World Journal of Agricultural Sciences 14 (6): 190-199, 2018
ISSN 1817-3047

DOI: 10.5829/idosi.wjas.2018.190.199

Value Chain Analysis of Ware Potato: The Case of West Showa Zone, Central Ethiopia

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Abstract: Ambo and Dendi districts are the major ware potato potential districts in Ethiopia. However, despite the production potential, the prevalence of production and marketing constraints hampered the crop to provide the majority of its advantages. Thus, this study attempted to analyze the value chain of ware potato in Ambo and Dendi districts of Oromia region during the cropping year of 2016 with the specific objectives of describing and analyzing ware potato value chain and identifying market channels and assessing market performance of value chain actors. Data were collected both from primary and secondary sources. Primary data were collected from a total of 197 sampled respondents were interviewed randomly from both districts. Descriptive value chain along with market margin analysis was used as a means of data analysis. The major value chain activities in the study area are production, marketing and consumption. From the total volume produced, a total of 1, 366 and 938 tons of ware potato, accounting 76.28% and 68.68% were sold in Ambo and Dendi districts, respectively, during study period. Seven marketing channels were identified. Also, the study result revealed that ware potato farmers encountered with diseases and insects (pest) problems, lack of sufficient irrigation water, limited access to supply of modern agricultural inputs, poor linkage with value chain actors, post-harvest loss, low production and productivity and low seed supply. On marketing side, limited access to market, lower price and price fluctuation of ware potato and storage problem. Furthermore, the study finding showed that the major actors of value chain include producers, local collectors, wholesalers, retailers, processors and consumers. Likewise, the study pointed out that ware potato were passed through different intermediaries with little value is being added before it reached to the final user and greater profit share goes to collectors (48.65%) followed by farmers (16.2%). Hence, policy aiming at linking farmers to consumers, giving training for the farmers on reducing the post-harvest loss and other services and cooperative development are recommended to improve effective production and marketing of ware potato.

Key words: Actors · Market Channel · Market Margin · Value Chain Analysis · Ware Potato

INTRODUCTION

Ware potato plays a multiple and important roles in local food systems and for food security in that the crop is well suited for the cultivation in environmental conditions where other crops may fail and it's short and flexible vegetative cycle makes potato well suited for rotation with other major crops, such as wheat, rice, maize or soybeans [1]. Potato also represents an important source of energy, with a high delivery of energy per unit land, water and time and as a source of minerals and vitamins for the diet. Nutritionally, the crop is considered to be a well-balanced major plant food with a good ratio between protein and calories.

In Ethiopia, ware potato is produced during the two seasons i.e., *meher* (September-February) and *Belg* season (March-August). However, the main season for potato production is taking place during the *meher* season. Ethiopia is potentially considered as the highest potential for potato production of any country in Africa, with 70% of its 13.5 million hectares of arable land is suitable to its cultivation [2]. The country has good climatic and edaphic conditions for higher ware potato production and productivity. Compared to cereals, ware potato is a short duration crop that can yield up to 30-35 t/ha in 3-4 months in Ethiopia [3]. In Bhutan, it is reported that the potential yield of ware potato can reach up to 50 t/ha [4]. However, the ware potato sub-sector in

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Ethiopia is relatively underdeveloped and is faced low productivity of less than 10 t/ha. Furthermore, as [5] indicated, the average productivity of potato was almost constant between 6-8 t/ha in the last 20-30 years while the area planted with potato was 67, 356.84 hectare producing around 9, 218, 320 quintal having the productivity of 136.86 quintal/ha during 2014/15.

The total potato production in West Showa zone for the year 2014/15 was 1, 894, 472.30 quintals produced by 109, 773 peasant households cultivating potato on 10, 887.77 hectares during the main production season. The average productivity in quintal per hectare was 174. Even though there is huge demand and potential for ware potato production in both districts, the production of ware potato carried out in this particular study areas is low and below its potential. Still now, farmers are facing different problems such as the use of local inputs (Due to low improved seed supply), spread of pests and diseases, inadequate logistical facilities (Storage, transport and handling) and low production and productivity and lower price and price fluctuation. This indicates a need for more generalized study which carefully examines ware potato value chain in the study areas. Therefore, this study investigates the creation of value addition in the production of ware potato by applying the concept of VCA, to increase the production and productivity of ware potato and to analyze the market channel and margin in the selected study areas. To this end, this research was initiated with the analyzing and developing value chain map of the ware potato in the study areas.

MATERIALS AND METHODS

Description of the Study Areas: The study was conducted in two major ware potato producing districts, West Showa Zone, Oromia Regional State. These include: Ambo and Dendi districts and PA (Peasant Association) (The lowest administrative organ in the Ethiopian government structure which is equivalent to villages) in each of the selected zones.

Sources of Data: The study used both primary and secondary data sources. Primary data was collected through questionnaire and focus group discussion with checklist. Focus group discussions were held with two groups based on pre-determined checklists and a total of 17 key informants were interviewed from different organizations and institutions. Secondary data was collected from published, unpublished reports, journals, country, zonal, regional and district level reports, CSA and different articles.

Sampling Technique and Sample Size: The study employed multistage sampling technique to select sample households. In the first stage, out of 22 districts in the west showa zone, two districts namely Ambo and Dendi were purposively selected based on their potential in ware potato production. In the second stage, out of the two districts, a total of 5 peasant associations (3 from Ambo and 2 from Dendi) were randomly selected based on probability proportional to the number of PAs in each district. In the final stage, a total of 156 sample household heads were randomly selected based on probability proportional to the size of the households in the selected PAs.

In addition to producers, samples respondents were also selected and interviewed from traders and consumers in terms of availability and based on their function. A list of traders (Wholesalers, local collectors and processors) were obtained from the district Office of Trade and Industry (OoTI). Hence, depending on the total number of traders found in both district, 21 traders were selected randomly. Finally, 20 consumers from both districts were interviewed randomly.

Table 1: Household sample design (HHs), 2016

		Total number of Hhs			Sample HHs		
Study area (District)	Sample kebele	Male	Female	Total	Male	Female	Total
Ambo district	*Ya'eChebo*	224	44	268	21	4	25
	IlamuGoromti	230	50	280	21	5	26
	Golja	215	36	251	19	4	23
Dendi district	*GalesakotaGashere*	343	74	417	32	7	39
	GalesaKoftu	384	84	468	35	8	43
Total		1396	288	1684	128	28	156

Source: Field survey by the author, 2016

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 with the help of statistical package for social science (SPSS) version 20.0 and Analysis results were presented using tables and figures.

RESULTS AND DISCUSSION

Demographic Characteristics of Sampled Producer Households: Total number of sampled households handled during the survey year was 156. Majority of the respondents (82.4% and 81.7%) were male headed households in Ambo and Dendi districts, respectively indicated that more of the sampled households were male headed. This implies that the participation rate of females in potato production was very low; which might be related to cultural belief of the society. In relation to marital status, majority of sampled producers were married (92% & 90%), (2% & 3%) were single and (6% & 7%) were widowed in Ambo and Dendi districts, respectively. Around 56% and 58% of the respondents were literate in the respective districts. In relation to mean age, measured in years, provides a clue on working ages of the households. The mean age of farmers in the study area were 47.2 & 44.4 years ranging from 39-63, in Ambo and Dendi districts, respectively with the total mean age of 45.7 years. This indicates that farmers in Ambo district have higher mean age as compared to Dendi producing farmers, helping farmers to supply more because the largest proportions of the household lie within a working age group. This is in line with Biruk Seifu [6] which showed that if the majority of the household are under the active age group, there is perception to new technologies.

The respondents have a mean of 8.3 and 6.9 years of farm experience in ware potato production in Ambo and Dendi districts, respectively. Availability of cooperative membership of potato producing household was affecting the total production. Thus, majority of the respondents, 68.9% and 62.2%, have been a member of cooperatives from Ambo and Dendi districts, respectively. This indicated that larger numbers of the households were accompanied under the cooperative member in Ambo district as compared to Dendi district.

Ware Potato Production and Productivity

Production Season: The survey result showed that ware potato production takes place in the two production seasons, *meher* and *belg*. This is in line with the report made by Alemu Kassa [2] in that there are two production seasons of potato in Ethiopia.

The study result also indicated that farmers in both districts have been producing more yield through rain-fed lasting between mid-May to mid-September. Also, producers in both districts are producing with irrigation scheme (During the short rainy season) lasting from October to April/May. Level of production during the short rainy season was much lower than the main rainy season which was attributed to the type of variety farmers are growing (Which was local), poor seed quality, diseases and weed problem. The mean productivity of ware potato produced under rain-fed was 8.8 t/ha and 5.9 t/ha in Ambo and Dendi districts, respectively. According to the Zonal Bureau of Agricultural Office report, the market supply was higher during the May and June when the farmers produce with the help of rain fed and level of supply were medium during the months of December-February when the farmer produces under supplementary irrigation.

Land Holding Size and Area Allocated for Ware Potato Production: The average land holding size of the respondents were 3.6 and 3.5 ha in Ambo and Dendi districts, respectively which is higher than the average national (1.77 ha/HH) [7]. In all regions of Ethiopia, more than 90% of farm households own the land they cultivate [7]. The whole sampled farmers, (100%) have their own arable land and the average potato land size were 2.9 and 2.7 ha at Ambo and Dendi districts, respectively. The remaining land was allocated for grazing and irrigable purposes.According to Muluken Marye [8] and Habtamu Gebre [9] report, the availability of land enabled farmers to produce and participate more on agricultural output. Also, as Biruk Seifu [6] revealed that more land size means more cultivation and more possibility of production which in turn increases farm income and improves food security. This indicated that farmers in both districts have their own land in which they produce and supply the crop to the nearby market.

Ware potato productivity: Is assessed and found that the average yield was 7.4 t/ha & 5.8 t/ha in Ambo and Dendi district, respectively, under both rain and irrigation production during the survey year. The production in both district was below the average national of 11.6 t/ha during 2013/14 [10]. Also, the production was far lower than its potential of 35 t/ha reported in different parts of the nation [11]. During the FGD, farmers witnessed that low yield production was due to use of local variety seeds, occurrence of diseases and crop management.

Table 2: Average productivity of ware potato in 2016 production year (t/ha)

Districts	Production system	N	Minimum	Maximum	Mean
Ambo	Rain fed	56	2	20	8.8
	Irrigation	18	2.5	32	7
Dendi	Rain fed	59	2	16	5.9
	Irrigation	23	2	24	5

Source: Own computation from survey result, 2016

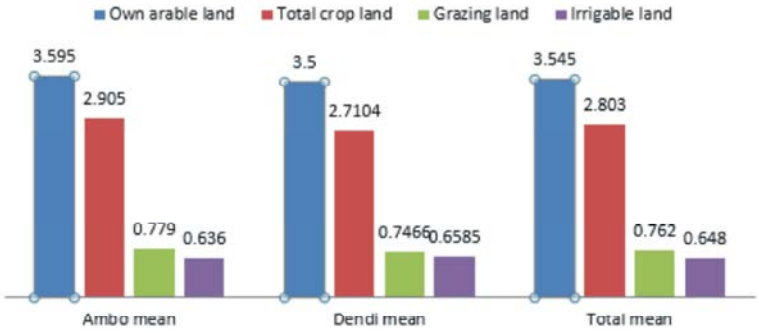

Fig. 1: Land ownership and allocation of the land per household (Average hectare)

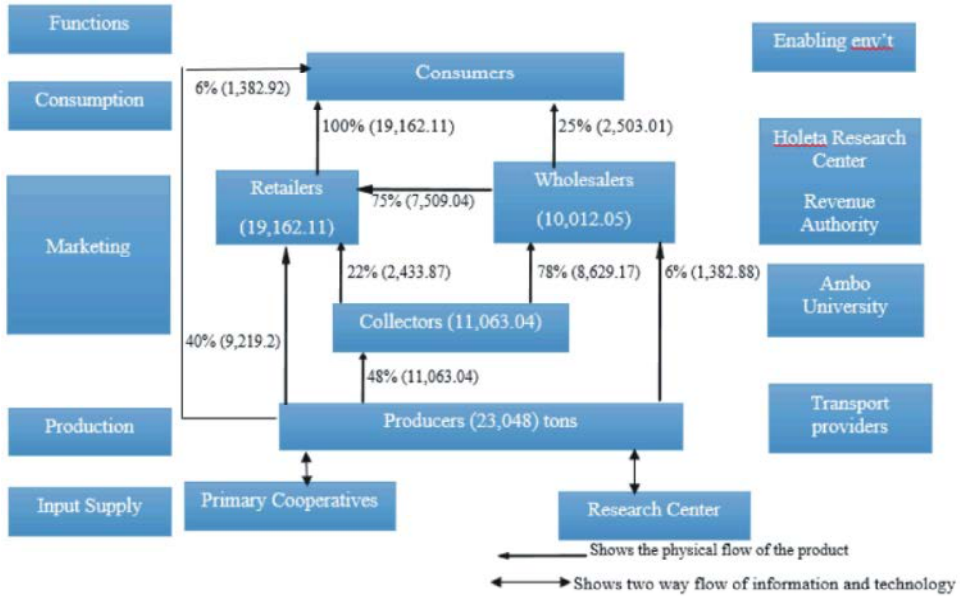

Fig. 2: Value chain Map; Source: Drawn from survey actors (2016)

Value Chain Analysis

Value Chain Map of Ware Potato in the Study Areas: According to McCormick and Schmitz Hubert [12] value chain mapping enables to visualize the flow of the product from conception to end consumer through various actors in that it helps to identify constraints and opportunities in the chain and identify different actors involved in ware potato value chain. The value chain map of ware potato in both Ambo and Dendi districts are indicated in diagram below (Figure 2).

Value Chain Actors and Their Function in the Study Areas: Value chain map illustrated that interaction of different actors who participates directly or indirectly in the value chain. Direct actors are owners of the product taking risk in the chain: basically buying from other actors, processing (In which ever form) the product and selling the product to the next actors. These are (Input suppliers, producers, traders, consumers). Indirect actors are those that provide financial or non-financial support services to direct actors. They can be value chain

supporters such as financial institutions, transporters, brokers, etc and value chain influencers that include government.

Input Supply Stage

Input Suppliers: The possible sources of ware potato improved seed in the study area were: primary cooperatives, research center and private input suppliers. The study result was in line with Biruhalem Kassa [13] who revealed that primary cooperatives are the most important source of rice seed. Regarding to fertilizer, producers used only organic (Manure and compost) while others used organic and inorganic fertilizers. Farmers with financial liquidity shortage used insignificant proportion of inorganic fertilizer and compost. The major sources of chemical fertilizers were primary cooperatives or private traders. The total number of sampled farmers who used modern farm inputs of ware potato were71 (95.95%) and 76 (92.68%) in Ambo and Dendi districts, respectively (Table 3) with the most widely used type of improved ware potato varieties are "Holland", *Jalene*, *Gudene* and *Chimdi.* Some farmers are also using organic fertilizers such as manure and compost along with chemical fertilizer.

Production Stage

Ware Potato Producers: Ware potato growers are the major value chain actors who are directly involved in ware potato production 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. They are generally small holder farmers having an average potato land size of 2.8 hactares. The present study result indicated that about 6.76% (1, 211.18 tons) and 9.76% (1, 330.19 tons) of ware potato produced were damaged before it reached to the market in Ambo and Dendi districts, respectively (Figure 3). About 43.5% and 48.7% of producers conducted cleaning, transporting and storing activities to reduce damage from their yields before selling their produces in Ambo and Dendi districts, respectively.

Mode of transportation and marketing options were considered by farmers in selling their product.Producers mainly used back animals (46.3% and 45% in Ambo and Dendi district) to transport their product from the area of production to the area of marketing. Ware potato growers used different market outlets in order to sell their product, being collectors and retailers were the big receivers of their product amounting 48% and 40%, respectively (Table 4).

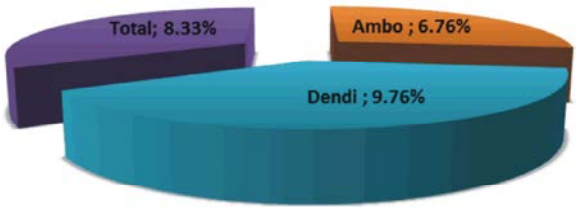

Fig. 3: PHL of ware potato in % of production, Source: Own computation from survey result, 2016

Table 3: Sources and Varieties of potato input (by % of respondents)

Source	Ambo (71)	Dendi (76)	Varieties
Primary cooperatives	35	41	Holland, Jalene, Gudene, Chimdi, Local
Local market	7	8	
Research center	31	26	
Private suppliers	27	25	
Total (N)	100	100	

Source: Own computation from survey result, 2016

Table 4: Farmer's market outlets for ware potato

Agents	% of farmer's outlet Ware potato
Local collectors	48
Retailers	40
Wholesalers	6
Consumers	6

Source: Own computation from survey result, 2016

Marketing Stage

Collectors: Are traders who usually collects ware potato from potato growers and village market for the purpose of reselling to wholesalers and retailers. Collectors are main actors in ware potato value chain and where responsible for trading of 78% and 22% to retailers and wholesalers, respectively. 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 exists. Usually, traders add a value to the product which includes assembling, cleaning, sorting, grading, transporting and selling to the markets.

Ware Potato Processing: Processors are actors who involved in the transformation of a product from one form to other. Ware potato is mostly consumed in the form of boiled and cooked meals, chips and `*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 area. 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: Are value chain actors who purchases 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. Wholesalers are responsible for absorbing 6% of the total market supply of potato in the study area. Also, from the total ware potato they receive from the producers, they sold greater share (75%) to the retailers and 25% to the final consumers.

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, transporting to the retail shops, grading, displaying and selling to the consumers. 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.

Consumption Stage

Consumers: These are value chain actors who buy the product for final consumption. In type, households, restaurants, cafes and institutions such as higher education institutions, hospitals and others are some. Most of the consumers purchase ware potato product from producers, wholesalers and retailers. Producers were also producing ware potato product for home consumption.

The survey results showed that, from the total sampled producer respondents, on average, 1.6 t/ha and 1.4 t/ha of ware potato produced were used for consumption by the farm households in 2016 in Ambo and Dendi districts, respectively. From the total produced ware potato crop, about 16.9% and 21.4% were used for home consumption in Ambo and Dendi districts, respectively. Even if the farmers are producing the crop for the market, significant proportion of ware potato crop were used for home consumption as well.

Ware Potato Supporting Actors and Their Function: They are actors who never directly deal with the product, but whose services can add values to the product. The service provided by supporting actors include: training, advisory and credit service for the production practices.

Apart from the above listed supporting activities by different stake holders, none of the respondents reported that they did not obtained other essential value chain support service schemes such as market information, business management services and technology services for several years.

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& 9, 380.45 tons, together 23, 048.68 tonsof ware potato fromAmbo and Dendi districts, respectively, were marketed or supplied to the market and sold by the sampled respondents during the survey year.

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)

Analysis of Market Performance: The marketing performance of ware potato was analyzed by using marketing margin estimation, which 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: To measure the market share of each actor, the marketing channel in which all actors participated was selected and depicted on table 6. 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.

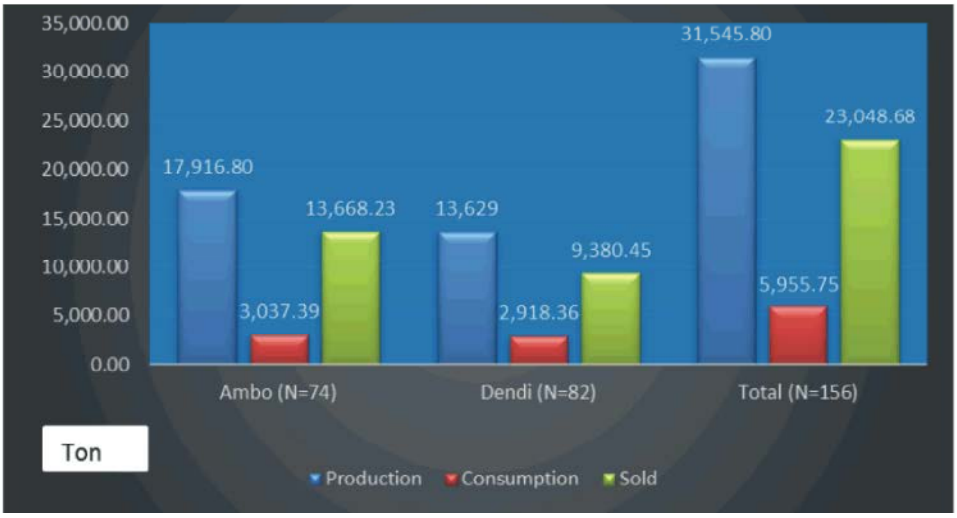

Fig. 4: Average amount of ware potato produced, consumed and sold at a household level, Source: Own computation from survey result, 2016

Table 5: Access to services by sample respondents

		Ambo (N=74)		Dendi (N =82)	
Variables	Items	N	%	N	%
Credit access	Yes	22	29.73	25	30.49
	No	52	70.27	57	69.51
Advisory service	Yes	67	90.54	70	85.37
	No	7	9.46	12	14.63
Training Access	Yes	67	90.54	61	74.4
	No	7	9.46	21	25.6

Source: Own computation from survey result, 2016

Table 6: 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
Marketing cost					
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
Total marketing cost	28	29	37	31	125
Total cost	193	29	37	31	290
Sales price	205	270	317	364	1156
market margin	40	65	47	47	199
% share of margin	20	32.8	23.6	23.6	100
profit margin	12	36	10	16	74
% share of profit	16.2	48.65	13.55	21.6	100

Source: Own computation from survey result, 2016

The different types of marketing margin and cost relating to the different market chain actors (Producers, collectors, wholesalers and retailers) showed differences (Table 6). The percentage share of profit was high for the collectors (48.65%) as compared to that of the producers (16.2%). This finding is in line with Ayelech Tadesse [14] and Amare Tesfaw and Dawit Alemu [15] 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 Tegegn [16] finds that traders took more than half of the total profit margin while the farmers took lesser amount of the profit.

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 [14, 17, 18].

Marketing margins of potato in the seven channels for each market actors were stated above in Table 7. 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) whereas 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%).

Producer's and 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 7, 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.

Constraints and Opportunities of Ware Potato Value Chain: As Habtamu Gebre [9] indicated, the need for value chain analysis is to clearly identify major bottlenecks to the developments of value chain ranging from input supply to the final consumption. Through focus group discussion, a number of constraints and opportunities were identified from various value chain actors in table below:

Table 7: 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, 2016

Table 8: Constraints and opportunities of ware potato

Value chain stages	Constraints	Opportunities
Input supply	Shortage of improved seed	High demand for quality seed
	Absence of irrigation scheme	High demand for irrigation scheme
	Shortage of farm tools	High demand for modern farm tools
	Cost of fertilizer	High demand for fertilizer
Production	Post-harvest loss	Presence of support from other actors
	Capital shortage for potato growers	High production and productivity
	Occurrence of frost	Suitable land and climatic condition
	Shortage of modern input (HYV seed, chemicals, fertilizer, etc)	High demand for potato production
Marketing	High seed potato price	Government spending on infrastructure development
	Lack of all-weather road	Establishment of cooperatives
	Traders suppressing potato price	Establishment of credit providers
	Price fluctuation	Government incentive and encouragement for research
	Lack of grading and standard	High demand for ware and seed potato
	Lack of improved storage facilities	
Processing	Lack of processing plant	Availability of ware potato in all year round
Consumption	Traditional way of ware potato processing	High demand for ware potato (being daily food dish mix)

Source: Group discussion (2016)

CONCLUSION AND RECOMMENDATION

Above and beyond home consumption and saving potato as a seed, a greater proportion of potato was supplied to the market. From the production perspective, the study result indicated that most of potato production was carried out during the long rainy season. The mean ware potato productivity in the study area during the main production season were 8.8 and 5.9 t/ha in Ambo and Dendi districts, respectively, which is lowest both at the average national (11.67 t/ha) and potential (35 t/ha). Seven ware potato marketing channels were identified in the study area and major elements of marketing channels were producers, collectors, wholesalers, retailers and consumers. The survey result revealed that potato growers were mainly producing with the help of rain-fed agriculture. The average land holding size of ware potato growers in the study area was very low as compared to the national land holding size (1.77 hectare/household). The percentage share of profit was high for the collectors (48.65%) as compared to that of the producers (16.2%). Even though the farmers work hard and bear the risk, potato growers gained much less profit share than any other value chain actors and it needs intervention in order to improve benefit received by farmers through accessing them to higher markets. In addition, the price gap observed from producer to consumers was due to urban consumers paid higher price from retailers. Even though there were potential conditions for ware potato production in the study areas; the sector was constrained by different production and marketing problems such as diseases, insects (Pests) problems, frost, lack of sufficient irrigation scheme, limited supply of modern agricultural inputs, poor linkage with value chain actors, loss of produce and low produce quality. Hence, interventions are required to improve the efficiency of ware potato value chain in the study areas and the following main issues are forwarded as recommendations for the interventions.

- Improve the seed system (Through promoting seed producers to produce)
- Giving training for the farmers on reducing the post-harvest loss
- Supporting the private sectors in the enhancement of potato processing
- Creating strong linkage among farmers with the research centers
- Train farmers on potato management practice, creating awareness about production, sorting, grading and quality control.

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