

## **Enset Product Market Chain Analysis: The case of Wonchi District, South West Shoa Zone, Oromia National Regional State, Ethiopia**

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**Abstract:** In Ethiopia, enset is one of the indigenous root crops widely cultivated in the south and south western parts, particularly in Wonchi district. It is a major source of food and cash income for majority of smallholder farmers. This study aimed to identify enset product market actors and their roles; as well as market channels; product marketing margin in Wonchi District. Both primary and secondary data were used for the study. Primary data were collected from randomly selected 184 sample enset producers through two stages sampling technique and from 33 kocho traders. The data were analyzed by descriptive methods. The results indicated that producers, wholesalers, retailers, village collectors and consumers were the enset product (kocho) market chain actors. The benefit share of producers ranges from 65.01% (channel III and IV) to 100% (channel I). Responsible bodies should pay an attention in optimizing the benefit share and minimizing unbalanced share of benefit among the market actors and rising experience producers through experience sharing on the enset production.

**Key words:** Kocho • Market actors • Marketing margin • Wonchi

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### **INTRODUCTION**

**Background of the Study:** In Ethiopia, root and tuber crops are the second largest crops, after cereal crops in terms of quantity of production [1]. Those crops contribute a major share in traditional food system of many people. They play a vital role in food security especially in south and south western part of Ethiopia. *Enset*, *anchote*, potato, onion, carrot, yams, taro and cassava are the major root and tube crops grown in the country [2].

*Enset* (*Enset ventricosum*) is one of the indigenous root crops widely cultivated in the south and south western parts of Ethiopia. *Enset* domestication started in Ethiopian highlands between 5, 000 and 10, 000 years ago [3]. It looks like a large, thick single stemmed banana like plant. Usually it is larger than banana and 6-12 meters tall. Its leaves are 5-7 meters tall and 1 meter in diameter and are more erect than a banana plant. Its cultivation can be restricted to altitudes between

1600 and 3000 meter above sea level with an average annual rainfall of 1100 to 1500 millimeter and is chiefly propagated vegetatively [4].

According to (6) the total area under *enset* crop in Ethiopia estimated 312.17 thousand hectares, whereas the total area under this crop in Southern Nations Nationalities and Peoples Regional State is 217 thousand, Oromia 94 thousand and Gambella region 0.382 thousand hectares. During meher<sup>1</sup> season from Ethiopian private peasant, total of 127.3 million *enset* crops were harvested and produced 34.8 million quintals of *kocho*<sup>2</sup>, 1.1 million quintals of *bulla* and 29.4 million quintals of *amicho*<sup>3</sup>. In the same period, 45.7 million *enset* plants were harvested and produced 11.9 million quintals of *kocho*, 680.6 thousand quintals of *bulla* and 10.1million quintals of *amicho* in Oromia region [1].

From Oromia region Jimma, Borana, Guji, West Arsi, South West Shoa and West Shoa Zones are the *enset* potential Zones [5]. The South West Shoa Zone is one of the outstanding *enset* crop accommodated area.

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<sup>1</sup>Meher is a main season between September and February

<sup>2</sup>Kocho is the bulk of the fermented starch obtained from a mixture of the decorticated leaf sheaths and pulverized corm.

<sup>3</sup>Amicho is the fleshy inner portion of the enset corm, which is eaten as a root and tuber crop after being boiled.

In the zone about 18.3 thousand hectares were under *enset* farming [6]. The crop is produced in all districts of zone except Sodo Daci and Ilu districts. Wonchi district is one of the potential and well known by *enset* crop production, about 5428 hectares of the districts' cultivated land is covered by this crop and all kebeles in the district produce the crop.

*Enset* is considered as a food security crop in different parts of Ethiopia as it can withstand long periods of drought, heavy rains and flooding, which devastate other crops [7]. It is grown largely for food security reasons, if cereal crops fail and eaten in the form of *kocho* and *amicho*. Therefore, *enset* is called "The tree against hunger" in Ethiopia [8]. It is a major crop where more than 20% of the people in Ethiopia depend on this crop mainly in the southern and south western parts [9]. The crop has also used as farmers' adaptation strategy to climate change [10].

[11] Listed *kocho*, *bulla* and *amicho* as the major food products obtained from the *enset*. From the three food products of the *enset*, *kocho* and *bulla* were supplied to different markets from production site. Due to its perishable nature, *amicho* is not delivered to market. According to [12] the largest proportion of *kocho* was supplied to the market rather than consumption. Therefore, in this study *enset* product refers to only *kocho*; other *enset* products such as *bulla* and fiber are not considered.

*Enset* crop is crucial in the Ethiopian context and specifically in the study district. It has a significant contribution to the livelihood of producers as income sources as well as ensuring of food security. Currently, about 19860 households of Wonchi district are engaged in the production of this crop and leading their life based on *enset* farming. The activity is mainly meant for additional income generating activity on top of other crop production like maize, *teff*, wheat and barley and livestock rearing. In fact, *enset* has been the main food and cash crop in the district [13]. Specifically, in Wonchi District marketing chain analysis of *enset* product is not investigated so far. Given the importance of *enset* crops understanding the *enset* product market chain is crucial.

**Objectives of the Study:** The specific objectives of the study were:

- To identify *enset* product market actors and their roles;
- To identify *enset* product market channels; and

- To analyze *enset* product marketing margin in Wonchi District.

## MATERIALS AND METHODS

**Description of the Study Area:** Wonchi district is located in Oromia regional state of South West Shewa Zone, Ethiopia. It is one of the eleven districts in south west shoa zone and about 9 kilometer and 123 kilometer from Waliso town and Addis abeba respectively. The districts approximately found between 1600 and 3576 meter above sea level. Wonchi district is bordered on the south west by Goro, on the west by Ameya, on the north by Ambo and on the east by Waliso districts. The district has 23 rural kebeles [13].

The district has two agro-ecologies; highland (40%) and midland (60%). The mixed farming system of both crops and livestock are common economic activity in the district. The important crops grown in the district are maize, *teff*, wheat, barley, *enset* and onion. According to [13] in 2017/2018 production year 835352 quintals of cereal grain, 8078 quintals of pulse grain, 281723 quintals of horticultural crops, 31764 of live-animals, 5253 tones of hide and skin were supplied to the market. Moreover, 39936 quintals of *enset* products (*kocho* and *bulla*) were supplied to the market. In general, Wonchi district is the major producer of *enset* from south west shewa zone and *enset* production is considerable sources of cash in the district [13].

### Data Types, Sources and Methods of Data Collection:

This study used household survey data collected from Wonchi District. In order to generate sufficient information both quantitative and qualitative data from primary and secondary data sources were used. Primary data were collected from randomly selected *enset* producers and *kocho* traders. To collect primary data semi- structured questionnaire were prepared and pre tested on sampled *kebeles* was made to evaluate the appropriateness of the design, clarity and amended based on feedback. The data was collected using two type of developed questionnaires one for producers and the other for *kocho* traders. In addition, checklist was used to generate data through focus group discussion and key informant interview.

**Sampling Techniques and Sample Size:** Two stages random sampling method was used to select the sample household heads. In the first stage out of twenty three

Table 1: Sample distribution of *enset* producer households in selected kebeles

No	Kebeles	Total households in the kebele	Sampled households
1	Haro wonchi	1068	46
2	Weldo talfem	1010	44
3	Worabu masse	516	25
4	Haro basaka	646	30
5	Sonkole kake	904	39
Total		4144	184

Source: WDANRO, 2018 and own computation result

Table 2: Distribution of *kocho* traders by market

Type of traders	<i>kocho</i> traders				Total
	Haro	Aroji	Worabu	Waliso	
Wholesalers	4	1	-	4	9
Retailers	3	2	3	-	8
Village collectors	5	6	5	-	16
Total	12	9	8	4	33

Source: own computation result (2018)

kebeles, five kebeles were selected randomly from the district. Accordingly, 184 *enset* producers were selected randomly from the district. In second stage, from list of *enset* producer households in the sampled *kebeles*, 184 households were selected randomly. The total number of households taken from each *kebeles* was based on, [14] proportional sample allocation formula and given by equation (1) below;

$$n_i = \frac{nN_i}{N} \quad (1)$$

where:  $n_i$  = Sampled households from  $i^{th}$  kebele

$n$  = Sample size

$N_i$  = The total households in  $i^{th}$  kebele

$N$  = Total households in selected kebele (sum total of households in five kebele).

Sampling of traders remains difficult due to lack of complete data on the number of *kocho* traders list in the district as well as in the waliso town. As a result, traders available during survey in the market were considered. Accordingly data were collected from 33 *kocho* traders (Wholesalers, retailers and village collectors) from three village markets in the district where large volume of *kocho* transactions take place namely; Haro, Aroji, Warabu markets and one central market, waliso *kocho* barenda which is found in waliso town respectively (Table 2).

**Methods of Data Analysis:** To describe the demographic of sample *enset* producers and *kocho* traders in the study area, the descriptive statistics were used. Marketing margin analysis also used to evaluate the marketing margin of the *kocho* in the study area. Total gross

marketing margin calculation is always related to the final price paid by end consumer and is expressed as a percentage. Thus, the total gross marketing margin was computed using by equation (2) below;

$$TGMM = \frac{P_c - P_p}{P_c} \times 100 \quad (2)$$

where: TGMM = Total gross marketing margin

$P_c$  = Consumers price

$P_p$  = Producers price

The producers' margin or share in the consumer price (GMM<sub>p</sub>) was calculated by equation (3);

$$GMM_p = \frac{P_c - TGMM}{P_c} \times 100 \quad (3)$$

$$GMM_p = 100 \% TGMM$$

where: GMM<sub>p</sub> = Producers share in consumer price.

Precise marketing costs are frequently difficult to determine in agricultural marketing chains, for this reasons net marketing margin was not calculated.

## RESULTS AND DISCUSSION

**Demographic and Socio-Economic Characteristics of Sample *Enset* Producer Households:** From total of 184 sampled *enset* producers 118 (64.13%) were participants in *kocho* market while the remaining 66 (35.87%) were non- participants during 2017/18 production year. From total sample producers 105 (57.07 %) were female headed including female spouse in male headed and the remaining 79 (42.93%) were male headed households.

Bear in mind here, household is one who made decision about *kocho* marketing in context of this study. Among *kocho* market participants, female and male headed households constitute 70(59.32%) and 48(40.68%) respectively. Out of non-participants, 35(53.03%) were female headed while the remaining 31(46.97%) were male headed households.

**Land Ownership and its Utilization by Sampled Enset Producer Households:** One of the most important factors that influence crop production is availability of land. The sources of total land operated by the sampled households during survey period was divided as owned land, rent in and share in farm land. The analysis of survey data show that the average total land sizes allocated for *enset* production by sampled respondents about 0.27 hectares and owned by the sample respondents was 1.55 hectare. This average land holding size by sample respondents is lower than 1.7 hectare in Oromia and higher than 1.4 hectare per household at national. Out of the total sample households 20(10.87%) owned less than a hectare of land whereas 23(12.5%) and 141(76.63 %) owned one hectare and above one hectare respectively.

**Demographic and Socio-Economic Characteristics of Kocho Traders:** From a total of 33 sampled traders 27.27% are wholesalers, 24.24% are retailers 48.48% are village collectors. As indicated in Table 10, out of the total sample traders, 87.87% were female and 12.13 % were male since in the study area a trading *kocho* is regarded as females' activity. Unlike trading in other activities, female in the study district are more motivated in *kocho* trading due to less competition from male counterparts. Among sampled *kocho* traders, only 27.27% of them have legal trading license and 72.73% of them do not have license. The survey result also shows that about 87.87% of traders are trading alone since they are females and 12.13% traders are trading with his wife because of checking the quality and packing the *kocho* purchased not allowed for male.

The mean age of the sample *kocho* traders were 36 years ranging 25 to 50 years. The mean family sizes of the traders were 4.84 families per traders with ranging 3 to 10 family sizes. Regarding educational level of traders, survey result shows that mean education level of traders was 5.09 years of formal schooling. On average sampled traders have 7.81 years of *kocho* trading experience.

The mean initial working capital of sample *kocho* traders were 4639.39 ETB with ranging from 500 to 20000 ETB and Own saving is the solely source of working capital for the sampled *kocho* traders. Currently working capital was reached on average 22175.76 ETB<sup>4</sup> ranging 1800 to 100000 ETB (Table 11).

**Enset Production and Amount of Kocho Produced by Sample Enset Producer Households:** In the study area growing *enset* is one of the most important crop cultivation which has been playing an important role in the livelihoods of the growers by serving as food and cash source. It also serves as feed for livestock and airing in most cases. *Enset* plantation is mainly during winter months of December, January and February and it can be harvested throughout the years. During focus group discussion one farmer said having one *enset* crop was more than having one quintal of cereal crops and also he called *enset* is our gold crop.

The common farm inputs used in *enset* production in study area includes: manure and compost, fertilizers, local *enset* seed variety. About 91.30% of respondents used manure and compost as organic fertilizer and only about 8.70% used both manure and compost and inorganic fertilizers. The survey result showed that about 79.89% *enset* producing farmers get sources of *enset* seeds from their own farm by planting *enset* seeds. About 13.04% of *enset* producing farmers used purchased *enset* seeds from the private owner (friends and neighbors) and the remaining 7.07% of farmers used both own farm and purchased *enset* seeds.

All sample *enset* producers used local varieties of *enset* plant. It was found that more than 10 *enset* varieties were grown in the districts for different purposes. These varieties had their local names based on their morphology difference, color and purposes of uses. From these varieties, five varieties were the most common in the study area. The most important varieties as per farmers' ranked were: *baladeti*, *farase*, *hawegne*, *beshalga* and *urage* (FGD). The main sources of labor used for *enset* production includes family labor, hired labor and, *debo*<sup>5</sup> and *wonfel*<sup>6</sup>. About 57.65%, 31.35% and 11% of *kocho* market participants used family labor, hired labor and, *debo* and *wonfel* respectively. While non-participants 87.88% and 12.12% used family labor and, *debo* and *wonfel*. The use of family labor in *enset* production was common for both market participants and non-participants in the study area.

<sup>4</sup>As of July, 2019, the official exchange rate is one USD to 28.89 ETB.

<sup>5</sup>Debo means individual women come together and contribute labour and skills without payment.

<sup>6</sup>Wenfel means a labor lending when a women work together one day on one person's and the other day on other person's job

Table 3: Land ownership and its utilization by sampled respondents

Total land and its source	N	Minimum	Maximum	Mean
Total land (ha)	184	0.750	4.125	1.700
Owned land (ha)	184	0.500	4.125	1.550
Rent in( ha)	40	0.250	1.500	0.450
Share in(ha)	15	0.250	1.000	0.530
Land utilization				
Cereal crops (ha)	180	0.250	3.000	1.030
Enset crops (ha)	184	0.063	0.500	0.270
Pulse crops (ha)	68	0.013	0.500	0.220
Grazing land (ha)	176	0.063	0.750	0.280
Others crops (ha)	31	0.063	0.500	0.270
Rent out (ha)	7	0.250	0.500	0.320

Source: Own survey result (2018)

Table 4: Distribution of traders by their sex, trading license and ways of trading

		Kocho traders							
		Wholesalers (N=9)		Retailers (N=8)		Village Collectors (N=16)		Total sample (N=33)	
Variables		N	%	N	%	N	%	N	%
Sex	Female	5	55.55	8	100	16	100	29	87.87
	Male	4	45.45	-	-	-	-	4	12.13
Trading license	Yes	9	100	-	-	-	-	9	27.27
	No	-	-	8	100	16	100	24	72.73
Ways of trading	Alone	5	55.55	8	100	16	100	29	87.87
	With wife	4	45.55	-	-	-	-	4	12.13

Source: Own survey result (2018)

Table 5: Socio-demographic characteristics of sample traders

		Kocho Traders			
		Wholesalers	Retailers	Village collectors	Total sample
Variables		Mean	Mean	Mean	Mean
Age		41.50	34.13	36.00	36.00
Family size		5.25	3.75	4.93	4.84
Educational level		7.75	5.00	4.00	5.09
Kocho trading experience		14.00	2.38	5.62	7.81
Initial working capital		13250.00	1262.50	2750.00	4639.39
Current working capital		77500.00	3725.00	9812.50	22175.76

Source: Own survey result (2018)

Table 6: Sources of enset seeds

Item	Participants		Non- participants		Total sample	
	N	%	N	%	N	%
Planting	89	75.42	58	87.87	147	79.89
Purchasing	17	14.41	7	10.61	24	13.04
Planting and purchasing	12	10.17	1	1.52	13	7.07

Source: Own survey result, 2018

**Kocho Market Chain Actors and Their Roles:** Five *kocho* market actors have been identified in *kocho* market chain in wonchi district. These actors were producers, wholesalers, retailers, village collectors and consumers.

**Producers:** They are considered *enset* growing farmers and all farmers in study area grow *enset* crop. They are major actor involved in both production and marketing of *kocho*. Mainly they started production from input preparation such as *enset* seed to be planted, preparing land, planting it and processing, producing, provide *kocho* surplus to the market. This actor manage the crop up to the plant become well matured for harvesting. As the plant becomes matured, producers themselves process the plants into its main products as *kocho*. To produce *kocho* they harvest the matured *enset* plants from its main field, scraping the pseudo-stem and pulverizing the corm and covering area with *enset* leaves. Then, ferment the mixture of scraped pulp of pseudo-stem and pulverized corm together in the pit which is lined with *enset* leaves. *Enset* producers in wonchi district supply their product either to nearest *kocho* market or central *kocho* market using horse cart, pack animal, truck or traders come to farm gate and buy from them. According to the study, 60.03% and 39.97% sold *kocho* within village markets and outside village market (waliso *kocho* barendra) respectively.

**Wholesalers:** Wholesalers are the actors of *kocho* marketing those who buy large volume of *kocho* and have enough capital with relative to other market actors. There are two types of wholesalers. Those are; district wholesalers and central wholesalers which found in major city of waliso town. District wholesalers are buying *kocho* either from producers or village collectors while waliso wholesalers mostly buy from districts wholesalers and village collectors, sell to hotel and restaurants in Waliso town and Addis abeba. There are no wholesalers who have no license to do wholesale in the study district.

**Retailers:** Retailers are market actors operating with minimum capital in the channels selling to consumers. They mostly buy *kocho* from producers and small portion from the village collectors and resale directly to ultimate consumer. They perform several value addition activities such as transporting, clearing fibers from *kocho* in good manner and selling to end users.

**Village Collectors:** Village collectors are the main actors in *kocho* market chain and playing important role in

collecting *kocho* from producers directly at farm gate and at village *kocho* market for the purpose of reselling to wholesalers and retailers. They are non licensed traders.

**Consumers:** Consumers are those who purchase and consume *kocho* supplied by traders and/or producers. Consumers usually buy *kocho* in small amount to meet their family need. They are the last link in the *kocho* market chain. *Kocho* market chain ended at consumers who buy the products for the ultimate consumption.

**Kocho Marketing Channels:** From a total of 813 quintals *kocho* supplied by sampled producers and purchased by wholesalers, retailer, village collectors and consumers was about 332 quintals (40.84%), 177quintals (21.77%), 257 quintals (31.61 %) and 47 quintals (5.78%) respectively (Figure 1). According to survey result wholesalers and village collectors were the dominant buyers of *kocho* from producers. From view point of *kocho* market flow, out of total *kocho* sold by market participants 44.9% (365.12 quintals) were marketed to Addis abeba. Six *kocho* marketing channels were identified through which *kocho* reaches final consumer during its flows from the producer. From the total volume of *kocho* sold by sample producers the largest amount has passed through channel V (177 quintals) and channel VI (122.85 quintals) followed by channel IV (64.15 quintals) and then channel I, while the least volume of *kocho* (9.43 quintals) transaction passes through channel II.

*Channel I:* Producers – Consumers 5.78% (46.99quintals)

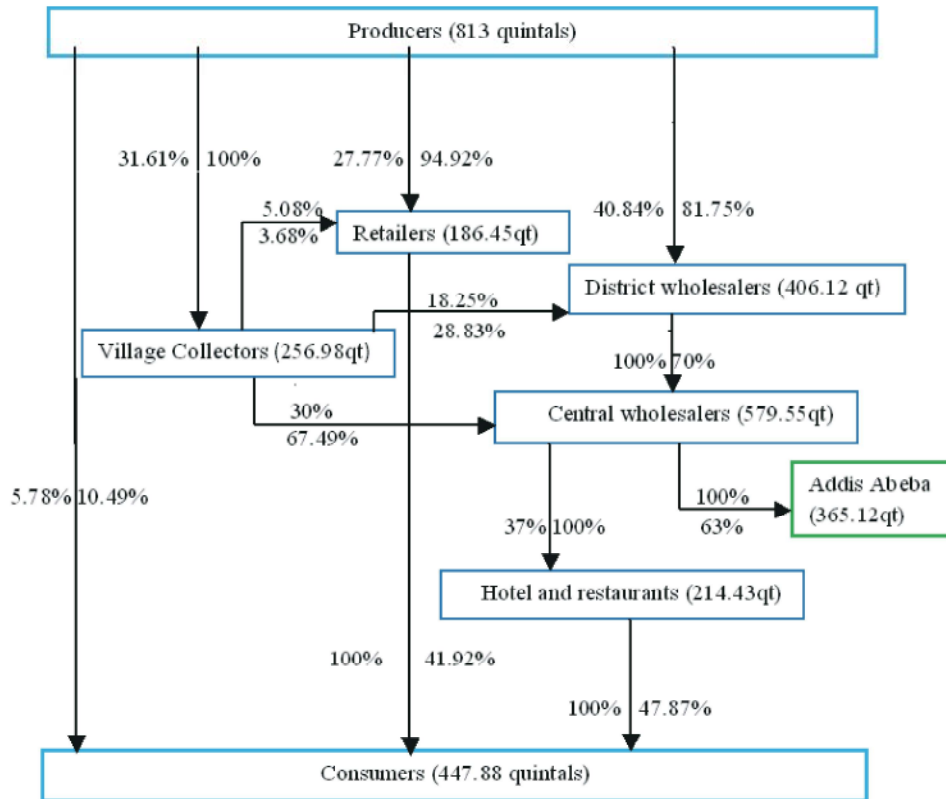
*Channel II:* Producers – Village collectors – Retailers – Consumers 1.16% (9.43 quintals)

*Channel III:* Producers – Village collectors – District wholesalers – Central wholesalers Hotel and restaurants – Consumers 3.37% (27.40 quintals)

*Channel IV:* Producers – Village collector – Central wholesalers – Hotel and restaurants – Consumers 7.89% (64.15 quintals)

*Channel V:* Producers – Retailers – Consumers 21.77% (177 quintals)

*Channel VI:* Producers – District wholesalers – Central wholesalers – Hotel and Restaurants – Consumers 15.11% (122.85 quintals)



Note: Percent in left or below arrow indicate percent share of supplying actors  
 Percent in right or above arrow indicate percent share of receiving actors

Fig. 1: Kochomarketing channels in study area Source: Own sketch from survey result (2018)

Table 7: Kocho average marketing costs for traders (ETB/ quintals)

Marketing cost	Traders			
	Village collectors	Retailers	District wholesalers	Central wholesalers
Transportation cost	15	10	28	30
Storage rent	5	-	6.25	10
Storage keeper cost	5	-	5	5
Storage lost	-	-	52.25	47.25
Cost of market information search	6.6	-	5	5
Packing cost	10	-	12.5	20
Cost packing material	6.8	-	15	22.5
Loading and unloading cost	10	10	22	30
Total cost	58.4	20	146	169.75

Source: Own survey result (2018)

**Kocho Marketing Cost and Margin Analysis:** Due to difficulty in obtaining data on production and marketing costs from *enset* producers, transaction cost was calculated only for traders. The average marketing costs of *kocho* for traders were calculated and presented in Table 7. *Kocho* marketing costs mainly constitutes cost of transportation, storage, storage keeper, storage lost, market information search, packing, loading and

unloading and packing material. The total marketing cost per quintal incurred by *kocho* traders; village collectors, retailers, district wholesalers and central (waliso) wholesalers were 58.4, 20, 146 and 169.75 ETBs respectively.

As mentioned earlier marketing margins is the percentage of price paid by consumers that goes to market actors in the marketing channel can be measured

Table 8: Marketing margins (birr per quintal) of *kocho* market channels

		Kocho marketing channels					
Market actors	Items	I	II	III	IV	V	VI
Producers	Selling price	1080	950.71	950.71	950.71	984	1028
	GMM <sub>p</sub> (%)	100	85.45	65.01	65.01	88.45	70.29
Village collectors	Buying price	-	950.71	950.71	950.71	-	-
	Market cost	-	58.40	58.40	58.40	-	-
	Selling price	-	1033	1056	1090	-	-
	Gross profit	-	23.89	46.89	81.60	-	-
	GMM <sub>vc</sub> (%)	-	7.40	7.19	9.52	-	-
Retailers	Buying price	-	1033	-	-	984	-
	Market cost	-	20	-	-	20	-
	Selling price	-	1112.5	-	-	1112.5	-
	Gross profit	-	59.50	-	-	108.5	-
	GMM <sub>r</sub> (%)	-	7.15	-	-	11.55	-
District Wholesalers	Buying price	-	-	1056	-	-	1028
	Market cost	-	-	146	-	-	146
	Selling price	-	-	1280	-	-	1280
	Gross profit	-	-	78	-	-	106
	GMM <sub>dw</sub> (%)	-	-	15.31	-	-	17.23
Central wholesalers	Buying price	-	-	1280	1090	-	1280
	Market cost	-	-	169.75	169.75	-	169.75
	Selling price	-	-	1462.5	1462.5	-	1462.5
	Gross profit	-	-	12.75	202.75	-	12.75
	GMM <sub>cw</sub> (%)	-	-	12.47	25.47	-	12.47
	TGMM (%)	0	14.55	34.99	34.99	11.55	29.71

Source: Own survey result (2018)

Table 9: *Kocho* marketing constraints

Constraints	Rank count of respondents						Ranking index	Rank
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>		
Low price and its price fluctuation	74	21	15	4	1	1	0.256	1
Lack of transport	8	22	20	23	13	6	0.139	3
Limited <i>kocho</i> market information	3	25	26	25	16	12	0.156	2
Far distance of the central market	3	8	5	7	19	21	0.054	7
Poor <i>kocho</i> market policies	18	7	12	10	24	23	0.120	5
Poor linkage with market chain actors	0	7	11	17	7	4	0.060	6
Lack of storage facilities	14	28	21	19	11	7	0.161	4
Low demand for <i>kocho</i>	0	4	9	16	8	12	0.054	7

Source: Own survey result (2018)

by calculating gross marketing margin for actors in different marketing channels. Based on the reported prices by the different actors Table 18 gave an overview of the marketing margin among different actors in different channels. As shown in Table 18, total gross marketing margin (TGMM) was highest in channel III and IV (34.99%) and lowest in channel V (11.55%). According to survey result producers share (GMM<sub>p</sub>) was highest in channel I (100%) followed by channel V (88.45%) and lowest in channel III and IV (65.01%). Gross marketing margin for traders also calculated and as

indicated in table 18, Village collectors gross market margin (GMM<sub>vc</sub>) is highest in channel IV (9.52%) while retailers (GMM<sub>r</sub>), district wholesalers (GMM<sub>dw</sub>) and central wholesalers (GMM<sub>cw</sub>) traders are highest in channel V, VI and IV and it accounted 11.55%, 17.23% and 25.47% respectively.

The result also indicate that village collectors, retailers, district wholesalers and central wholesalers gain highest gross profit per quintal in channel IV (81.6 ETB), V (108.5 ETB), VI (106 ETB) and IV (202.75 ETB) respectively.



### **Production and Marketing Constraints of Enset Producers**

**Production Constraints:** *Enset* crop has been used for multipurpose as food and cash crop in the study district. But its production has some constraints. According data obtained from group discussion among *enset* producers some problems on this crop lack of *enset* seed variety, *enset* disease what they call in local name *tortorsa*, *bosbosa* and drying and farmers still used cultural *enset* diseases management like applying livestock urine to diseased *enset*.

Similarly, weak support from government regarding *enset* production unlike other agricultural production is another production constraint. The other constraints were lack of *enset* processing technologies and lack of *kocho* storage; still they used traditional tools and local made equipments for *enset* processing without any scientific modification which is leading to loss the products, lack of knowledge inorganic fertilizers for *enset* production, *enset* farmers mostly used farm yard manure what they call *dike* which is not sufficient *enset* production. *Enset* takes long time for maturity period and its production is boring and its working culture gives burden on women.

**Marketing Constraints:** The most important *kocho* marketing constraints raised by *enset* farmers in the study area during the survey period were low price and price fluctuation of *kocho*, lack of transport, limited access to *kocho* market information, far distance of the central market from producers location, poor *kocho* market policies, poor linkage with market chain actors, lack of storage facilities and low demand of *kocho*. Those constraints are analyzed by ranking index. The ranking index shows that low price and price fluctuation of *kocho*, limited access to *kocho* market information and lack of adequate transport service are ranked 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> respectively. Additionally, market constraints raised by traders especially district wholesalers there were informal traders like village collectors who have no trading license to trade *kocho* were influence the work the district wholesalers they purchase from farmers and they sell to central wholesalers by low price since they are not paying taxes.

### **CONCLUSIONS AND RECOMMENDATIONS**

*Enset (Enset ventricosum)* is one of the indigenous root crops widely cultivated in the south and south western parts of Ethiopia. Its product specifically *kocho* has a significant contribution to the livelihood of

producers as source of food and income as well as ensuring of food security in wonchi district. However, the marketing system of this product is not well documented in the district. To meet the objectives of the study primary data were collected from randomly selected 184 *enset* producer's households in the five kebele in 2018/2019 cropping season and from a total of 33 *kocho* traders using pre tested semi-structured questionnaire.

Five actors have been identified from the survey result as actors of *kocho* market chain in wonchi district. These actors were producers, wholesalers, retailers, village collectors and consumers. Accordingly, six *kocho* marketing channels were identified through which *kocho* reaches final consumer during its flows from the producer. Survey result showed that, lack of *enset* seed variety, *enset* disease, weak governmental support, low price and price fluctuation of *kocho*, lack of transport, limited access to *kocho* market information, far distance of the central market from producers location, poor *kocho* market policies, lack of storage facilities and low demand of *kocho* are among major problems of *enset* production and marketing in the study area. The food security sustaining capacity of the crop at family level and guaranty household food shortage protecting capacity of the crop is more than any other crop type in the community. Therefore, government and any responsible body should give attention for the crop just like other annual crops. Still producers in the study district used *enset* local variety. Therefore, WDANRO and concerned bodies should be adopting new *enset* variety through partnership with agricultural research center and higher education institutions which works with *enset*. Responsible bodies should pay an attention in optimizing the benefit share and minimizing unbalanced share of benefit among the market actors.

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