Factors Affecting Fruit Supply in the Market: The Case of Habru Woerda, North Wollo, Ethiopia Regional State, Ethiopia

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Abstract

This research has analyzed the factors influencing fruit market supply in the study area of fruit for Habru Woreda, North Wollo Zone, Amhara National Regional State. The specific objectives of the study were factors influencing fruit market supply in the study area. A multi-stage sampling technique was used to select sample fruit farmers .from the woreda, 4 kebeles producing fruit were selected purposively and the total population that produces fruit with cereal farming system were772 and 263 farmer sample size were selected using proportional stratified sampling technique. Finally based on the sampling frame from each kebele, random sampling technique was used to select the sample fruit producing farmers. The data were collected by semi structured questionnaires, and observation. Econometrics analyses were consistently used in this study. Based on regression model, the study has identified the main determinants of fruit quantity supply to the market. Education level of house hold head, market information, access to extension services, quantity of fruit produced, are factors that significantly affect quantity of fruit supplied to the market positively at 5%, 5%, 1% , and 1% confidence level respectively while distance to market affects the supply negatively at 1% confidence level.

Keywords: supply chain, fruit market supply,quantity supplied market information Habru Woreda

1.1 Introduction

Worldwide production of fruit and vegetable crops has grown faster than cereal crops and the total value of horticultural crops traded at present is more than double that of cereal crops (Lumpkin et al., 2005).They put several reasons for the global increase in production and trade of fruit and vegetable crops. Among these reasons, farmers involved in horticultural production usually earn much higher farm incomes as compared to cereal producers, and their per capita income is also five times higher than cereal producers.

Globalization and expanding international markets as well as the fast-growing middle and high income classes in many developing countries offer opportunities for developing country producers to operate in emerging national and international markets (Jacques, 2011). This means that producers gain better control over production, trade and distribution in order to assure the quality and value addition of their products. He also added that barriers for developing country producers are the lack of an enabling environment offering institutional and infrastructural support and efficient and effective coordination in value chains.

Understanding the role of agriculture as most important engine of economic development, the government of Ethiopia designed agricultural development strategy known as Agricultural Development Led Industrialization (ADLI) (MOI, 2001). This strategy considers agriculture as the base of growth on account of its potentiality to create linkages with other sectors, surplus generation, and potential market creation. The strategy further pointed out that the success of ADLI could be secured mainly by improving the performance of agricultural marketing system. Minster of information (2001) indicated that at present, the Federal and Regional governments are doing their level best to transform the existing subsistence agriculture into market oriented commercial production system. According to the Rural Development Policy and Strategy Document (MOI, 2002) the agriculture sector is expected to generate surplus mainly for the producers to secure better purchasing capacity, and for the development of other sectors as a source of raw materials, and hard currency. This is for the improvement in both the organization and efficiency of marketing system. That is why a market oriented production system is set in the strategy.

Agriculture in Ethiopia is the basis of the country's economy, accounting for half of gross domestic product (GDP), 90% of exports, and 85% of total employment (Jema, 2008). Even though, till now agriculture is the country's most promising sector and largely, used for subsistence. Ethiopia has highly-diversified agro-ecological conditions which are suitable for the production of various types of fruits and vegetables (Milaku, 2004; FAO/WHO, 2004; Hailemariam and Dawit, n.d). However, the contribution of horticultural crops both to the diet and income of Ethiopians is insignificant (FAO/WHO, 2004). This implies that, even if, Ethiopia has various types of fruits and vegetables the country used very little. According to FAO/WHO (2004), the main constraint with regard to fruit and vegetable production is that, because of market and food security concerns, rural farmers prefer to produce cereals and pulses. In addition, other constraints embrace low production and productivity, lack of adequate pest control, poor soil fertility management practices, and lack of attention to product quality.

Horticultural crops can be differentiated as fruits (permanent crops) and vegetables (short season crops). Accordingly, permanent crops are long term crops that occupy the field planted for a long period of time

35

and do not have to be replanted for several years after each harvest (CSA, 2009). This survey also revealed that, all fruit trees (i.e. oranges, bananas, guava etc.) and trees for beverages (i.e. coffee, tea, hops (Gesho), etc.) are considered as permanent crops.

The survey of CSA (2009) reveals that more than half of the permanent crops produced in the country were used for household consumption and the remaining for sale and other purposes. That is 58% of the crops was used for consumption at home and about 37% for sale. It is rational to conclude that the peasant farmers consume most of what they produce leaving little to sell. However, Permanent crops are a good source of cash both for the holders and the country generating attractive income and foreign exchange (CSA, 2003). According to this survey report between September 2001 and August 2002 Ethiopia exported 53,142 quintals of fruits valued at 443.2 million Birr. With these bits of information and relating to diet and economic significance of the crops in mind, if the farming is well developed and managed, it is not difficult to project the profits that can be reaped from the permanent crops.

More than 47 thousand hectares of land is under fruit crops in Ethiopia. Bananas contributed about 60.56% of the fruit crop area followed by Mangoes that contributed 12.61% of the area (CSA, 2009). This survey also explained that nearly 3.5 million quintals of fruits was produced in the country. Bananas, papaya, mangoes and orange took up 55.32%, 12.53%, 12.78% and 8.35% of the fruit production, respectively. The same survey also revealed that various kinds of fruit crops grow in different regions of the country yielding varying quantities of fruits within the private peasant holdings in the traditional way. The volume of fruit production obtained from the peasant farms is small signaling the absence of development in fruit farming.

In Amhara region particularly where this study being conducted, crop lands that are actually accounted for 2106.37 hectares covered by fruit crops. From this the total land coverage, the region gate 157594.7 quintals and among different fruit crops in the region Bananas, 23.28 ,Guavas,19.12 ,Lemons, 109.3, Oranges, 130.28 ,Papayas ,91.45 yields quintals per hectare(CSA, 2009). According to the same survey, the region utilization by crop type within the permanent crop group 56.73% for household consumption and 40.34% for sale and the remaining for other purpose and also this survey indicated that more specifically in North Wollo utilization within the permanent crops 55% for household consumption, 45% for sale and from these different Fruit Crops, Bananas 30 %, 70%, Guavas 31.25%, 68.75 %, Oranges 36.67%, 63.33%, for sale and consumption respectively. It is generally to conclude that the producers consume a large amount of their products at home and sell a little the market. According to Bezabih and Hadera (2007), the constraints of marketing in horticulture products consist of; lack of markets to absorb the production, low price for the products, large number of middlemen in the marketing system, lack of marketing institutions, and lack of coordination among producers to increase their bargaining power.

According to Seid (2002), North Wollo Zone as in most parts of Amhara region, subsistence agriculture is the main occupation of the rural population. It's one among the Zones within the region, which during the past few decades, has been suffering from drought, unreliable rainfall and consequently subject to abject poverty and severe food shortage. But, today according to Seid (2002) in North Wollo twelve irrigation projects schemed and a total irrigable area of about 1,639 hectares were developed, to combat increasing droughts and improve crop yields, among this five irrigation projects have been undertaken in Habru Woreda. As a result of this Habru Woreda farmers increased their production and better access to food. And also Habru Woreda where this studies being targeted is one among the naturally endowed Woredas in terms of capacity to grow different horticultural crops. Major kinds of horticultural crops currently growing within the woreda are orange, banana, and guava from fruits (WoARD, 2010). So, this study will ensure a proper understanding of the factors affecting fruit supply in Habru Woreda.

1.2. Statement of the Problem

The research base its problem

Agricultural marketing is the most significant energetic force of economic development and contains a guiding and simulating impact on production and distribution of agricultural products. The agricultural marketing system needs to change the welfare of agrarian societies (Wolday and Eleni, 2004). According to FAO (2007), in developing countries, most permanent crops produced by smallholder farmers and their product were marketed by the non-public entrepreneurs who operates as marketing chain, and distribute the products to terminal markets. Although the marketing chain is well known, smallholder farmers specifically face high cost in accessing markets, inadequate and uncoordinated crop market information systems.

According to Wolday (1994), in Ethiopia the performance of agricultural marketing system is constrained by several factors such as: poor quality of agricultural produce, absence of market facilities, weak extension services that ignored marketing development, poor linkage of research and extension service, lack of marketing information and intelligent services, excessive value and provide fluctuations, restricted access to credit, and transportation problems. In addition to these the main constraints to increasing the welfare of smallholders is their inability to access markets (Assefa, 2009).He also suggested that, reduces incentives to

participate in economic transactions and results in subsistence rather than market-oriented production systems.

Farmers in Ethiopia particularly in the Amhara region are more focused on the production part without having adequate market information about their products, and the level of development of the marketing system in Amhara region is quite low. There are a number of constraints in all aspects of the agricultural marketing system in the region. The following are the agricultural marketing problems identified by Demelash(2003) with a wider perspective and yet very relevant to the region ; Weak bargaining power and poor marketing skills, Low level of marketable surplus, Inadequate market information system, Infrastructure problem, Fertilizer and Seed marketing. According to Colman (1999), because of different marketing constraints the small holder farmers are not getting the right share of consumer price and they are not producing and selling their produce in an organized manner so that some of their benefit may transfer to the middlemen.

A review of past research works indicates that the research largely focus on how to improve the poor feeding behavior and how farmers increased production in order to generate income and better access to food (Abaya, 2007; Seid, 2002). According to Assefa (2009), without having convenient marketing conditions, the potential increment in output, rural incomes and foreign exchange could not be effective. Increased production, however, needs to be accompanied by efficient marketing systems. One means that of investigating the efficiency of marketing system is through studying and identifying factors that determine the market chain analysis.

According to Seid (2002) due to small-scale irrigation farmers increased their production and better access to food in Habru Woreda. However, Fruit production in Habru woreda particularly, producers   are not selling their produce in an organized manner so that some of their benefit may transfer to the middlemen.

Therefore, this study was intended to analyzing factors that affect volume of fruit supplied to the market to generate information about the entire marketing chain of fruit in the study area.

The general objective of this research was to analyze the determinants of fruit supply to the market along with its specific objectives of identifying major constraints, opportunities and determinants of fruit marketing practices in the study are

The scope of this study delimited to Habru woreda in Amahara National Regional State. For the purpose of the study the researcher focused on the major determinants of quantity supplied fruit product to the market in the study area with specific focus on orange, banana and guavas.

The result of the study is helpful for farmers, traders and service providers involved in the production and marketing of fruits in the study area. In addition, the findings of the study also provide information for policy makers with a view of the whole market system that can be used as a frame-work how to formulate fruit marketing development programs and improving efficiency of the fruit marketing system. Furthermore, the study can be used as reference for further researches.

RESEARCH METHODOLOGY

The aim of this chapter is to present the research method used in the study in order to give answers to research questions as well as describe the process of data collection and analysis. A combination of both quantitative research methods were employed in this study. Data source and type, research design and strategy, sampling procedures, data collection tools and method of data analysis are discussed below.

Data and the research Design

For this study the researcher used both qualitative and quantitative types of data. Regarding to the source of data, primary data were used to manipulate the relevant information. The primary data sources are producers.

This research relies on quantitative types of research approach. The quantitative type is used more to analyze factors affecting marketable supply of fruit products at the farm level by using econometrics models. Furthermore, the research used cross-sectional data were collected from the year 2011. It studied the relation between variables at a point in time.

A multi-stage sampling technique was used to select sample fruit farmers. First, using purposive sampling technique, Four Kebeles were selected from the woreda. The identification of kebeles was made through secondary data based on production coverage of the fruit. From these purposively selected kebeles the total population size that produces fruit with cereal farming system is 772. To determine the sample size from the target population of purposively selected kebeles based on Slovin's sampling formula using 95% confidence interval.

$$no = \frac{N}{1+N(e)2} \qquad \text{Where:}$$

no= sample size

N =Population size   =772

e=sampling error/ level of precision =5%

772/1+772(0.05)²

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772/1+772(0.0025)
772/1+1.93
772/2.93 = 263   so, the sample size in this study is 263
In the second stage, using the population list of fruit growing farmers from the sampled Kebeles, the intended
sample size were selected using proportional stratified sampling technique.
 n0 /N = 263/772= 0.3406736
Which means **34.06736%** of each kebeles farmers was selected. In this context each kebele was taken as strata.
Finally based on the sampling frame from each kebele, Random Sampling technique was used to select the
sample fruit producing farmers.

Table 3.1: Proportion of farmer households in each kebele that are growing fruit with cereal farming system

Name of Kebele	Total number of households	proportion of households
Bohoro	400	136
Girana	192	65
Wurgessaa	75	26
Chekorsaa	105	36
Total	772	263

Source: Woreda Agricultural Office, kebele administrations and own computation, 2012

Model specification
Different researchers like (Wolelaw, 2005; Kindie, 2007) used Linear multiple Regression model to analyze
factors affecting marketable supply. The same as the previous researchers in this study Linear multiple
Regression model used to identify factors affecting marketable supply of fruits to the market.
Gujarati (2003) the multiple linear regression models are specified as Y=f (distance to nearest market, sex of the
household head ,access market information, quantity of produced, extension services, total land owned,
education level of household head, access to credit, age of household head, family size).
The econometric model specification of supply function in matrix notation is estimated by
$Y = \beta X + U$……………………………………………………………………………………..
Where Yi = fruit supplied to the market
β = a vector of estimated coefficient of the explanatory variables
X= a vector of explanatory variables
Ui = disturbance term

Definition of variables and Hypothses
Dependent variable
Quantity Supplied: It is a continuous variable that represents the dependent variable; the actual supply of fruit
by individual households to the market, which is measured in quintals.
Independent (Explanatory) variables:
The explanatory variables estimated to influence the dependent variable are the following:
1. **Distance to nearest market**: It is a continuous variable that is measured in kilometers which farmers
   waste time to sell their product to the market. Different studies (Adugna, 2009; Abay**,** 2007 and
   Rehima, 2006) indicated particularly, rural communities in remote areas suffer from lack of
   transportation facilities. The closer to the market the lesser would be the transportation cost and time
   spent. Therefore, it is hypothesized that this variable is negatively related to marketable surplus of
   fruit production.
2. **Sex of the household head**: According to Abay (2007), sex of the household head dictated that it is
   dummy variable that takes a value of one if the household head is male and zero otherwise. Both men
   and women participate in fruit production. It could take positive or negative signs of coefficients. The
   same as the above researcher this study it is hypothesized that this variable is positive or negative
   signs in relation to marketable surplus of fruit production.
3. **Quantity of produced:** This variable had important influence on market supply. It is expected to
   influence it positively. It is a continuous variable measured in quintals. According to Wolelaw (2005)
   and Bossena (2008), indicated that the higher they produce, the more likely the household would
   supply to market. Producers who produce more output that expect to supply more fruit to the market
   than those who produce less.
4. **Market information**: This is measured as a dummy variable giving value of one if the farmers had
   access to market information and zero if not. Farmers marketing decisions are based on market price
   information. Abay (2007) conclude that those farmers who had better information is to be expected to

supply more fruit to the market. Therefore, it is hypothesized that market information is positively related to marketable fruit supply.

5. **Extension service access**: This variable is measured as a dummy variable taking a value of one if the household has access to fruit production extension service and zero if not. According to Adugna (2009), the aim of the extension service is to introduce farmers with new and improved agricultural inputs for better methods of increasing production and productivity in turn that increase marketable supply. So, this variable is assumed to have positive relation with farm marketable supply of fruit.

6. **Education of household head:** This is a dummy variable with a value of one if a household head is literate and zero otherwise. According to Gizachew (2006), education increases farmers' ability to get and use information, since households with better knowledge are assumed to adopt better production practices. So, in this study this variable is assumed to have positive relation with farm level marketable supply of fruits.

7. **Land owned:** This is a continuous variable that is measured by hectares. Bellemare and Barret (2006) indicated that the more land owned the more will be the chance to allocate and more to supply. Therefore, it is hypothesized that land owned is positively related to marketable fruit supply of household.

8. **Access to credit:** This is a dummy variable, which assumes a value of one if the producers have credit access and zero if not. Access to credit could enhance the financial capacity of the farmer to purchase the necessary inputs and increases output. Therefore, it is hypothesized that access to credit would have positive influence on quantity of supply to the market.

9. **Age of the household head:** It is a continuous variable it is measured in years. A farmer with longer period of experience in production was assumed to have a better knowledge than who has a lower experience in agriculture because through time producers acquire skill about marketing and supply better than those who are less experienced. It was also assumed that as age increases the production capacity will decrease and amount produced and marketed supply decrease. Hence, both inverse and direct relation was assumed to the amount supplied.

10. **Family size:** This is a continuous variable that refers to the numbers of people in the family. It proposed to influence supply of fruit production positively. The more number of family members an individual had the more probable to produce fruit production and they to produce more supply more to the market.

RESULTS AND DISCUSSION

This chapter presents data analyzed and discussed by different tools that incorporate descriptive and econometric model analysis. Market channels of orange, and banana, guava fruits and major constraints and opportunities in marketing of fruits. Furthermore, econometric model was employed to identify the determinants of fruit supply to the market on the study area. In this study from the total 263 distributed questionnaires for farmers 250 were collected and 13 of them had not returned.

Factors Affecting Fruit Market Supply

Mainly in the study area fruit is produced for market. According to the survey all farmers were supplied fruit to market. Due to this several variables were hypothesized to determine the factors that affect the fruit market supply. For the determination of factors affect the fruit market OLS econometric model were used

Econometric Results of OLS Model

For this study ten explanatory variables are hypothesized to determine factors affect household level marketable supply of fruits to market. The hypothesized variables were; Sex of the household, age of the household, education level of household, extension access, quantity fruit produce, credit access, distance to the nearest market, family size and market information. Based on OLS analysis five variables are found that significantly affect the marketable supply of fruit at household level. Quantity of fruit produce, education level of the household head, market information, distance to the market, and extension service are variable that significantly influence the marketable supply of fruits by household. The remaining 5 variables were found have no significant effect on fruit market supply. The summery table of the variables with their level of significance is presented on table 4.1 below.

Table 4.1: Factors Affecting Quantity of Fruit Supplied to the Market

Quantity Supplied	Coefficient.	Std. Err.	T	P>|t|
Sex	0.1392052	0.4900511	0.28	0.777
Age	0. 0017842	0. 0151816	0.12	0.907
Education level	0. 6220678	0.3028211	2.05	0.041 **
Family size	0. 0353125	0.0734096	0.48	0.631
Market information	0. 618186	0. 2796082	2.21	0.028 **
Distance to market	-0. 618186	0. 0299495	-3.61	0.000*
Extension service	1.756077	0. 4436203	3.96	0.000 *
Total Land holding	0.0502892	0.031344	1.60	0.110
Quantity produced	0.8402654	0. 0165714	50.71	0.000 *
Credit Access	0.0393621	0. 2954056	0.13	0.894
Constant	-1.272357	1.193049	-1.07	0.287

* Significant at 1 percent,   ** Significant at 5 percent

N=250 , R-squared   = 0.9809, Adj R-squared = 0.9801

Education level of house hold head: Education has shown positive effect on fruit quantity sold with significance level at 5%. On average, if fruit producer gets educated, the amount of fruit supplied to the market increases by 0. 6220678quintal.The result further indicated that, education has improved the producing household ability to acquire new idea in relation to market information and improved production which in turn enhanced productivity and thereby increased marketable supply of fruits. This result is in line with Aylech (2011) who explained if avocado producer get educated, the amount of avocado supplied to the market increases which suggests that education improves level of sales that affects the marketable surplus and also Astewel (2010) who illustrate if rice producer gets educated, the amount of rice supplied to the market increases which suggests that education improves level of sales that affects the marketable surplus.

Market information: Market information has shown positive effect on fruit quantity supplied with significance level at 5%. On average, if fruit producer gets market information, the amount of fruit supplied to the market increases by 0.618186Quintal. This is similar with the finding Adugna (2009) who illustrate if papaya and tomato producer gets information, the amount of papaya and tomato supplied to the market increases.

Distance to market: Distance to market was expected to adversely affect the volume of total sales. As hypothesized, this variable is negatively related to marketable surplus of fruit. The result shows that distance to the market significantly and negatively affected marketable surplus at 1% confidence level. This implies that, an increase in one kilometer indicates a decrease in the quantity supplied by 0. 618186quintals.This result also in line with Wolday (1994); Dawit (2010) and Aylech (2011) who indicated that distance to market caused market surplus of food grain, poultry and avocado to decline.

Extension access: Extension access affects positively the marketed supply at 1% of significant. On average, if fruit farmers get extension access, the amount of fruit supplied to the market increases by 1.756077 quintals. This indicates as similar finding with Adugna (2009), the aim of the extension service is introducing farmers with new and improved agricultural inputs for better methods of increasing production and productivity in turn increase marketable supply. This indicates that access to extension service avails information regarding technology which improves production that affects the marketable surplus.

Quantity of fruit produced: The result as it was hypothesized indicates that households who had produced more amounts of fruit had also supplied more amounts of fruit to market at 1% of significant. On average if production increases by one unit per hectare, it results in an increase in farm level marketable supply by 0.8402654 quintals. This result is in line with Abay (2007); Adugna (2009); Ayelech (2011)who indicated an increase in tomato , papaya and avocado production by farming households has increased marketable supply.

Major Constraints and Opportunities of fruit marketing

A number of frequent rapid field survey supported with survey result undertaken in Fruit marketing in Habru Woreda is constrained by so many factors. The major marketing problems and opportunities are discussed below.

Marketing constraints

Marketing constraints have been identified from the producers' perspectives. The producers' explained marketing constraints have been identified and presented in (Table, 4.25). The results shows about 60% is associated with low prices of the products, 62.8% is lack of market information, 59.2% is perish-ability and 68% is lack of cooperative are the major constraints in the marketing system. While, lack of transportation and lack of market the less marketing constraints as compared the other constraints

Table 4.2: marketing constraints for producers

Alternatives	Yes		No	
Constraints	Frequency	Percentage	Frequency	Percentage
Low price	150	60	100	40
Lack of transportation	123	49.2	127	50.8
Lack of market Information	157	62.8	93	37.2
Perish-ability	148	59.2	102	40.8
Lack of market	104	41.6	146	58.4
Lack of cooperative	170	68	80	32

Source: Survey result, 2012

The constraints of fruit marketing were inquired from experts, traders and rapid market appraisal. The analysis of results of all possible sources would lead to the following list of major constraints of fruit marketing in the woreda. These are:

Lack of market to absorb the production; large number of middlemen in the marketing system especially in orange and banana; absence (weakness) of marketing institutions safeguarding farmers' interest and rights over their marketable produces (e.g. cooperatives); lack of coordination among producers to increase their bargaining power; imperfect pricing system this also indicated in RMA the imperfect pricing system of traders was a major problem to producers. Traders charge low price at peak supply periods which is not based on the real demand and supply interaction .this implies, the middlemen decide on the price of fruit products. Producers cannot negotiate since they may be denied even a low price and their products could be liable to rotting, since it is perishable, and the other marketing problems in study area were lack of semi-processing industries.

Opportunities for fruit marketing
The Woreda was not only with problems but it had also opportunities. Among the opportunity, of this woreda, the favorable agro-ecology of the area to produce fruits is a good opportunity to boost production and increase demand in the area.

The Woreda is near-by to Tigray Regional State and Afar Regional State and connected by all weather roads. Therefore, Habru has a good opportunity to sell its agricultural products for different regional states.

The infrastructural development such as mobile telephone and wireless telephone are also the other advantages to improve the production and marketing system in the area. And also the government policies support horticultural production as means of increasing household food security. The existence of NGOs like World Vision Ethiopia is another opportunity to increase productivity and benefit producers.

CONCLUSIONS AND RECOMMENDATIONS
Conclusions
Ethiopia has a great potential for horticultural crops production. However, out of the country's total potential areas of horticultural crop production, the contribution of horticultural crops both to the diet and income in Ethiopians is insignificant. A number of factors may have affected the amount of marketable supply of fruits at farm level in the country. In the case of Habru Woreda to identify factors affecting farm level marketable supply of fruit, OLS regression analysis was employed. About 10 variables were hypothesized to affect farm level marketable supply of fruit in the woreda. Five variables were found to be significant variables in affecting farm level marketable supply of fruit. Quantity of fruit produce, education level of the household head, market information and extension service influenced the marketable supply of fruits (positively) and distance to the market (negatively) by household as predictable.

Recommendation
❖   Fruit production and marketing with respective to supportive service like input supply, extension service, market information and access to credit was an important element in order to increase production and productivity. However, the survey data indicated that in Habru Woreda farmers' low linkage with supportive services regarding to fruit production and marketing. So that, to increase production and productivity of fruit product it recommended that the farmers receive the right type and time of supportive service in production of fruits and also upgrade the knowledge and skill of key actors like producers, development agents and supervisors to increase production and productivity. Producers and extension agents need adequate skills in production management practices starting from seed selection to post harvest technology suitable at their level. Marketing principles, bargaining skills, and post harvest handling of fruit products are some of the interventions needed. So, the government and other development partners should exert profound effort to assist the chain actors in holistic manner.
❖   The quantity of fruit produced at the farm level affected marketable supply of fruits positively and

significantly. However, the majority of farmers are producing fruit production without supportive service. The productivity of fruit per hectares in study area was less than the average national productivity per hectares. This is the result of fruit producers in Habru Woreda used little inputs (like improved seeds, pesticides and fertilizers). Hence, increasing production and productivity of fruits per unit area of land is better alternative to increase marketable supply of fruit. The government should be intervention to increase production and productivity of fruits in study area, by introduction of improved varieties seeds, application of fertilizers, controlling disease and pest practices in order to encourage increasing production.

❖ The result of the study indicates that access to extension services were important factors to improve marketable supply of fruits. And also it is good to enlightening farmers to produce based on market signals, consumer preferences but in the study area the majority of the respondents have not access to extension service. Hence, it is recommended to assign efficient extension system, updating the extension agent's knowledge and skills with improved production and marketing system.

❖ Promoting education in production and marketing of fruit product is a crucial factor in improving the marketing performance of the producers. If producers have knowledge about the advantage of the market, they do not need only immediate economic advantages from the sale of their product. In case of production, household heads that have very limited education encounter in successfully managing, fertilizer and pesticide applications. So, stakeholders' and Agricultural and Rural Development Offices have to create awareness about the market and continuously trained in production and marketing.

BIBLIOGRAPHY

Abay, A., 2007. Vegetable Market Chain Analysis: The Case of Fogera Woreda. M.Sc. Thesis presented to Haramaya University.

Abda, E., 2011.Valuating Marketing Efficiency of Tomato in Khartoum State, Sudan'. Journal of Agric. Soc. Sci.,52(7), pp. 21–24.

Acharya, S.,2004. Agricultural Marketing: Millennium Study of Indian Farmers. vol.17.

Adugna,G., 2009.Analysis of Fruit and Vegetable Market Chains : The Case of Alamata, Southern Zone of Tigray. M.Sc. Thesis, Haramaya University.

Agricultural Development Lead Industrialization (ADLI) ,2001, Development Policies and Strategies: Department of Press and Audiovisual, Ministry of Information. Addis Ababa, Ethiopia.

Alazar, A.,2008. Horticulture Marketing: The Case of Ethiopia. MBA Thesis, Addis Ababa University.

Alemnew, A.,2010. Market Chain Analysis of Red Pepper: The Case of Bure Woreda. M. Sc. Thesis,Haramaya University.

Andrew, K.,2008. Structure conduct and performance a food Security: famine early warning systems network market. Guidance. no.2.

Assefa, A., 2009. Market Chain Analysis of Honey Production: The Case of Atsbi Wemberta District. M. Sc. Thesis, Haramaya University.

Astewel, T.,2010. Analysis of Rice Profitability and Marketing Chain: The Case of Fogera Woreda, South Gondar Zone, Amhara National Regional State. M.Sc. Thesis, Haramaya University.

Awol, Z., 2010. Analysis of Poultry Market Chain: The Case of Dale and Alaba Special Woredas. M.Sc. Thesis, Haramaya University.

Barrett, C. & Mutambatsere, E.,2005. Agricultural markets in developing countries. Journal of Agricultural Economics.

Bellemare, M.F. & Barrett, C.,2006. An ordered Tobit model of market participation: Evidence from Kenya and Ethiopia. Journal of Agricultural Economics,88(2), pp.324-337.

Berhanu, G., Moti ,J. and Dirk,T., 2009. Smallholder Commercialization: Processes, Determinants and Impact. Discussion paper no. 18. Improving Productivity and Market success of Ethiopian farmers improving market opportunities international livestock research institute.

Bezabih, E. and Hadera, G. 2007. Constraints and opportunities of horticulture production and marketing in eastern Ethiopia. Dry Lands Coordination Group Report no 46. Norway.

Bezabih. E., 2010. Market Assessment and Value Chain Analysis in Benishangul Gumuz Regional State: Final Report Ethiopia.

Bosena, D., Berhanu,G. and Dirk ,H. 2009. Factors affecting Cotton Supply at the Farm level in Metema District of Ethiopia: Improving Productivity and Market success of Ethiopian farmers improving market opportunities international livestock research institute.

Bosena, T., 2008. Analysis of Cotton Marketing Chains in Metema Woreda,Amhara National regional state, Ethiopia. M.Sc. Thesis, Haramaya University.

Catherine, D., 2007.A practical guide to research methodology. United Kingdom: How To Books Ltd.

Central Statistical Agency ,2007, Compilation of Economic Statistics . Addis Ababa, Ethiopia

Central Statistical Agency ,2008/2009, Report on Land Utilization. Vol. IV. Agricultural Sample Enumeration Survey, Addis Ababa, Ethiopia

Central Statistical Agency ,2009, Report on Farm Management Practices, Volume III, Agricultural Sample Enumeration Survey. Addis Ababa, Ethiopia

Central Statistical Agency, 2009, Crop and Livestock Product Utilization .Vol. VII . Agricultural Sample Enumeration Survey. Addis Ababa, Ethiopia

Central statistical Authority (CSA), 2008, Area and Production of Major Crops. Agricultural Sample Enumeration Survey. Addis Ababa, Ethiopia

Central statistical Authority ,2003, Socio-Economic characteristics in agricultural households, lands use, area and production of croup. Addis Ababa, Ethiopia

Colman,Y.,1999.Improving the Legal Environment for Agricultural Marketing. Agricultural Service Bulletin 139, Rome.

Crawford, I.,2006. Agricultural and food marketing management.

Dawit, G., 2010, Market Chain analysis of Poultry: The Case of Alamata and Atsbi-Wonberta Woredas of Tigray Region. M. Sc. Thesis, Haramaya University.

Demelash, S., 2003. A review on Agricultural Marketing Problems and Possible Solutions in Amhara Region. Bahir Dar, Ethiopia.

Department of Agriculture ,2002, Annual Report on Socio-Economic Information of North Wollo Zone (unpublished).' Woldya.

Elenei Z. Gebre-Medhin, 2001. Market institutions, transaction costs, and social capital in the Ethiopian grain market. Research Report No 124. International Food Policy Research Institute. USA.

Elfring,W.,Yohannes, A. and Mulgata, T., 2005. Value Chains Identification for Intervention, Progress Report on Identification Process, SNV Support to Business Organizations and Their Access to Markets.

Ewane, M. ,2010.Markets and Market Chain Analysis for Bush Mango: the south west and east regions of Cameroon. Buena University.

FAO (Food and Agriculture Organization) ,2007.State of the World's Forests. FAO, 000, Rome.

FAO (Food and Agriculture Organization), 1999. Market infrastructure planning. A guideline for decision-making, FAO, 141, Rome.

FAO (Food and Agriculture Organization),1999. Law and Markets: Improving the Legal Environment for Agricultural Marketing. Agricultural Services Bulletin 000. Rome, Italy.

FAO ,2004. Fruit and Vegetables for Health Report of a Joint FAO/WHO Workshop 1–3 September 2004, Kobe, Japan.

Fateh, M. 2009. Structure and Efficiency Analysis of Vegetable production and Marketing in Sindh. PhD dissertation Singh Agriculture University, Pakistan.

Gebremedhin, B., Dirk, H. and Jemaneh S., 2007. Heading towards commercialization? The case of live animal marketing in Ethiopia, International Livestock Research Institute (ILRI), Addis Ababa, Ethiopia.

Gebre-Meskel, D., Jayne, T.S and Shaffers, J.D., 1998.Market Structure, Conduct, and Performance: Constraints on Performance of Ethiopian Grain Markets. Working Paper No.8, Grain Market Research Project, MEDAC, Addis Ababa.

Getachew, B., 2002. Cattle Marketing in Western Shewa. M .sc. Thesis, Alemaya University.

Gizachew, G., 2006. Dairy Marketing Patterns and Efficiency: A case Study of Ada'a liben District of Oromia Region. M .sc. Thesis, Alemaya University.

Gujarati, D.N.,2003.Basic Econometrics. 4th ed. Boston: MCGraw-Hill Company.

Hailemariam,T and Dawit ,A.,-----. Marketing of Fruits and Vegetables: Opportunities and Constraints in the Rift Valley of Ethiopia. Melkasa & Debrezeit Agricultural research Centers.

Islam, M.S., Miah, T.H. and Haque, M.M., 2001. Marketing system of marine fish in Bangladish'. Bangladish Journal of Agricultural economics 24(2): 127-142p.

Jacques ,H. , 2011. Agricultural Value Chains in Developing Countries: a framework for analysis international food and agribusiness management review. Vol. 14. Issue2.

Jema, H., 2008. Economic Efficiency and Marketing Performance of Vegetable Production: The Eastern and Central Parts of Ethiopia.

Jhon ,2005. Market Chain Analysis improving livelihoods in the uplands. [Online] Available from:http://webapp.ciat.cgiar.org/africa/pdf/eri_guide2/section_.pdf.[Accessedon14September2011].

John Tracey-White 1999.Market Infrastructure Planning: A guide for decision makers, FAO Agricultural services bulletin, Rome.

Kindie, A., 2007. Sesame Market Chain Analysis: The Case of Metema Woreda, North Gondar Zone, Amhara National Regional State. M.Sc. Thesis Presented to Haramaya University.

Kohls, R.L.& Uhl, J.N.,2002.Marketing of Agricultural Products.9th ed. Macmillan Publishing.

Kotler, P. & Armstrong,G.,2003.Principle of Marketing. 10th ed. New Delhi: Hall of India Pvt.ltd.

Lumpkin, T. Weinberger, K. and Moore, S., 2005. increasing income through fruit and vegetable production opportunities and challenges. Draft Note Consultative Group on International Agricultural Research Science Forum. Marrakech, Morocco.

Lunndy, M, Gottret, W. Cifuentes, C.and Ostertag, R., 2004. Increasing the Competitiveness of Market Chains for Small holder producers. International centre for tropical Agriculture, Colombia.

Milaku, J., 2004.Fruit and vegetables for health: Report of a Joint FAO/WHO Workshop1-3 September, 2004, Kobe, Japan. Addis Ababa, Ethiopia.

Ministry of agriculture and rural development ,2010, Ethiopia's agricultural sector policy and investment framework draft final report.

Ministry of information (MOI),2002, Ethiopian federal republic government rural development policy, strategy and programs. Addis Ababa, Ethiopia.

Moti, J., 2007. Econometric analyses of horticultural production and marketing: The case of Central and Eastern Ethiopia. The PhD Dissertation Presented Wageningen University, Netherlands.

Muhammad, S., Munir ,K., Dilawar, K., Sardar-ul-Mulk and Muhammad ,N.,2008. An investigation into marketing channels and margins of rice in district malakand. Sarhad J. Agric. Vol.24, No.3.

Neway,G. , 2006.Commercialization of Small Holder Agriculture in Ethiopia: Note and Papers Series, No. 3, Ethiopian Development Research Institute.

Nwaru, J. C. Nwosu, A. C. and Agommuo V. C., 2011. Socioeconomic determinants of profit in wholesale and retail banana marketing in Umuahia Agricultural Zone . Journal of Sustainable Development in Africa, Vol. 13, no.1.

Onu, J.I. & Iliyasu, H.A. , 2008.An Economic Analysis of the Food Grain Market in Nigeria. World Journal of Agricultural Sciences, 4 (5) , pp. 617-622.

Rehima, M., 2006. Analysis of pepper marketing in Alaba special woreda and Silte zone. M.Sc. Thesis, Haramaya University.

Seid, Y., 2002. Small-Scale Irrigation and Household Food Security in North Wollo Zone. M.Sc. Thesis, Haramaya University.

Stephen, D. and Bruce,G., 2009.Agriculture and Social Protection in Ethiopia .Working. Paper no.03.

Tracey,J., 1991.Wholesale Markets Planning and design manual [Online] Available from: http://www.fao.org/docrep/T0521E/T0521E00.htm. [Accessed on 10October 2011].

Wolday, A and Eleni,G.M., 2004. Performance of Grain Markets Structure and Conduct of Grain Marketing in Ethiopia. Ethiopia International Food Policy Research Institute.

Wolday, A., 1994. Food Grain Marketing Development in Ethiopia after Reform 1990. A Case Study of Alaba Siraro. The PhD Dissertation Presented to Verlag Koster University. Berlin.

Wolday, A., 2003. A reviews on Importance of Agricultural Marketing in Development Process and some Conceptual Highlights of Marketing. Bahir Dar.

Woldemichael,S., 2008.Dairy Marketing Chain Analysis: The Case of Hawassa-Yergalem Milk Shed, Southern Ethiopia. M.Sc. Thesis presented to Haramaya University.

Wolelaw S, 2005. Factors determining supply of rice: A study in Fogera district of Ethiopia. M.Sc. Thesis Presented to Hararnay University.

http://www.asbcentral.com/marketing%20pdf/what.pdf what is marketing? [Accessed on 20 October 2011]

http://freedownload.is/pdf/what-is-marketing-1254.html [Accessed on 20 October 2011]

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