

# Marketing Channel and Margin Analysis of Ware Potato: A Case Study of Ware Potato Marketing at Ambo and Dendi Districts in Central Ethiopia

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## Abstract

The study was conducted at Ambo and Dendi districts, Central Ethiopia to identify ware potato marketing channels, assess margins of the market and examine the role of various marketing actors involved in the chain. Related data from primary and secondary sources were collected and analyzed with descriptive statistics using SPSS. Simple random sampling method was used for the study. From the total volume produced in the study area, a total of 1,366 and 938 tons of ware potato, accounting 76.28% and 68.68% from the total produced, were sold in Ambo and Dendi districts, respectively, during study period. Seven marketing channels were identified. There is wide gap in market margin and found to be inefficient; with the highest market margin goes for collectors (32.8%) with the lowest shared by (40%). Likewise, the highest and lowest profit margins were taken by wholesaler (13.55 birr/qt) and collectors (48.65 birr/qt). In order to benefit the major participants of the market chain, farmers have to linked with the need of consumers by working closely suppliers and processors to produce the specific goods required by consumers.

**Keywords:** - Ambo and Dendi districts, margin, market channel

## INTRODUCTION

In Ethiopia, ware potato is cultivated in different parts of the country; especially the SNNP and Oromia regions were the major producing regions of ware potato as compared to other regions. According to CSA report (2014/15), the actual ware potato produced during 2014/15 at the national, in the Oromia region and west Showa zone was 9.21 million qt, 4.67 million qt and 1.5 million qt under the area of 67,356.54, 38,256.15 and 14,310 hectare of land, respectively.

In the country Ethiopia, potato was consumed in different outlines because it's a short duration crop yielding more than 35 t/ha within 4 months (Endale *et al.*, 2008) with having nutrition such as energy, minerals and vitamins, protein and calories which helps to achieve food security (Anderson *et al.*, 2010). On contrary, unfair benefit distribution of profit and market margin existed between the farmers and other market chain actors, inadequate logistical facilities such as storage, transport and handling, spreads of pests and diseases, under developed market, price fluctuation and occurrence of post harvest loses are discouraging the farmers to produce more volume of production. The stated problem causes to supply less amount of potato in the market. For this reason, the existence of market environment in general should benefit all the participants of the chain with a narrow margin and fair profit distribution among the chain members.

## Objectives of the study

The general objective of the study was to investigate the marketing performance of ware potato in the selected study areas. The specific objectives include:

- To analyze different market channel of the ware potato in the study areas
- To determine the marketing margins
- To investigate the role of different marketing actors along the market chains

## MATERIALS AND METHODS

### Description of the Study Areas

Ambo district is one of the 18 West Showa Zone districts, Oromia regional state which is found to the west at a distance of 110 km from the capital city, Addis Ababa, and consists of 35 rural kebeles which have potential for crop production. The topography of the zone varies from place to place which is divided into three agro-ecological zones: tropical/lowland, sub-tropical/moderate highland and temperate/highland that covers 17%, 60% and 23% of the total area of the zone, respectively. The altitude of the West Showa zone ranges from 1,166 to 3,238 masl, where the largest area lies between 2,300 and 2,630 masl. The temperature ranges from 11-21°C and rainfall ranges between 880-1200mm (AWAO, 2014).

Dendi district is one of the 18 districts found in West Showa Zone Oromia regional state with the capital town called Ginchi. The district is located in eastern part of the zone at a distance of 35 kilometers from Ambo town, zonal capital and 78 kilometers from Addis Ababa, the capital city of Ethiopia. The district has a total area of

106,428 ha with an altitude ranging from 2000 to 3268 masl. Agro-ecologically, it is divided into sub-tropical about 71% (middle land between 2000-2500 masl), temperate about 29 % (high land above 2500 masl). Its annual rain fall varies from 750-1170 mm. The daily temperature reaches about 16°C depending on season and altitude. According to the current administration structure, the district is divided into 48 rural kebeles and 6 urban kebeles. The district has 28,261 households, out of which 22,145 are males and 6,116 are females. (DWAO, 2014).

### **Primary Data Collection**

Primary data were collected with an interview schedule from the households and concerned bodies using informal and formal surveys and key informants. Samples were taken from the total population in the study area. In order to obtain the primary data, a total of (70) sampled respondents from ware potato traders, intermediaries of the market chain, support service providers and government and non government bodies were selected using a two stage random sampling methods.

As the first stage, based on potentiality of market supply for ware potato, market centers were purposefully selected. In the second stage of sampling, a total sample size of (70) was proportionately shared among these market centers based on the proportion of traders and respondents were taken randomly.

### **Secondary Data Collection**

Secondary data were collected from Central Statistical Authority (CSA) and the BoARD (Bureau of Agriculture and Rural Development) of Ethiopia were used in order to take data related to area, volume of production, number of ware potato market traders and price. Formal interviews with randomly selected market traders and other concerned bodies using a pre-tested semi-structured questionnaire for each group were undertaken.

### **Method of Data Analysis**

The data collected from different sources has been analyzed using descriptive statistics such as tables, graphs and percentages. In relation to the quantitative data analysis, the collected data through questionnaire has been prepared by coding and entering them into the computer and analyzed by the help of statistical package for social science (SPSS) version 20.0. Analysis results were presented using tables and figures.

### **Amount of ware potato supplied to the market**

Ware potato supplied to the market in Ambo and Dendi districts were used as the output data for this research during 2014/15 production season.

## **RESULTS AND DISCUSSION**

### **Characteristics of Ware Potato Traders and Channel Analysis**

#### **Type and description of ware potato traders**

Marketing channel helps to connect the farmers to channel their output to the final users. Hence, the marketing chain involving different marketing actors were used in the process of transaction. The major marketing actors involved in the study areas were: farmers (Producers), collectors, wholesalers, retailers and consumers. The study result revealed that there was a significant difference among traders in terms of the socio-demographic variables such as education, marital status and sex, age, farm experience and family size at 1%, 5% and 10% significant level, respectively.

#### **Ware potato farmer traders**

Ware potato growers are one of the market chain actors who are directly involved in ware potato production and trading activities and perform most of the value chain functions such as ploughing, ridging, fertilization, weeding, pest/disease control, harvesting, post harvest handling and marketing as well. Farmer traders used different means of transportation which affects the quality of ware potato product supplied to the market. Hence, about 46.27% and 45% of farmer traders in Ambo and Dendi district have used back animals to transport their produce and sell from the area production to the area of marketing respectively.

#### **Collectors/Assemblers**

Are traders who usually collect ware potato product from producers' farms and from the village market and resell it to other value chain actors such as wholesalers and retailers. They account 48% of trading of ware potato where they move the product from the area it was produced to the area where wholesalers and retailers exist. Usually, traders add a value to the product which includes assembling, cleaning, sorting, grading, transporting and selling to the markets.

#### **Ware potato processors**

Processors are actors who are involved in the transformation of a product from one form to another. Ware potato is

mostly consumed in the form of boiled and cooked meals and served for consumption for the consumers in the form of 'Wot'. In major cities of the country, consumption of ware potato chips, crisps and roasted ware potato are common. Large scale ware potato processing was not common in the study areas. A very few ware potato processors were willing to give information on the amount they process. Hence, it's difficult to report on the amount the crop which was processed. In the interview, some respondents said that they prefer large size ware potato for processing such as 'Jalene variety'.

### **Wholesalers**

Wholesalers purchase ware potato product from itinerant collectors (small and mobile traders who visit villages and rural markets) and assembly traders or primary wholesalers with larger volumes than collectors and assemblers and supplying them to retailers and consumers. Wholesalers perform important storage, transport and communication functions. Majorities of wholesalers have a storage facilities either owned or rented. The average ware potato retained per week was 25 quintal by the wholesalers.

### **Retailers**

They are the final link between producers and consumers. They buy ware potato product from wholesalers mostly and sell to urban consumers. Also, they play key role in meeting numerous marketing functions such as buying, storing and selling. This retailers purchase different kinds of vegetable products and sell to final users of the product. Retailers purchase ware potato product mainly from producers, collectors and wholesalers and sell to consumers and they account trading of 40% of the ware potato product and the average ware potato retained by the retailer was 5 quintal per week. According to Ayelech (2011), retailers are the ultimate actors in the market chain that purchases and delivers avocado and mango to consumers.

## **Marketing Channels and Performance Analysis**

### **Marketing channels**

Ware potato passes through different channels until it reaches the final consumers. The shortest channel occurs when the farmer directly sells its product to the consumers (channel 1). This channel is used by the farmer when the volume of selling of ware potato is very small and when the farmer is very close to urban centers. From different elements of market channel, the most popular and widely used by the producers was channel 1 and 3 where the gross marketing margin for the farmer was highest as compared to other market channel.

### **Ware potato marketing channel**

Seven major alternative marketing channels were identified for ware potato marketing in the study areas. From the study result, around 13,68.23 ton from Ambo and 9,380.45 ton from Dendi district, together 23,048.68 tons of ware potato from both districts were marketed or supplied to the market and sold by the sample respondents in 2015 production year. Figure 1 depicts the main marketing channels that help for transferring of ware potato product from the point of production to the point of consumption.

As the study results illustrated, the main receivers of ware potato from the farmers were collectors and retailers with an estimated percentage share of 48% and 40%, respectively (Figure 1). According to the volume of ware potato passed to the different channels, the channel 2, that includes producer - retailer - consumer; and channel 7, including producer - collector - retailer - consumer were much popular in the study areas (Figure 1).

- I. Channel 1: Producer-Consumer (1,382.92 ton)
- II. Channel 2: Producer- Retailer-Consumer (4,609.74 ton)
- III. Channel 3: Producers-Collectors-Wholesalers- Retailers-Consumers (460.97 ton)
- IV. Channel 4: Producers- Wholesalers-Consumers (2,304.87 ton)
- V. Channel 5: Producers- Wholesalers- Retailers-Consumers (2,074.38 ton)
- VI. Channel 6: Producers-Collectors-Wholesalers-Consumers (691.46 ton)
- VII. Channel 7: Producers-Collectors-Retailers-Consumers (11,524.34 ton)

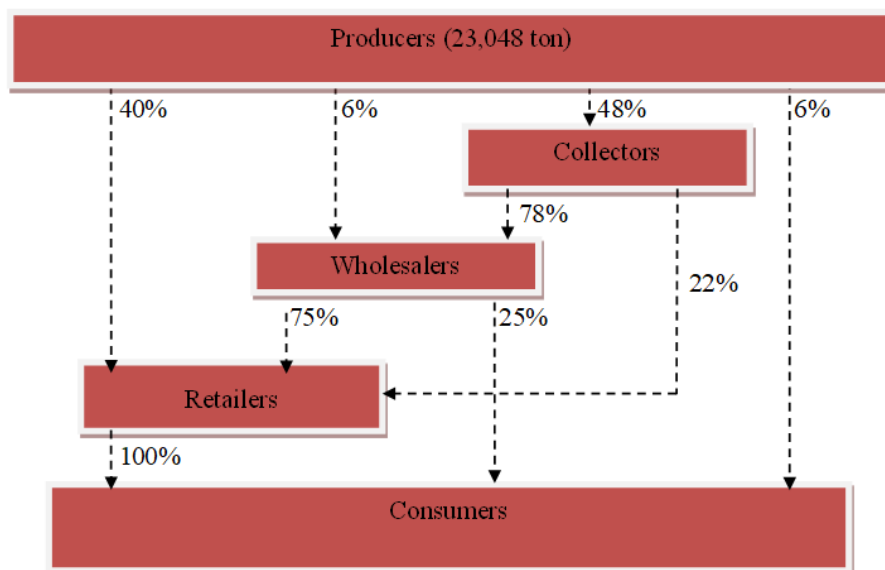


Figure 1: Ware potato market channel

### Analysis of market performance

The marketing performance of ware potato was analyzed by using marketing margin estimation, by taking the marketing costs into consideration for key marketing channels. The systems used for analysis of market performance were market channel comparison and marketing margin. Analyzing the marketing channel was useful because it provides a systematic knowledge on the flow of a product from initial stage to final consumer. The estimated volume of ware potato production on average was 8.8 and 5.9 ton per hectare in both Ambo and Dendi districts, respectively. The amount of ware potato sold after deducting the post harvest losses and consumption were 13,668.23 and 9,380.45 ton in the respective districts.

Marketing margin is the difference between prices at two market levels. It's the percentage of the final weighted average selling price taken by each stage of the marketing chain. The margin includes different costs including in transferring produce from one stage to the next and provides a reasonable return to those doing the marketing. As a result, in these two districts marketing margins were analyzed based on the average selling price of different marketing channel members that ranges from producers to consumers. The marketing margin analysis was carried out separately for the two districts (Ambo and Dendi) in order to give detail information.

### Ware potato market performance and marketing margin in the study areas

Table 1: Ware potato marketing costs and benefit shares of actors Birr/qt

Item (Birr/qt)	Producers	Collectors	Wholesalers	Retailers	Horizontal sum
Purchase prices	-	205	270	317	792
Production cost	165				165
<b>Marketing cost</b>					
Transport	6	4	8	4	22
Loading/unloading	5	3	7	5	20
sacks cost	10	10	10	10	40
Storage cost	-	4	4	4	12
Tax	7	8	8	8	31
<b>Total marketing cost</b>	<b>28</b>	<b>29</b>	<b>37</b>	<b>31</b>	<b>125</b>
<b>Total cost</b>	<b>193</b>	<b>29</b>	<b>37</b>	<b>31</b>	<b>290</b>
Sales price	205	270	317	364	1156
market margin	40	65	47	47	199
<b>% share of margin</b>	<b>20</b>	<b>32.8</b>	<b>23.6</b>	<b>23.6</b>	<b>100</b>
profit margin	12	36	10	16	74
<b>% share of profit</b>	<b>16.2</b>	<b>48.65</b>	<b>13.55</b>	<b>21.6</b>	<b>100</b>

Source: Own computation from survey result, 2015

To measure the market share of each actor, the marketing channel in which all actors participated was selected and depicted on table 1. As a result, production and marketing cost of the ware potato; which involves the cost of pre and post-harvesting and transaction activities before reaching end consumers.

The different types of marketing margin and cost relating to the different market chain actors (producers,

collectors, wholesalers and retailers) showed differences (Table 1). The percentage share of profit was high for the collectors (48.65%) as compared to that of the producers (17.9%). This finding is in line with Ayelech (2011) and Amare and Dawit, (2013) which revealed that the profit share of collector was highest. However, the wholesaler has got a profit share of 13.55%. Even though the farmers work hard and bear the risk in producing the potato, they obtain a much less profit share than any other value chain actors. Also, Abraham (2013) finds that traders took more than half of the total profit margin while the farmers took lesser amount of the profit.

Table 2: Ware potato market performance of different market channels

Actor	Item	Marketing channels						
		I	II	III	IV	V	VI	VII
Producer	Selling price	220	210	205	212	204	214	205
	Production cost	165	165	165	165	165	165	165
	Marketing cost	28	28	28	28	28	28	28
	GMMp (Birr)	55	45	40	47	39	49	40
	NMMp (Birr)	27	17	12	19	11	21	12
Wholesaler	Purchasing price	-	-	270	212	204	271	-
	Marketing cost	-	-	37	37	37	37	-
	Selling price	-	-	317	280	274	330	-
	GMMw (Birr)	-	-	47	68	70	59	-
	NMMw (Birr)	-	-	10	31	33	22	-
Collector	Purchasing price	-	-	205	-	-	214	205
	Marketing cost	-	-	29	-	-	29	29
	Selling price	-	-	270	-	-	271	266
	GMMc (Birr)	-	-	65	-	-	57	61
	NMMc (Birr)	-	-	36	-	-	28	32
Retailer	Purchasing price	-	210	317	-	274	-	266
	Marketing cost	-	31	31	-	31	-	31
	Selling price	-	291	364	-	328	-	313
	GMMr (Birr)	-	81	47	-	54	-	47
	NMMr (Birr)	-	50	16	-	23	-	16
TGMM		0	28	43.7	24	37.8	21	34.5

Source: Own computation from survey result, 2015

### Marketing margins

The marketing margin calculated for each of the marketing actors depicts that there is a wide gap existed in the consumer price of the market chain. There exists imperfect market if and only if there is a wider marketing margin which is the indicator that consumers are paying higher price but producers are receiving a lower market price. Hence, the market may fail due to many reasons (Cramer and Jensen, 1982; Ayelech, 2011; Rehima, 2006).

Marketing margins of potato in the seven channels for each market actors were stated above in Table 2. GMMp, GMMc, GMMw, and GMMr are gross marketing margins of producers, collectors, wholesalers and retailers, respectively. The marketing margin is the difference of prices between two marketing levels. The result showed that producers gained highest GMM at channel I (55 birr/qt) and VI having (49 birr/qt). The retailers obtained the highest GMM at channel II (81 birr/qt) and channel V (54 birr/qt) where as wholesalers obtained the highest marketing margin at channel V (70 birr/qt) and IV (68 birr/qt). Also, the GMMc was highest in VI and VII which was 57 birr/qt and 61 birr/qt, respectively. Total gross marketing margin was highest in channel III (43.7%) and lowest in channel IV (24%).

### Trader's profit

The NMMp, NMMc, NMMw and NMMr are net marketing margins of producers, collectors, wholesalers and retailers, respectively. The difference between gross marketing margin and marketing cost incurred in the process of ware potato trading gives the marketing profit or net marketing margin of traders. As illustrated in the table 13, producers gained highest profit in channel I (27 birr/qt) and channel VI (21 birr/qt) while the wholesaler gained highest NMM in V and IV. Collectors were benefited in Channel III (36 birr/qt), and retailers obtained highest NMM in channel II (50 birr/qt). Profit for collector and retailer was higher because of the direct purchase from the farmers.

### Conclusion and Recommendations

The major findings of the study are summarized as follows. The most commonly produced crops in the study areas include: Ware potato, onion, maize and barley. From the listed crop items, ware potato production is dominant in

terms of total area covered by ware potato product. The study revealed that most of ware potato product was produced for the market.

From the study results it is possible to conclude that, even though there were potential conditions for ware potato production in the study areas; the sector was constrained by different production and marketing problems like diseases, drought, insects (pests) problems, lack of sufficient irrigation water, limited access to supply of agricultural inputs, lack of adequate extension services, poor linkage with value chain actors, loss of produce, low produce quality and price fluctuation. Therefore, interventions are required to improve the efficiency of ware potato market chain in the study areas in order to solve price fluctuation found in ware potato.

The study result revealed that the marketing system found in the study area was not well developed due to lack of market information. Hence, dissemination of market information is vital for improving the whole marketing systems. Having the market information will increase the bargaining power of the farmers and level of market participation. As a result, market information consistently helps the farmer to inform them how to reduce production costs and marketing as well. Lack of market information is one reason why the farmer obtains lowest gross marketing margin. Hence, establishment of market information for all marketing actors helps improve the market efficiency.

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