.

Table 3: Initial working capital of sample traders (Mean).

Traders	Mean	Stad.deviation	Minimum	Maximum
Farmer traders	90	275.87	800	1000
Urban assemblers	306.7	786.06	1000	3200
Urban retailers	1900	3278.46	500	15000
wholesalers	2766.67	8365.30	3000	35000

Source: Survey result (2020)

3.1.3. **Marketing Channels and market participants**

In this study, different stakeholders were involved in bringing wheat from the point of production (farm gate) till it reached the final destination (consumers). According to the data obtained market participant identified in the transaction process of wheat in the study area include farmers/producers, farmer traders, urban assemblers, wholesalers, retailers (urban), brokers and commission agent. The market participants involved in different activities (wholesale, retail, assembly etc.), in the study area were described into different channel categories.

Channel I: Farmer ⇨ Urban assembler ⇨ Wholesale ⇨ Retailer ⇨ Consumer
Channel II: Farmers ⇨ Urban assembler ⇨ Wholesaler ⇨ Consumer
Channel III: Farmers ⇨ Wholesaler ⇨ Consumer
Channel IV: Farmers ⇨ Wholesaler ⇨ Retailer ⇨ Consumer
Channel V: Farmers ⇨ Urban assembler ⇨ Retailer ⇨ Consumer
Channel VI: Farmers ⇨ Retailer ⇨ Consumer
Channel VII: Farmers ⇨ Consumer
Channel VIII: Farmers ⇨ NGOs &GOs ⇨ Farmer users
Channel VIIII: Farmers ⇨ Farmer trade ⇨ Wholesalers ⇨ Retailer ⇨ Consumers
Channel X: Farmers ⇨ Primary cooperatives ⇨ Coo-union ⇨ Consumers
Channel XI: Farmers ⇨ Farmer traders ⇨ Consumers
Channel XII: Farmers ⇨ Urban assembler ⇨ consumers

The market channel of wheat identified above shows how wheat commodity passes through 12 complicated routes of intermediaries on the way from point of origin (producers) to reach ultimate users (consumers). From Figure 2 below one can understand that the main receivers of wheat from producers were urban assemblers, wholesalers, retailers and farmer traders who passed estimated percentage of 13.33%, 3.33%, 30%, and 10% respectively. The rest 43.44% was transacted through direct exchange between farmers (producers) and consumers, some primary cooperatives and NGOs &GOs.

Based on the volume of wheat flown the marketing channels were compared with each other.Accordingly, Channel VI carries the larger volume ofwheat transacted followed by Channel V.

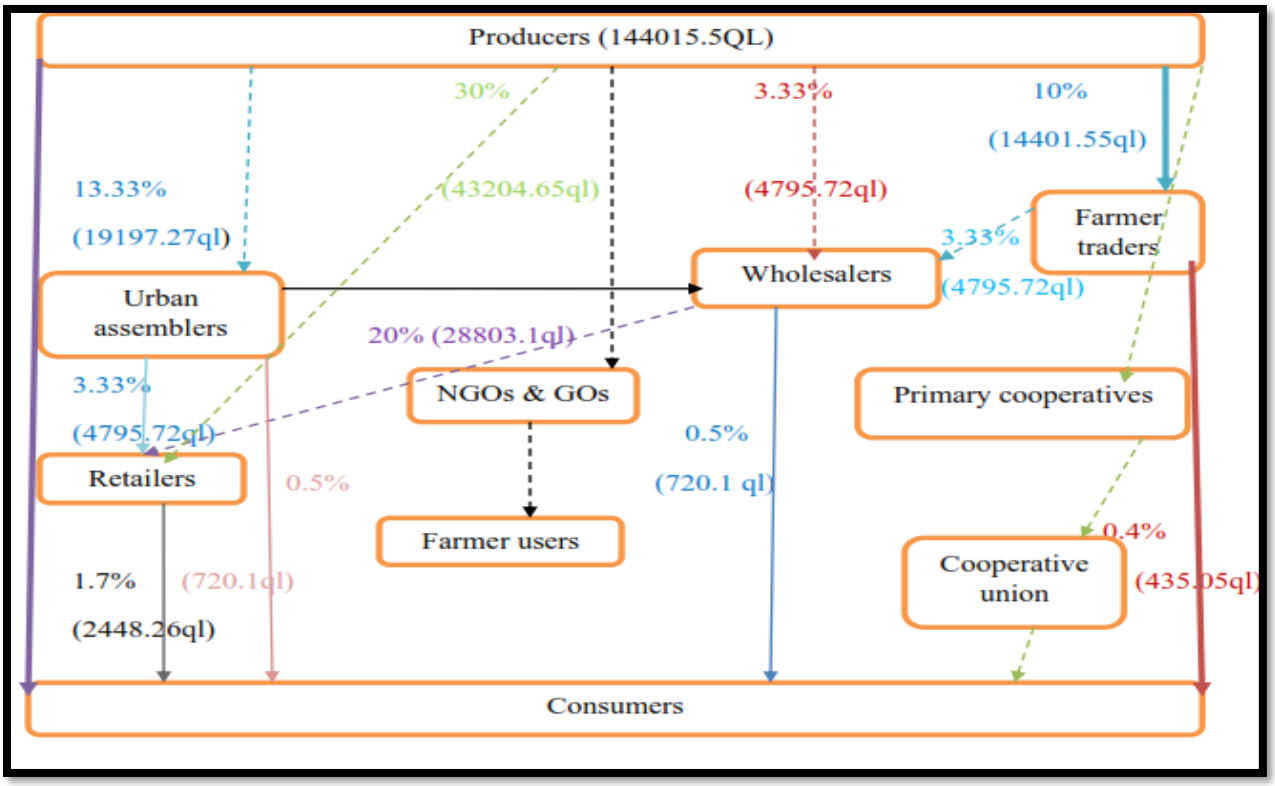

Figure 2:wheat marketing channels

Source: Survey result (2020)

3.1.3.1. Wheat Market Structure

The structural organization of the wheat market in the study area was assessed to identify if it is competitive enough to fairly benefit both of producers and the wheat traders. Market structure includes the characteristics of the organization of a market that appear to exercise a strategic influence on the nature of competition and pricing within the market (Tegegn, 2013). Therefore, in this study the structure of wheat market is characterized based on the most salient aspects under market structure as the first component is Market concentration as it has been done by(Kizito et al., 2012), the degree of transparency (market information) and entry conditions (licensing procedure, lack of capital and government policy) as did his study this way (Ermias, 2021)and marketing participants.

3.1.3.2. **Degree of market concentrations**

The concentration ratio is expressed in the terms CR_Ystands for the percentage of themarket center controlled by the biggest y firms. Four firm (CR_4) concentration ratios isthe most common concentration ratio for judging the market structure (Endris et al., 2020). ACR4 of over 50% is generally considered as strong oligopoly; CR4 between 33% and50% is generally considered a weak oligopoly and a CR4 of less than 33% isunconcentrated market. The degree of market concentration was estimated for thelicensed wheat traders in DebreTabor town using the four firm concentration ratios. The fourfirm concentration ratios were computed using the equation stated in the methodologypart.

The wheat market in the study area was identified as concentrated buyers (more buyers). Theanalysis of the degree of market concentration was carried outat DebreTabor market, wherewholesalers of the wheat commodities were significantly involved. Concentration ratiowas estimated by taking annual volume of wheat purchased in 20019/20 by sampletraders. The survey result revealed that in DebreTabor market wheat trading wasdominated by few traders (Table4)

Table 4: Concentration ratio of Debretabor wheatmarket

Sample market	Commodity	Concentration index	Rule of thump
Debretabor	Wheat	89.76%	Strong oligopoly

Source: Survey result (2020)

Table 4 above depicted that the four largest wheat traders possess 89.76% of the total volume of purchase in Debre taborwheat market. Based on the rule of thumb of market structures criteria suggested by (Endris et al., 2020), the wheat market in Debre Tabor characterized by an oligopolistic market, indicating the existence of market imperfection which shows that there is market inefficiency(market failure) in the study area.

3.1.3.3. **Degree of market transparency**

In a transparent market, participants have adequate information about their competitorsregarding their source of supply and buying prices for better decisions. The survey resultin Table 5 below depictedthat trader in the study area had varieties of wheat marketinformation sources such as personal observation to market/sale places, friends, othertraders, through phone and personal contact (visit), consumers/buyers, or a combinationof two or more information sources.

Table 5: Sources of market information by sample traders (Per cent)

Traders	Wheat Market information sources									
	Other traders		Phone		Observation		Brokers		X^2 value	P value
	N	%	N	%	N	%	N	%	10.25	0.33
Retailer	5	16.67	7	23.33	3	10	2	6.67		
Wholesaler	2	6.67	3	10	*	*	*	*		
Urban assembler	*	*	2	6.67	3	10	*	*		
Farmer traders	*	*	1	3.33	1	3.33	13.33			

Source: Survey result (2020). N stands for number of sample traders, *, represents (zero)

Survey result indicated that 23.34 %, 43.33%, 23.33, and 10% of sample traders got information from other traders, through phones, personal-observations and brokers respectively (see Table 5 for detail).

3.1.3.3.1. **Barriers to entry**

The major barriers to entry in towheat trade in the study areas included lack of working capital, price information, wheattrade license, government policy and high competition with the oligopolistic traders.Lack of capital was the major problem in wheat marketing. It was the real barrier to entry in to the wheat market. The same study was reported to be an important barrier to entry thereby resulting in imperfection of food grain, pepper and rice markets in Southern and North East Ethiopia (Wolday et al., 2014)

The survey result has shown that about 63.33% of the sample traders respond that major problem to run their business was lack of capital. The sample traders also respond that about 10%, 23.3%, 3.3% as a major problem of license, government policy and the market itself to enter into wheat market respectively. Although the working capital required was reported to vary depending upon the price level and quantity of wheat to be purchased, highamount of initial working capital was required to compute with wholesalers, collectors and the retailers, who resides in the district town. To enter in to the market more capital was needed because they have to purchase more wheat and they have to pay cash on hand at the time of purchase. Only a few traders purchased much amount of wheat as the market is characterized as oligopoly as depicted Table 4 above.

3.1.3.3.2. **Market conduct of maize trading**

In this section the conduct of wheat traders was analyzed in terms of the producers' and traders' price setting, purchasing and selling strategies.

3.1.3.3.3. **Producers price setting strategy**

According to the survey result, about 90%, 6.7% and 3.3% of sample farmer respondents reported that market price was set through traders, the farmers themselves and by the market respectively. The survey further confirmed that, about 13.3%, 43.3%, 6.7% and 36.7% of sample respondents face problem of low price after they took the product in to the market, they took their product back to home and waited till next market day, took their product to other market to sell it with better price and put their produce in homes of their relatives on market place to be sold some other day other than the market day respectively. The majority of farmers identified that price was the major determining factor that affect their decision as to whom and which market to sell their produce. Hence, there existed absence of competitive pricing system, indicating the deviation of market from the competitive market norms with price rigidity.

3.1.3.3.4. **Traders buying and selling strategy**

Generally, wheat trading is based on eye appraisal of the commodities and exchange takes place on bargaining. The strategies of traders in maximizing profit and develop bargaining power include the use of regular partner, long term relation with clients or suppliers, the use of intermediaries, trading with personalized network, availability of market information and its impact on price, feasibility of alternative market outlets and price setting practices etc. Based on the data from sample traders' survey, about 10 %, 86.7% and 3.3% of respondents reported that buying price was set by the market, by traders and purchasers respectively.

3.1.4. **Analysis of Performance of Maize Market Trading**

Marketing performance of wheatarket was analyzed by estimating the marketing margin, by taking into consideration associated marketing costs for key marketing channels. Based on production costs and purchasing prices of the major market participants along the chain, margins at farmer, urban assemblers, wholesalers and urban retailers' levels were estimated and analyzed.According to the presentation in Table 6, the total wheat gross marketing margin that was added to wheat price, while passing through marketing system to reach final destination (consumers) was 61.46%. And out of the total gross marketing margin of wheat, 61.46%, urban retailers received the highest of all marketing agents which is 18.95%. The remaining 15.58%, 18.5% and 8.43% of marketing margin were received by wholesalers, urban assemblers and farmer tradersalong different channels respectively.

According to the survey result, wheat producers share in consumer price was 38.54%. As higher marketing margin diminishes the price received by producers, urban retailers have higher marketing margins which diminishes producers share more than other traders. By simply buying from the farmers and selling to consumers, traders took 54.67% of the total profit margin. While farmers, doing all the work of producing wheat and bearing the associated risks, took 45.33% of the profit margin. Farmer trader, urban assembler wholesalers and retailers are responsible for 10.09%, 21.61%, 12.98% and 9.99% respectively.

Table 6: Marketing Margin of Traders (Mean)

Marketing cost (Birr/QL)	Market actors					
	Producers	Urban Retailers	Wholesalers	Urban assembler	Farmer traders	Total
Purchasing price	-	438.24	476	447	405	1766.24
Production cost	142	*	*	*	*	142
Marketing cost						
Labour	4.21	6.23	1.80	0.07	*	12.31
Transport cost	1.30	14	4.5	3.17	0.47	23.44
Storage cost	*	1.67	0.73	*	*	2.4
Storage loss	*	2.02	0.13	*	*	2.15
Warding &watch cost	*	10.17	4.67	*	*	14.84
Other cost	*	17.33	12.60	*	*	29.93
License & tax	*	3.52	0.45	*	*	3.97
Total marketing cost	5.51	54.94	24.88	3.24	0.47	89.04
Total cost	147.51	54.94	24.88	3.24	0.47	231.04
Selling price	340	535.59	556	542	448.3	2421.89
Gross marketing margin	198	97.35	80	95	43.3	513.65
% Share of margin	38.54	18.95	15.58	18.5	8.43	100
Profit margin	192.49	42.41	55.12	91.76	42.83	424.61
% Share of profit	45.33	9.99	12.98	21.61	10.09	100

Source: - Own Computation from Survey result (2020). *, stands for (zero).

3.1.5. **Assessment of SWOT Analysis of wheat Marketing**

Table 7: SWOT analysis matrix

Strength on production and marketing	**Weakness on production and marketing**
Production	**Production**
• Wheat production by cluster	• Limited access to and supply of agricultural input like reliable (quality) seed
• Increment of wheat producer	• Lack of chemicals and high price
• Producer was reported fairly profitable	• Harvesting ofWheatbefore maturity date
• Increasing phone service for information	• Sale problem and lack of persistent trader
• Increasing habit of row planting system	• Insufficient product handling
• Accumulated traditional skills	• Poor agronomic practice
• Advancement of input utilization	• Usage of agricultural input beyond the recommended capacity
• Improving road access	• Absence or poor Post harvest Technology
• Self-preparation of land	• Lack of coordination(unplanned) during production
• Potential for production growth	• Producing low quality wheat product
• Wheat Seedling through row	• Lack of improved and high yield varieties
Marketing	**Marketing**
• Payments received at delivery	• No suitable road infrastructure for marketing
• Even if there is no market integration and price difference, there is Increment of wheatproduction.	• Lack of credit service,limited marketing extension service
• High supply	• Improper selling and buying practice
• Employment	• Absence of standard law practices
• Buying ofwheat on farm gate	• Imperfect marketing system
Opportunity on production and marketing	• Inadequate marketing information
Marketing	• Exploitation of producer by illegal traders
• Availability of expert field visit	**Threat on production and marketing**
• Chance of controlling intermediaries	**Marketing**
• Wheat producers gain selling price at farm gate	• Lack of complete and symmetric information
• Availability of farmers training center for information	• Lack of market integration
• Growing buyers for wheatproduct	• Storage and transportation loss
Production	• Lack of warehouse and organizational/ institutional supporting mechanism
• Farmers usually use cluster production system	• Weak development agent support
• Increase of construction of FTC almost in all kebeles	• Lack of coordination

• Fertile arable land and abundant	• Low product price
• Knowledge sharing through experience on field trip,personal observation	**Production**
• Access of labor	• Availability of drought and frost
	• Existence of pest and diseases
	• Shortage of irrigation practices due to water shortage
	• Water shortage for good wheat maturity
	• Non- availability of quality seed

Source: Survey result (2020)

4. Conclusion and Recommendation

4.1. Conclusion

An efficient agricultural marketing is crucial for effective agricultural and rural development, particularly with regard to sustained increase in agricultural production and farmer's income.Wheat is widely grown as a major food and cash crop in Southern Gondar zone which is faced with problems of shortages, seasonal supply and price fluctuations and inadequate information on production, marketing and consumption. These problems are more acute in urban areas. Primary data were collected from 154 wheat producers and 30 wheat traders. Based on multi-stage random sampling procedures both probability sampling and non-probability sampling procedures were followed to select six Peasant Associations. Structured interview schedule and questionnaire was used for collecting the essential quantitative and qualitative data from the sampled farmer respondents and wheat traders.

The quantitative data were analyzed using descriptive statistical tools and the S-C-P framework was used to meet this objective using market performance indicators, as of marketing margin analysis, marketing structure indicators, as of market concentration ratioand market conduct explanationof wheat market in the study area. The S-C-P model identified that the markets for wheat in the study area were non-competitive type. The marketing channels of the wheat markets in terms of quantity flow from producer toconsumer passed through different intermediaries. The important wheat marketing chainshave been identified. Much of the marketed surplus was channeled through urbanretailers, urban assemblers, and wholesalers, farmer traders and direct to consumers. Thestructural organization of the wheat market in the study area was assessed to identify if itis competitive enough to fairly benefit both producers and the wheat traders.

Thestructure of the wheat market indicated that the four-firm Concentration Ratio (CR4.), thatis, the share of the largest four traders in the total volume of wheat purchased was veryhigh. Four largest

wheat traders possess 89.76% of the total volume of purchase inDebreTabor market. Based on the rule of thumb of market structures criteria suggested(Bellemare, M. F., 2006)the wheat market in Debre Tabor has shown an oligopolistic market,indicating the existence of market imperfection. The survey result indicated that urban retailers have higher marketing margins which diminishes producers share more than other traders.

4.2. Recommendation

According to the survey result, wheat producers share in consumer price was 38.54%.Therefore,

- ⇒ There should be a strong emphasis on creating good market networks and linking farmers to reliable markets information.
- ⇒ Both government and non-government actors should invest on linking farmers to different information sources to enhance farmers' access to information on price, good tillage practices, and market demand.
- ⇒ Because wheat is among the commodities with an increasing acreage in the study area, links should be created between producers and market information channels. This can be done either by assigning marketing specialists to work at a fee for farmers at the district level or through registering the crop under the Ethiopian Commodity Exchange (ECX) in which market information can be delivered directly from ECX to farmers as it applies coffee, white beans, and sesame.
- ⇒ Generally, wheat marketing system in the study area seemed to be inefficient and underdeveloped. Thus, marketing system development interventions should be aimed at addressing both wheat production technological gaps and marketing problems.

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