

Original Research Article

# Surveying of Cereal Crops Market Chain in West Shoa Zone of Oromia Regional State, Ethiopia

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## ABSTRACT

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. But, in the country there is a great market fluctuation from time to time. Markets and marketing system do not develop simultaneously with economic growth. In From within agriculture, staple crops have stronger growth linkage resulting from more than proportionate increase in total Growth Domestic Product (GDP). But, market chain is weak and even not available in some areas. Therefore, the aim of this study was assessing the market chain of cereal crops in Dandi, Toke Kutaye and Ambo districts of Oromia Region, Ethiopia to know whether there is satisfactory market chain in the study area.

Among 70 sample size of the study, 20, 22, 28 of the respondents were from Dandi, TokeKutaye and Ambo districts respectively. Primary data were collected through questionnaire, interview and focus group discussion while secondary data were obtained from internet and relevant documents. Descriptive statistics like graphs, charts, arithmetic mean, standard deviation and frequency distribution were used by utilizing SPSS, version 20 to analyse the collected data. The research result identified that there was no strong market chain in specified area for specified commodity. It was concluded by this study that strong market chain can exist if stakeholders are willing, all the actors are transparent, producers focused on trade and consumers, and government facilitation.

**Key Words:** Market, Chain, and Cereal.

## I. BACKGROUND OF THE STUDY

Agriculture is the core component and driver for Ethiopia's growth and long-term food security. The contributions are high: 15 to 17 percent of the Government of Ethiopia's expenditures are committed to the sector. Agriculture directly employs 80 percent of the total population, 43 percent of gross domestic product (GDP), and over 70 percent of export value (UNDP, 2013). Despite the considerable progress made in the sector, ensuring commercialized production remains one of the major challenges facing millions of people. The Ethiopian economy is dominated by agriculture that accounts for over 50 per

cent of Gross Domestic Product (GDP), 90 per cent of the export earnings, and 88 per cent of the labour force. It also supplies food to the urban areas and raw materials to the manufacturing sector. A variety of crops are grown seasonally in different parts of Ethiopia (Center for RATES, 2003).

Agriculture employs more than two thirds of Ethiopia's population and is the backbone of the country's economy. While Ethiopia is one of the world's most vulnerable countries to drought and other natural calamities, it exhibits strong prospects for economic growth. The major grain crops grown in the country are Teff (a gluten-free small grain), Wheat, Corn,

Barley, Sorghum, and Millet (Abu and Teddy, 2014). In the country, cereals are also the major staple food crops taking a significant share of area cultivated and volume of production obtained (CSA, 2007).

Among many cereal crops Teff is a major staple food crop in Ethiopia. Teff is grown at middle elevations between 1,800 and 2,200 meters above sea level and in regions that have adequate rainfall. Compared to other cereals, Teff is considered a lower risk crop as it can withstand adverse weather conditions. While research on improved Teff varieties has been done since the mid-1950s, investments have been limited and only a small number of improved varieties have been released, i.e. about 20 in total (Fufaet al., 2011). Its grain is mainly used for making Enjera, a spongy flatbread, the main national dish in Ethiopia (as well as Eritrea). Teff is also valued for its fine straw, which is used for animal feed as well as mixed with mud for building purposes.

Teff is the most important crop in Ethiopia, as measured by a number of indicators. In 2011/12, it was estimated that Teff made up 20 percent of all the cultivated area in Ethiopia, covering about 2.7 million hectares and grown by 6.3 million farmers. The second most important crop was Maize at 15 percent of all cultivated area. However, given the relatively low yields of Teff, the total national production of Teff (3.5 million ton) was lower than Maize (6.1 million ton) and Sorghum. The importance of teff area-wise has increased absolutely but stayed relatively the same over time. In 2003, Teff made up 20 percent of all cultivated area as well while Maize was making up 18 percent. On the consumption side, Teff is more readily eaten by urban households than by rural households.

Berhane *et al.* (2011) show, relying on national household consumption data, that urban consumption per capita is as high as 61 kg per year. This compares to 20 kg per capita per year for rural areas. They further illustrate the high income elasticity

for Teff, evaluated at 1.10 in urban areas and 1.20 in rural areas. Teff is therefore an economically superior good that is relatively more consumed by the rich than by the poor. The lower consumption by the poor is also partly explained by the high prices of Teff which are typically twice as high as the cheapest cereal like Maize (Minten *et al.*, 2012).

Ethiopia is the second largest wheat producing country in Africa behind South Africa. Most Wheat production in Ethiopia comes from small holder farmers. Wheat is mainly grown in the central and south-eastern highlands during the main rainy season (June to September) and harvested in October-November. Arsi, Bale, and parts of Shoa are considered the Wheat growing belt. Ethiopia's Wheat production self-sufficiency is only 75 percent and the remaining 25 percent of Wheat has to be imported commercially and through food aid. The Oromia and Amhara regions produce 59 percent and 28 percent of the country's Wheat, respectively, with an additional 10 percent coming from the Southern Nations, Nationalities, and Peoples Region (SNNPR) and 3 percent coming from other regions (Abu and Teddy, 2014).

World production of barley (*Hordeumvulgare* L.) has remained stable since the 1970s. Consumption has also remained stable. World trade in barley has been around 16 million tonnes; this is much less than production, as most of the cereal is consumed locally. Barley holds a unique place in farming in Ethiopia, and various sources agree that it has been in cultivation for at least the past 5000 years in the country. The first Ethiopians to have ever cultivated barley are believed to be the Agew people, in about 3000 BC as cited by Bahey and Grando (2011).

Ethiopia is ranked twenty-first in the world in Barley production with a share of 1.2 percent of the world's total production. Barley cultivation is widely distributed across the country on over one million hectares of land and by more than four million small holder farmers. Currently, it is

grown exclusively for the domestic market and is neither imported nor exported. It is the fifth most important cereal crop in Ethiopia after Teff, Wheat, Corn, and Sorghum. There are two varieties of barley in Ethiopia: food Barley for human consumption and malt Barley which can be converted into malt, a key ingredient in beer making (Abu and Teddy, 2014). The government also believes that the success of agricultural development depends, among other things; on the existence of an efficient marketing system (Center for RATES, 2003).

### **1. REASON OF THE STUDY**

Agricultural marketing is a very important factor in economic development and lack of a well-functioning agricultural market and marketing system severely hinders the increase of social welfare, income distribution, and food security of developing countries. Moreover, markets and marketing system do not develop simultaneously with economic growth. Markets and marketing system should be organized deliberately to enable economic development (Wolday, 1994). Improved information and marketing facility enables farmers to plan their production more in line with market demand, to schedule their harvest at the most profitable time, to decide which market to sell their produce to and negotiate on a more even footing with traders and it also enables traders to move their produce profitably from a surplus to deficit market and to make decisions about the economics of storage, where technically possible. Thus the market information is critical to the law of one price and to the price discovery process (Khol and Uhl, 2002).

Undoubtedly, one of the major drawbacks of food aid to rural markets is that it may depress market prices. This is because the amount of grain that recipient households may have otherwise purchased in the market is reduced (thus reducing demand), and the potential sales of food aid onto markets (thus increasing supplies).

Subsidized sale of imported staples, therefore, has a direct impact on producers by lowering market prices (FAO, 2014). Aware of this, the government of Ethiopia has placed considerable emphasis on market and marketing issues so as to enhance rapid, sustainable and broad-based economic growth and thereby reduce poverty (Center for RATES, 2003). The efforts of increasing agricultural production and productivity have to be accompanied by a well-performing marketing system which satisfies consumer demands with the minimum margin between producers and consumer prices. Higher prices for producer can encourage farmers to adopt new technologies, increase production, (Woldy, 1994).

However, there are external and internal problems that influence the marketing efficiency in Ethiopia. This has to do with lack of pertinent market information, development of marketing institutions and marketing infrastructure such as storage, transportation, and other. Despite the grain market liberalization policy in 1991, Ethiopian grain markets remain poorly integrated and are characterized by significant price volatility. Only 28 percent of total cereal production reaches the market, suggesting considerable scope for expanding the volume of the grain market. The grain marketing chain in Ethiopia is relatively short, primarily due to the low level of commercial grain processing and a lack of specialization from grain wholesalers, who are often engaged in retail and other types of trade. This is also true for Wheat in Ethiopia as reviewed by FAO (2014).

Uncertainty about government intervention in grain markets is a major source of risk for private traders and a key reason they are reluctant to invest in grain trading. The GOE (Government of Ethiopia) estimates that over 4.5 million households are involved annually in Wheat production, but that still does not satisfy the country's annual domestic demand. Hence, a large quantity of Wheat is imported every year to

meet the rising domestic consumption demand (Abu and Teddy, 2014). As study conducted by Bedada *et al.* (2014) shows, many farmers are responded that problem of good market facilities is one of the major constraints of Barley production. The outsiders and brokers are the beneficiary of their products on behalf of the producers. Occasionally no product collectors and farmers are forced to sell with low price to local small traders.

In Ethiopia, agricultural growth induces higher overall growth than non-agricultural sectors. This leads to faster poverty reduction since it generates proportionately more income for farm households who represent the bulk of the poor. From within agriculture, staple crops have stronger growth linkage resulting from more than proportionate increase in total GDP. Moreover, such growth linkage becomes stronger overtime (Diao *et al.*, 2007). As a result, no study has been carried out in those districts on market of Teff, Wheat and Barley cereal crops. Therefore, this study was stand in assessing market chain of cereal crops (Teff, Wheat and Barley) in the specified area to address the prevailing information gap on the subject and contribute to proper understanding of the challenges and help in developing improved market development strategies to benefit smallholder farmers, consumers, traders, and other market participants.

## **2. OBJECTIVE OF THE STUDY**

The objective of this study was to survey market chain of cereal crops (Teff, Wheat and Barley) in West Shoa Zone of Oromia Regional State, Ethiopia.

## **3. IMPORTANCE OF THE STUDY**

This agricultural market profile study may help to assess the possibility of increasing market chain by identifying the causes of weak/lack market chain. This research work is expected to yield new information regarding marketing of cereal crops particularly related to Teff, Wheat and Barely for concerning bodies. The study may also serve as a spring board for further

studies in the future on related issues which are not covered in this study.

## **4. MATERIALS AND METHODS OF THE STUDY**

Selection of study area was carried out based on the potential of Teff, Wheat and Barley producing area of West Shoa zone of Oromia region, Ethiopia. Those areas were Dandidistricts (Asgori, Ginchi, Olonkomi), Ambo districts (Meti, Golja and Ambo), and TokeKutayedistricts (Guder, Babicha, and Gorosole). These districts were selected using purposive sampling technique based on the potential of specified cereal crops. To execute the survey purposive sampling procedure was used. The sample size of the study was 70 stakeholders. Among 70 sample size of the study, 20, 22, 28 of the respondents were purposely used from Dandi, Ambo, and TokeKutaye districts respectively. The study was used 70 sample size involving producers, traders and consumers. Questionnaires were distributed to 70 of respondents.

Additionally, for interview and focus group discussion, 24 stakeholders were purposely selected from each district. Questionnaire, interview, focus group discussion, internet and relevant documents were used to collect both primary and secondary data. Questionnaires were distributed to 70 of respondents, interview focus groups were held with 24 stakeholders to collect primary data. The interviewees were purposely selected from cereal crops stakeholders which were 24 in number. Both internet and relevant documents were used to obtain secondary data. Interview and focus group discussion were held with purposely selected producers/sellers, consumers and traders of the selected areas from open market and the discussion was carried with them to understand the cereal crops market chain.

Focus groups discussion was comprised about 3-5 farmers, 6-10 consumers and 2-3 traders. Although, the study was used interview in order to collect

a wide variety of data that does not requires formal testing. Subsequently, the responses were elicited from the groups' discussion after a consensus achieved among the members and from the interviewees for quantitative information. Descriptive statistics like graphs, charts, arithmetic mean, standard deviation and frequency distribution were used by employing Statistical Package for Social Sciences (SPSS), version 20 to analyse the collected data. The data gathered were organized using descriptive statistical analysis. The arithmetic mean was used at a decision point of 103.0. The implication was that a mean value above 103.0 was considered as 'disagree' and values below 103.0 as 'agree'.

## 5. RESULTS AND DISCUSSION

### 5.1 Characteristics of Respondents

Based on the data collected through different methods, the respondents' characteristics were presented as follow. As indicated below in Table 6.1.1, among the total number of respondents, 70% and 30% of them were male and female respectively. This shows, in the area, as male participation is higher than female in cereal crops market chain. Along with the sum of respondents, 38.6% of them were aged above 35 years and 11.4% of them were aged 18-25 years. This indicates as there is less involvement of young people than old people in cereal crops market chain of the selected area.

Table 6.1.1: Characteristics of Respondents by Sex and Age

Variables		Sex			Age				
Alternatives		Male	Female	Total	18-25	26-29	30-35	Above 35	Total
Respondents (N=70)	No	49	21	70	8	13	22	27	70
	%	70	30	100	11.4	18.6	31.4	38.6	100

Source: SPSS Output (2016)

Below Table 6.1.2 tells us as 4.3% and 95.7% of cereal crops market chain actors were illiterate and literate respectively. The result shows that greater number of cereal crops market chain stakeholders is an educated; at least they

could write and read. 34.3%, 20.0% and 45.7% of the respondents were producers, traders and consumers respectively. This indicates, in the area, as the number of producers is greater next to consumers followed by traders.

Table 6.1.2: Characteristics of Respondents by Qualification and Category

Variables		Qualification								Category				
Alternatives		Illiterate	1-4 Grade	5-8 Grade	9-12 Grade	Certificate	Diploma/TVET	BA/BSc	Masters	Total	Producers	Traders	Consumers	Total
Respondents (N=70)	No	3	5	7	15	6	8	23	3	70	24	14	32	70
	%	4.3	7.1	10	21.4	8.6	11.4	32.9	4.3	100	34.3	20.0	45.7	100

Source: SPSS Output (2016)

### 5.2 Market Chain of Cereal Crops (Teff, Wheat and Barley)

As shown below by Figure 6.2.1, cereal crops provided for sell in Dandi, TokeKutaye and Ambo districts are Teff, Wheat and Barley. The finding obtained through interview shows that producers provide Teff to market for sell that takes greater percentage (50%) followed by

Wheat taking 25.0%. Also there are producers who provide both Wheat and Teff taking 4.2% and both Barley and Teff taking 20.8%. Among the cereal crops provided to market for sell, Teff is the main source of producer's income and takes greater position in market chain involvement followed by Wheat.

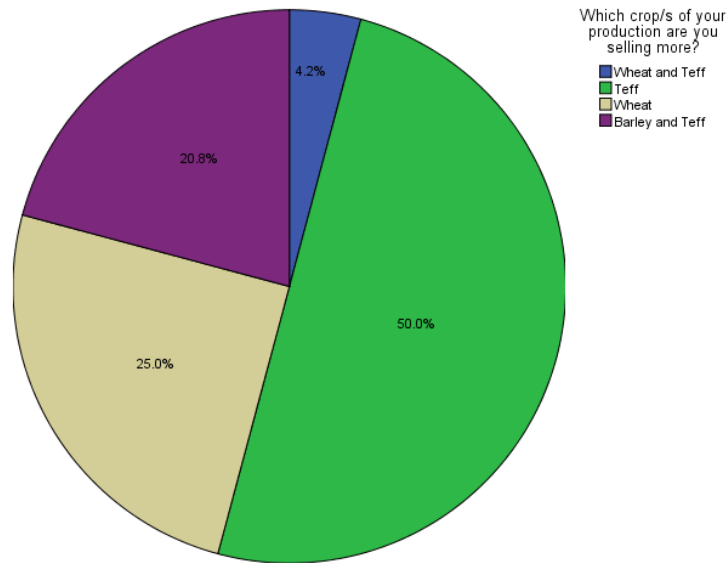


Figure 6.2.1: Cereal Crops Producers Selling More  
Source: SPSS Output (2016)

As specified in the following Figure 6.2.2, in the selected area, the interview conducted with producer's shows that producers sell their cereal crops like Teff, Wheat and Barley for different purposes. Producers sell their crops to buy fertilizers; to pay farm land yearly tax; and for home needs like to buy Ox, Cow, Sheep, Goat, cloth and educational facilities. Among these purposes, both to buy fertilizers and

for home needs takes greater percentage (37.5%) followed by others. From this finding we could understand that the main reasons of producers selling their cereal crops are to solve lack of fertilizers and for home based interests. Further, the result informs us as there is lack of government support in provision of fertilizers to subsidize the producers in the area.

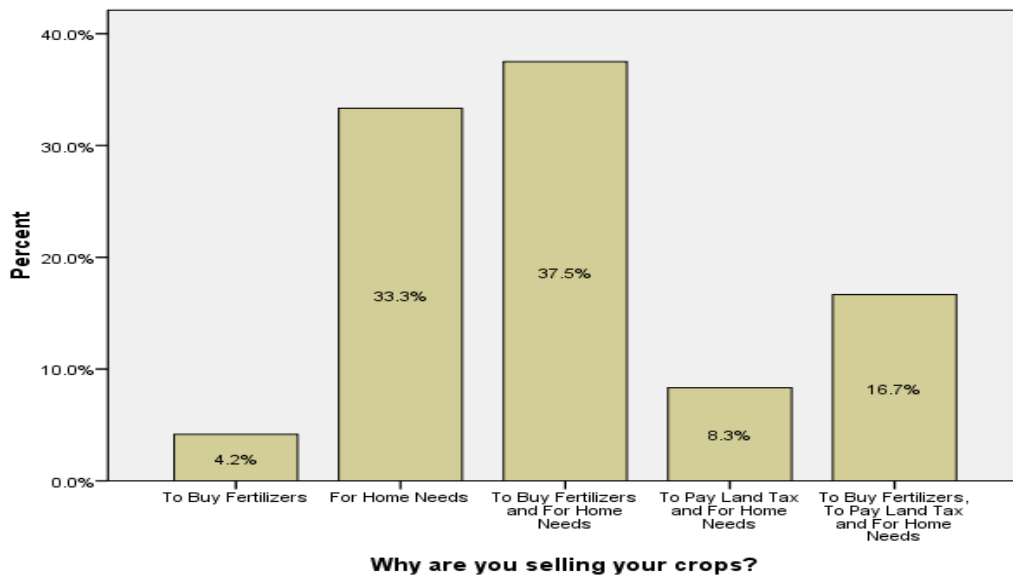


Figure 6.2.2: Purposes of Selling Cereal Crops  
Source: SPSS Output (2016)

In Table 6.2.1, for item No-1, 72.8% of respondents were agreed. As greater percentage (72.8%) or 102.2 arithmetic

mean value of respondents indicates, there is a long cereal crops market chain in the selected area. Meaning, the crops pass

through many different chains to reach consumers which could unnecessarily consumes the actor's time, increases the price of cereal crops and results costs among the stakeholders. For item No-2, arithmetic mean value of 101.7 or larger percentage (82.8%) of respondents were agreed indicating that stakeholders involving in cereal crops market chain have well understood which market chain activities are more beneficial for their value. Greater than half (57.2%) of the respondents were agreed with item No-3 indicating that actors in the area are satisfied with current market chain of cereal crops. Even if the study results positive, the percentage (57.2%) or arithmetic mean value (102.8) does not guarantee since it is almost half.

In the same Table, for item No-4, 41.5% and 48.5% of respondents were responded agree and disagree respectively. As the greater percentage (48.5%) and

arithmetic mean value (103.1) shows, in the selected districts, improvement in market chain performance has not focused on the sustainability of stakeholders. This means, while development is undertaking in market chain performance, attention is not given to the continuity of the stakeholders which could haphazardly hinders their initiation, contribution and involvement in the chain. For item No-5 the study tells us that the selected area market chain has improved the safety of products to satisfy consumers to the extent of 58.6% positive response of respondents and 102.5 value of arithmetic mean. The arithmetic mean value of item No-6 is 102.3 which indicate that greater percentage (70%) of respondents was agreed with. This finding shows as the cereal crops chain has kept the time needed to reach customers. Actors buy and sell their crops without killing time for long negotiation.

Table 6.2.1 Description of Items Related to Market Chain of Cereal Crops

S/N	Items Statement	Respondents' Responses										Mean	Std. Deviation	Decision Point
		Frequency and Percentage												
		S. Agree		Agree		Neutral		Disagree		S. Disagree				
		No	%	No	%	No	%	No	%	No	%			
1	There is a long market chain in marketing cereal crops.	26	37.1	25	35.7	2	2.9	13	18.6	4	5.7	102.2	1.281	Agree
2	I have well understood which market chain activities are more beneficial for my value.	36	51.4	22	31.4	8	11.4	4	5.7	-	-	101.7	0.887	Agree
3	I am satisfied with currently available market chain of cereal crops.	6	8.6	34	48.6	8	11.4	15	21.4	7	10.0	102.8	1.185	Agree
4	Improvement in market chain performance has focused on the sustainability of stakeholders.	9	12.9	20	28.6	7	10.0	22	31.4	12	17.1	103.1	1.346	Disagree
5	Market chain has improved the safety of products to satisfy consumers.	17	24.3	24	34.3	11	15.7	13	18.6	5	7.1	102.5	1.248	Agree
6	Market chain has kept the time needed to reach the customers.	21	30.0	28	40.0	6	8.6	12	17.1	3	4.3	102.3	1.188	Agree
7	There is improved capacity of chain actors to participate in market development.	9	12.9	25	35.7	11	15.7	21	30.0	4	5.7	102.8	1.175	Agree
8	The brokers take greater position in cereal crops market chain activities.	8	11.4	14	20.0	14	20.0	21	30.0	13	18.6	103.2	1.290	Disagree
9	The local government bodies facilitate market chain of cereal crops.	1	1.4	6	8.6	7	10.0	14	20.0	42	60.0	104.3	1.051	Disagree
10	There is clear understanding of linkages among actors to deliver a sustainable improvement.	9	12.9	18	25.7	10	14.3	22	31.4	11	15.7	103.1	1.314	Disagree

Source: SPSS Output (2016)

Item No-7 involves 48.6% and 35.7% of respondents who were replied

agree and disagree respectively. Its arithmetic mean value is less than 103

which is 102.8. This shows that the result is positive i.e.; there is improved capacity of chain actors to participate in market development if they get the chance. Item No-8 finding tells us that brokers do not take greater position in cereal crops market chain activities. They have no involvement in cereal crops marketing as 31.4% and 48.6% of respondents were replied agree and disagree respectively and 103.2 arithmetic mean value. To item No-9, 80% of respondents were responded disagree.

This finding shows that the local government bodies do not provides support to facilitate cereal crops market chain in the selected districts to the extent of 104.3 arithmetic mean value. For item No-10, 38.6% and 47.1% of respondents were replied agree and disagree respectively. The result indicates that there is no clear understanding of linkages among actors to deliver a sustainable improvement in the cereal crops market chain as per 103.1 arithmetic mean value.

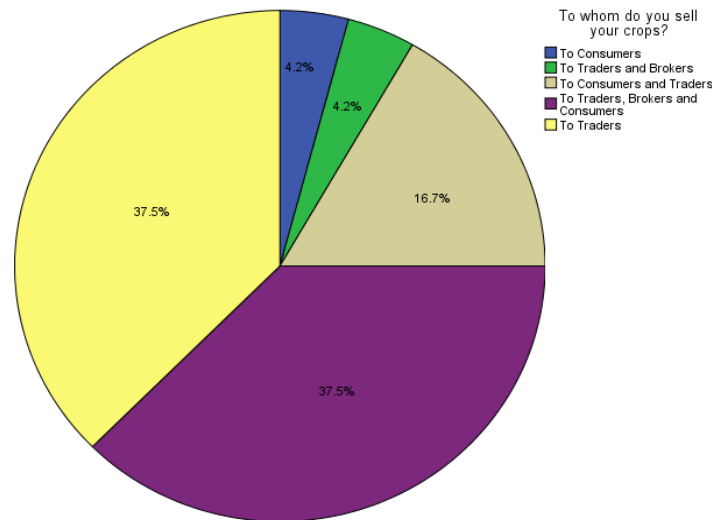


Figure 6.2.3: Buyers to Whom Producers are Selling their Crops  
Source: SPSS Output (2016)

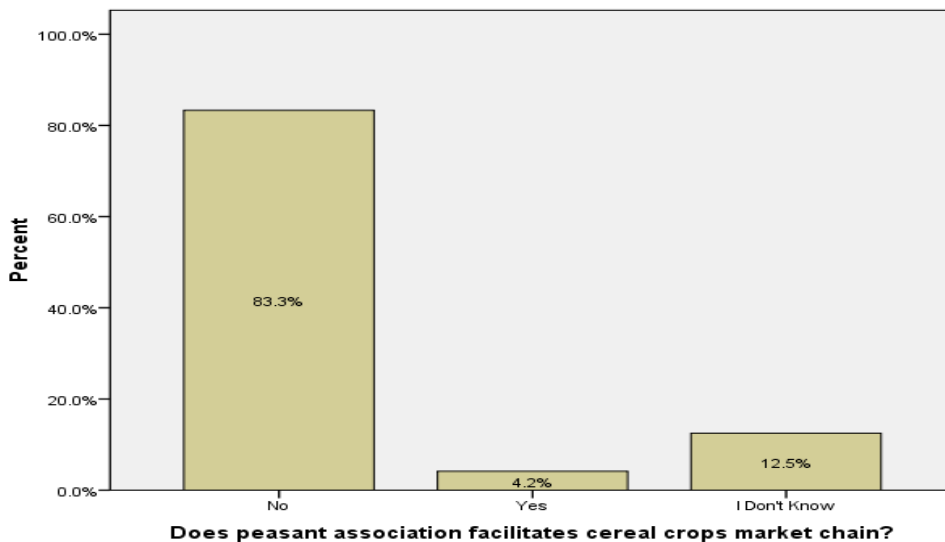


Figure 6.2.4: Peasant Association Facilities in Cereal Crops Market Chain  
Source: SPSS Output (2016)

As it is shown in Figure 6.2.3, 37.5% of the producers were sell their produce only to traders, 37.5% of the producers were sell their produce to the

trade, brokers and consumers. A few of the producers were sells their production directly to the consumers and brokers. From this result we can understand that producers



were able to identify to whom they sell their product for their profit.

As it is illustrated in Figure 6.2.4 below, we can understand that peasant association doesn't facilitate anything for strength, development and sustainability of cereal crops market chain. As most of the stakeholders reported it will be more worries particularly for the consumers unless peasant associations interfere with current market chain. Because, till now, there was no facilitation in cereal crop market chains from the side of peasant association. Therefore, such gaps need much intervention to entertain the situation.

## CONCLUSION

Participants in the Ethiopian Teff, Barley and Wheat market include wholesalers, retailers, part-time farmer-traders, brokers, processors, cooperatives, the Ethiopian grain enterprise (EGTE), and private consumers. The EGTE purchases grain from farmers to stabilize markets and encourage increased outputs. It is observed that Teff is the most commodities provided for sale among the other cereal crops in the area. The purpose of selling their crops were to buy home needs like salt, tea, oil, fertilizers, school fee, land tax, and to buy cow. Among these reasons for home needs and to buy fertilizers take greater position telling us as there is lack of government support in provision of fertilizers to subsidize the producers in the area. Even though, the stakeholders have willingness and power to strength the market chain of the area; the government doesn't reacted positively with the market chain in provision of facilitates.

There is long market chain, meaning the crops pass through many different chains to reach consumers which could unnecessarily consumes the actor's time, increases the price of cereal crops and results costs among the stakeholders. While development is undertaking in market chain performance, attention is not given to the continuity of the stakeholders which could haphazardly hinders their initiation,

contribution and involvement in the chain. The cereal crops chain has kept the time needed to buying and selling process of the crops. There is improved capacity of chain actors to participate in market development if they get the chance. There is no clear understanding of linkages among actors to deliver a sustainable improvement in the cereal crops market chain. Mostly, producers sell their crops to consumers, traders and brokers. As highly responded, there is no facilitation in cereal crop market chains from the side of peasant association.

## RECOMMENDATION

As per the research work discussion and result the following recommendations are recommended for the concerning bodies by the researchers as follow. Establishment of the cooperatives and control of illegal traders have to be executed by the concerning bodies in the districts. Positive and active participation of government, especially in providing sufficient and timely fertilizers to producers have to be implemented. Market chains of the crops have to be minimized to reach users timely and reduce costs belongs to stakeholders. There have to be clear understanding of linkages among actors to deliver a sustainable improvement in the cereal crops market chain.

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