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Profit Margin of Actors Along the Poultry Value Chain in Adwa Wereda, Central Zone of Tigray, Ethiopia

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Abstract
The objective of this study was to calculate the profit margin of actors along the poultry value chain in Adwa wereda, Central Zone of Tigray, Ethiopia. A total of 200 poultry producing sample households from four potential poultry producing Tabias of the wereda were surveyed. Moreover, margin analysis was used to calculate the marketing margin of participants and traders along the poultry value chain in the study area. The major marketing channels and main actors involving in the market were identified. Marketing channels of egg and chicken indicated a shorter path. The major market actors in the survey period were producers, collectors, wholesalers, retailers and consumers. To evaluate poultry market performance cost, profit and marketing margins were calculated for the group of market players in different channels. The producer's share of the total consumer price and the total gross marketing margin were 100% and zero in channel I respectively.
Keywords: Value Chain Mapping, Value Addition, Profit Margin, Econometric

1. Introduction

Livestock production is an integral part of Ethiopia's agricultural sector and plays a vital role in the national economy. This livestock sector has been contributing considerable portion to the economy of the country, and still promising to rally round the economic development of the country. Livestock contributes about 20% of the GDP, supporting the livelihoods of 70% of the population and generating about 11% of annual export earnings (SPS-LMM, 2010). Ethiopia has an estimated 52.13 million cattle, 24.2 million sheep, 22.6 million goats, and 44.89 million poultry birds, which exists in private holdings (CSA, 2012).

Poultry production as part of livestock production could be one alternative income generating mechanism and improving nutritional status for rural households in developing counties (Holloway and Ehui, 2002). The Ethiopian poultry value chain is not well developed and is traditional. Marketing of poultry and poultry products at open markets is common throughout the country and both live birds and eggs are sold on road sides (Demeke, 2007). The value chain is often very short, mainly through a direct interaction of producers and final consumers in live-bird markets, which is described as a simple 'chain'. Poultry production in Adwa wereda offers important opportunity to increase household income, especially for women and landless youth. Efforts to promote market oriented poultry production in the study area have not succeeded mainly due to limited scale of production, severe feed supply, poor genetic potential and poor veterinary services (ILRI, 2013).

There is also low market access for the produced agricultural products especially in the remote areas of the region. Therefore, poultry productivity and marketing problems can be solved by creating functional value chain in the study area.

2. Materials and Methods

2.1 Description of the Study Area

Adwa wereda is located between 14^{o} 19' 25" North latitude & 39^{o} 4' 27" East longitude in central zone of Tigray. It is found about 925 km North of Addis Ababa and 235 km west of Mekelle. The distance of the study Tabias (Endamariam Shewito, Wedikeshi, Betehanes and Debregenet) from Adwa Town are 14 km, 6 km, 10 km and 18 km respectively.

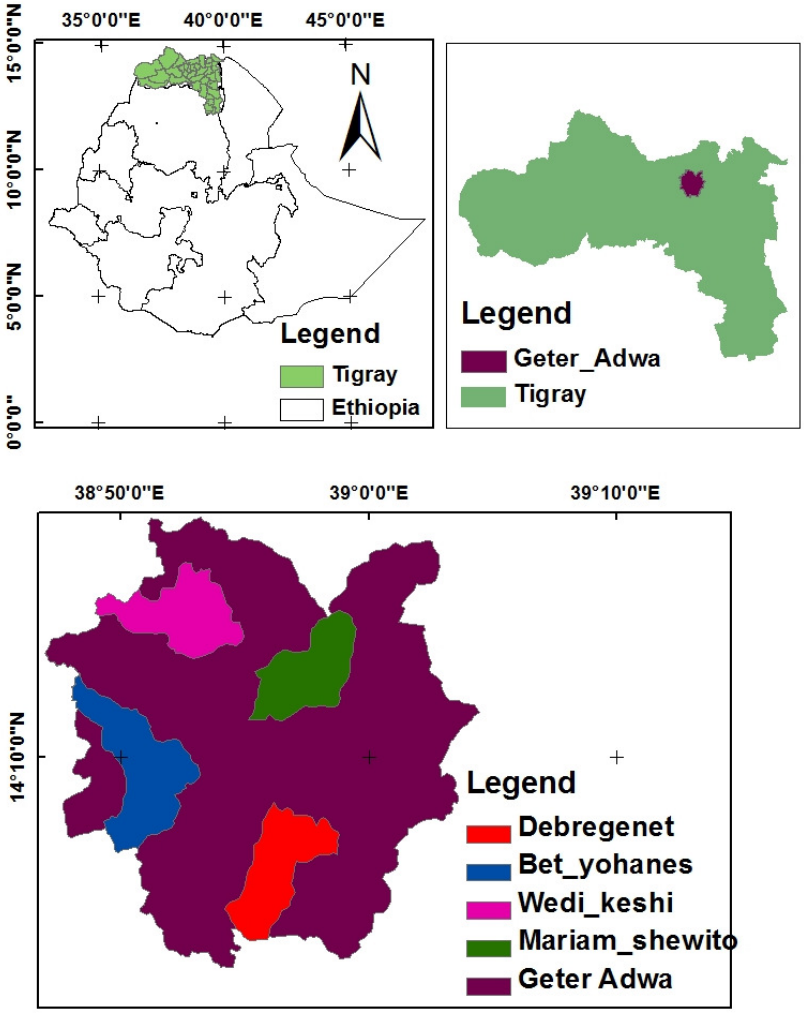

Figure 1: Map of the study area

Altitude, Temperature and Rainfall

The altitude of Adwa wereda ranges from 1805-2258 masl. The temperature of the area ranges from 18-28°c and mean temperature of 23°c. The mean annual rainfall of the area ranges from 600-850mm with mean of 725mm (ILRI, 2013).

Human Population

The total population of the wereda was 89,052. Of these population, 44,391(49.8%) and 44,661(50.2%) represented males and females respectively. this number was obtained from agricultural extension of the wereda. Tigrigna is the mother tongue for the population. The cultural food commonly used in the wereda is Injera with dero wet, shiro and keywet.

Livestock Production

Dairy, sheep, goats, poultry and honey bees productions are practiced in the wereda. Most of the production system is traditional and local poultry were dominant in the wereda (ILRI, 2013). Table 1 shows the types of livestock population in the study wereda.

Table 9: Livestock population

	Number		
Type	Local	Improved	Total
Cattle	57,216	173	57,389
Sheep	46,573	-	46,573
Goats	85,326	-	85,326
Poultry	90,613 (81%)	21602 (19%)	112,215
Honey bee colonies	11,372	4,268	15,640

Source: ILRI, 2013.

Soil type Crop Production

The soil types of the study area are Lithic Leptosols, EutricLeptosols and Eutric Cambisols (ILRI, 2013). Mixed crop-livestock farming system is common both in the mid and lowlands of the wereda. Maize, wheat, teff, sorghum,

barely, and finger millet are commonly growing crops.

2.2 Research Design

Both quantitative and qualitative research data were collected and a survey type study was conducted in the study area. Descriptive type of research was adopted in this study. Poultry producers were taken as sampling frame purposively and then simple random sampling method was used to take representative respondents. A cross sectional research design was employed because; the study was conducted only in a time manner on small portion of sampled population.

2.3 Data type and source

Both qualitative and quantitative types of data were collected from the study area. In order to get the overall picture of poultry value chain in the study area, the study used both primary and secondary sources of data. The primary data on the poultry value chain functions were collected from poultry value chain actors through interview and focus group discussion.

2.4 Method of Sampling and Sample Size

With regard to sample size, it is believed that more sample households could have better representation of the target population. However, to make the research more manageable (both in time and resources) sample households were selected from the selected sample Tabias. The total numbers of Tabias found in the study area were 18 from which four Tabias were selected purposively based on information obtained from the wereda's bureau of Agriculture and Rural Development Office, accessibility to undertake the research, poultry potential and interest of LIVES project. Households that have chicken were the sampling frame for the study. Based on this, 6,066 households constituted the sampling frame. Totally, 200 respondents were selected according to the sample size determination table at alpha 0.05 (Bartlett *et al*., 2001). Then, respondents were taken using sample proportionate to size. The respondents were stratified in to female and male household heads. Finally, the households were listed with the assistance of DAs and then simple random sampling method was used to select respondents from each selected Tabias. 142 male and 58 female headed households were selected randomly from the listed sampling frame.

Table 10: Number of poultry producer households and sample taken from each Tabia

Name of Tabias	Poultry producers*			Sampled HH		
	Male	Female	Total	Males	Females	Total Sampled
Endamariam Shewito	1161	503	1664	38	17	55
Betyehanes	936	268	1204	31	9	40
Wediqeshi	1025	446	1471	33	15	48
Debregenet	1204	523	1727	40	17	57
Total	4326	1740	6066	142	58	200

*Source: Office of agriculture and rural development and Tabias administrative data, 2015.

Sample respondents were also selected from the other value chain actors on the basis of their size and availability and were interviewed based on their respective functions in the chain. Therefore, 10 collectors, 2 wholesalers, 17 retailers, 12 processers and 52 consumers were selected in the study area and Adwa town using random and purposive sampling techniques. All licensed (8) and 21 non licensed traders were selected using purposive and simple random sampling techniques respectively. Processors and consumers were also selected randomly.

2.5 Method of Data Collection

Enumerators were recruited and trained for data collection. The questionnaire was translated in to Tigrigna and backward to English languages. Then developed questionnaire was pre-tested to evaluate its design and time taken for the interview. Hence, appropriate modifications were made on the questionnaire. During data collection, the trained interviewers collected enough and accurate information or data from poultry producers in each selected Tabias to achieve the objectives of the study and avoid potential bias from the sampled households in responding to questions. Data were collected under continuous supervision of the researcher. The filled-in interview schedule was thoroughly checked for completeness and consistency. Similarly, informal surveys are employed to study the marketing systems of poultry and eggs to obtain additional supporting information for the study. Data was also collected from traders and processors through administering a structured and semi-structured questionnaire. Key informant interview was utilized to get the relevant data that shows current poultry value chain in the study area. The key informants' interview was including: extension workers, input and output marketing experts, collectors, retailers, processors, end users, NGOs workers in the study area and poultry experts from BoARD.

2.5.1 Focus group discussion

A checklist was developed to guide the sequence of information to be collected from the focus group discussions.

Members of the focus group discussion were selected from different groups such as elders, religion leader, Tabia administrator, Tabia's women affairs, model farmers and youth associations so as to collect accurate information or data about poultry value chain functions and the current constraints on value chain of poultry in the study area. Discussions were conducted in each selected Tabias with the size of 8 persons per selected Tabia. The focus group discussion was facilitated and monitored by the researcher and every member of the group was given equal chance to express his/her ideas. Information concerning poultry value chain functions, services, constraints and opportunities were collected from the focus group discussions using checklist.

2.6 Data Processing and Analysis

The collected data were coded and entered in to Microsoft excel to be ready for analysis. The data collected from respondents were analyzed by using SPSS 16 and STATA 10 software packages. Poultry marketing margins were calculated using marketing margin formulas.

2.6.1 Marketing margin

These include the total gross marketing margin, producer's gross marketing margin, and net marketing margin. These margins can be calculated by deducting the selling price and marketing cost from the purchase price and then dividing by the price paid by the end users and the proportion and distribution of these values among marketing actors were used to analyze the performance of poultry marketing system (Gebregzabher, 2010). Using Income Statement, the cost and revenue were calculated before the ratio and margins estimation. The producers' share is the commonly employed ratio calculated mathematically as, the ratio of producers' price (ex-vessel) to consumers' price (retail). Mathematically, producers' share can be expressed as:

$$PS = \frac{P_x}{P_r} = 1 - \frac{MM}{P_r} \quad \text{... (2)}$$

Where: PS = Producers' share

P_x = Producers price of poultry

P_r = Retail price of poultry products which is consumer price of poultry

MM = marketing margin

The above equation tells us that a higher marketing margin diminishes producers' share and vice versa. It also provides an indication of welfare distribution among production and marketing agents. Total gross marketing margin (TGMM) is the final price of the produce paid by the end consumer minus farmers' price divided by consumers' price and expressed as a percentage (Mendoza, 1995).

$$TGMM = \frac{Consumer\ price - Farmers'\ price}{Consumer\ price} X100 \qquad (1)$$

Where, TGMM = Total gross marketing margin

$$GMMp = \frac{price\ paid\ by\ the\ consumer - marketing\ gross\ margin}{Price\ paid\ by\ the\ consumer} \times 100 \qquad (2)$$

Where, GMMp = the producer's marketing margins (producers share) from consumer price.

$$NMM = \frac{Gross\ Margin - Marketing\ Cost}{Price\ paid\ by\ endusers(Consumers\ price)} \qquad (3)$$

Where, NMM = Net marketing margin

Higher NMM or profit of the marketing intermediaries reflects reduced downward and unfair income distribution, which depresses market participation of smallholders. The consumer price share/portion of market intermediaries is calculated as:-

$$MM = \frac{Selling\ Price - Buying\ Price}{FCP} \times 100 \qquad (4)$$

3. Result and Discussion

3.1 Analysis of Poultry Market in the Study Area

Marketing is the interaction between different traders and producers in the market. Poultry and eggs were marketed by market actors such as producers, collectors, wholesalers and, retailers in the study area. All poultry producers found in the study area were not participant in the poultry supply to the market. Most of the farmers (64%) supplied chicken and eggs to the market. The poultry marketing system found in the study area was not organized and traditionally implemented. Poultry products are often sold into a crowded and competitive market. A number of farmers are largely isolated from the consumer, and from the demands and preferences of consumers. Chicken and egg are marketed in the open market, on the way and entrance of the town. According to the focus group discussion, producers in the study area sell their chicken and eggs without gaining the correct market prices

information. They replied that collectors and retailers cheat them on chicken and eggs price before they enter to the main market. All of the producers also replied that, poultry marketing was very weak and no market actor thought for mutual benefit. This marketing system indicated that there was no strong relationship among the poultry market actors.

3.1.1 Poultry marketing channels

Marketing of poultry generally starts with the collection of poultry from production site and moving on to the wereda towns (Adwa towns). In the marketing chain, the product passes successively through a number of market actors (representing the links in the market chain) before it reaches the end user. Poultry produced in the study area was channeled to the end users or consumers (Adwa towns) market. The marketing channel was prepared based on the information gathered from traders in different locations. The marketing channel of poultry value chain was conducted by the different value chain actors.

Poultry marketing channels in the study area:

Channel I: Producer ➔ Consumers
Channel II: Producer ➔ Retailer ➔Consumer
Channel III: Producer ➔Collector ➔Consumer
Channel IV: Producer ➔Collector➔Retailer ➔Consumer

Egg Marketing Channels:

Channel I: Producer ➔ Consumers
Channel II: Producer ➔Retailer ➔Consumer
Channel III: Producer ➔Wholesaler ➔Consumer
Channel IV: Producer ➔Collector➔Consumer
Channel V: Producer ➔Wholesaler ➔ Retailer ➔Consumer
Channel VI: Producer ➔ Collector ➔ retailer➔ consumer
Channel VII: Producer ➔ Collector ➔wholesaler ➔consumer
Channel VIII: Producer ➔Collector➔Wholesaler➔ Retailer ➔Consumer

As can be understood from figure 8, the main receivers of chicken from the farmers were consumers, retailers and collectors with an estimated percentage of 85%, 8.7% and 6.3% respectively.

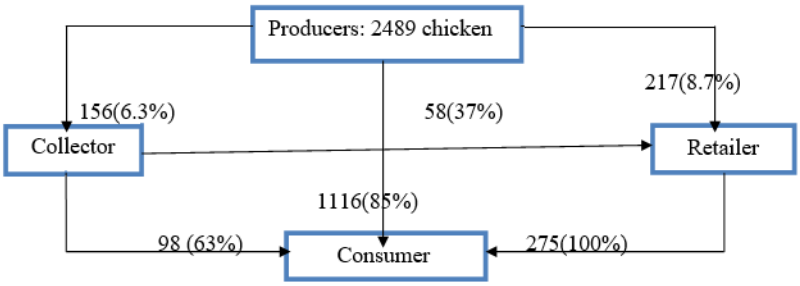

Figure 2: Volume of chicken flow
Source: Survey result, 2015.

In case of egg marketing, consumers, retailers, collectors and wholesalers have received 57%, 16.3%, 10.7% and 10% directly from produces, respectively. This result indicted that producers preferred to sell their product directly to consumers (Fig.3).

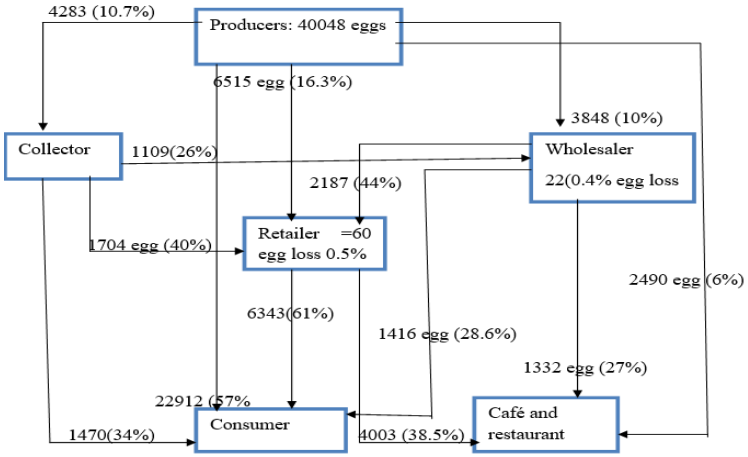

Figure 3: Volume of egg flow
Source: Survey result, 2015.

Prices of chicken and eggs:

The price of chicken in the study area varied within the different channels. The maximum and minimum selling prices of chicken were 130 and 80 Birr respectively with an average price of 109.40 Birr per chicken. The price of eggs in the study area also varied with the size of eggs and marketing channels. Its price ranged from 1.75 to 3 Birr with an average of 2.34 Birr.

3.1.2 Economic analysis along the poultry value chain

The performance of poultry market was evaluated by considering associated costs, returns and marketing margins. The marketing costs of chicken and egg trading for varies marketing stages is calculated and shown in Table 3 and 4. In chicken trading, production and marketing costs such as layer cost, feed cost, water trough cost, medication cost, transport cost, labor cost and house rent costs were calculated including opportunity cost in each producer and trader. Layer cost, medication cost, transport cost, labor cost, tax, house rent and others (telephone and losses) were calculated in egg trading. Price of transporting equipment such as basket was added to transport cost of egg trading. Table 3 shows marketing costs and profit margins of chicken in the four channels for each group of market player. Channel I represents direct selling from producers to consumers. Channel II represents selling of chicken from producer to consumer through retailers. Channel III represents selling of chicken from producer to consumer through collectors. The last channel, channel IV represents selling of chicken from producers to consumers through collectors and retailers.

Table 3: Estimated cost and marketing margin of poultry market in channel

Channel	No. 1	No. 2		No. 3		No.4		
	Actor	Actors		Actors		Actors		
Cost/return (per unit of product)	Producer	Producer	Retailer	Producer	Collector	Producer	Collector	Retailer
Material cost								
Hen/depre. cost	22	22	104	22	84	22	84	109
Feed cost	14.68	14.68	1.25	14.68	0.69	14.68	0.69	1.25
Water trough cost	0.3	0.3		0.3		0.3		
Housing cost	6.5	6.5	-	6.5	-	6.5	-	-
Medication	0.18	0.18	-	0.18	-	0.18	-	-
Labor cost	9.34	9.34	2.37	9.34	2.2	9.34	2.2	2.37
Marketing cost								
Transport cost	4.56	2.28	1.52	-	2.2	-	2.2	0.5
House rent	-	-	0.52		-	-	-	0.52
Total operating cost	35.56	33.28	5.66	31	5.10	31	5.10	4.64
Total cost	57.56	55.28	109.66	53	89.10	53	89.10	113.64
Selling price	109	104	119.75	84	110	84	109	119.75
Gross profit	87	82	15.75	62	26	62	25	10.75
Value added/Margin	51.44	48.72	10.10	31	20.9	31	19.9	6.11
NMM (%)	47.2%	40.68%	8.43%	26.2%	19%	25.90%	16.6%	5.10%

Source: Survey result, 2015.

Producers incur Birr 57.56/chicken as total cost and sold it with Birr 109/chicken to consumers for channel I, 104 for channel II and 84 both for channel III and IV respectively. As shown in table 3, the cost of layer was about 22 Birr in all channels. As compared with other actors in the wereda's poultry value chain, the cost of poultry producers' is much higher and the major share of the operating cost goes to feed cost (41.3%) followed by labor cost (26.3%) and housing cost was the third higher operating cost (18.3%) in channel I. The total cost for channel II was Birr 55.28 and Birr 53 both for channels III and IV. As shown in table 3, 100% and 82.8% of the margins were taken by the producer in channels I and II respectively. This result indicated that as the channel becomes short the profit share of producers increases.

As shown in table 3, the highest contribution of marketing costs in collectors was for labor and transport cost (43.2%) followed by feed cost (13.6). The collector enjoyed 40.3% of the margin in channel III and 34.9% in channel IV. The marketing profit in channels III and IV were Birr 20.9 and 19.9/chicken respectively. The reason to differ the amount of profit was due to the length of the channel. Collectors who have sold poultry directly to the consumers were more profitable than those who sold poultry to the consumers through retailers. With regard to the cost and profitability analysis of the sample poultry retailer's in the wereda, as Table 3 clearly presents, they were found to be profitable. The largest contribution of marketing costs in retailer was for labor (42%) followed by transport cost (26.9% in channel II and labor cost contributed about 51% of the marketing cost followed by feed cost (27%) in channel IV. Retailer took the least margins (17.2% and 10.7% in channels II and IV respectively). This result indicated that a retailer can obtain a profit of Birr 10.10 in channel II and Birr 6.11 per chicken in

channel IV which was less than the profit of collectors.

Table 4 represents the market share of actors in poultry marketing in the four channels. The producer's share of the total consumer price was 100% in channel I, 86.8% in channel II, and 76.4% and 70.1% in channels III and IV respectively. This implies that 13.2% of the total consumer price in channel II, 23.6% of the total consumer price in channel III and 29.9% of the total consumer price in channel IV resulted from marketing activities by traders. The collector's share of the total consumer price was 23.6% in channel III and 20.9% in channel IV. The retailer's share of the total consumer price was 13.2% in channel II and 9% in channel IV. As indicated in Table 4 marketing costs, gross profit, marketing margins of chicken traders as a proportion to final consumer price and total channel marketing margin were calculated.

Table 4: Market share of actors in poultry marketing through channels I, II, III and IV

Channel	No. 1	No. 2		No. 3		No.4		
	Actor	Actors		Actors		Actors		
Cost/return (per unit of product)	Producer	Producer	Retailer	Producer	Collector	Producer	Collector	Retailer
Hen/Chicken cost	22	22	104	22	84	22	84	109
Operating cost	35.56	33.28	5.66	31	5.10	31	5.10	4.64
Total cost	57.56	55.28	109.66	53	89.10	53	89.10	113.64
Selling price	109	104	119.75	84	110	84	109	119.75
Gross profit	87	82	15.75	62	26	62	25	10.75
Net profit	51.44	48.72	10.10	31	20.9	31	19.9	6.11
GMMpcr (%)	100	86.8	13.2	76.4	23.6	70.1	20.9	9
TGMM (%)	0	13.2	-	23.6	-	29.9	-	-
NMM (%)	47.2%	40.68%	8.43%	26.2%	19%	25.90%	16.6%	5.10%
FCP	109	-	119.75	-	110	-	-	119.75

Source: Survey result, 2015.

TGMM = Total gross marketing margin

GMMpcr = market shares of producer, collector and retailer respectively.

NMM =Net marketing margin

FCP = Final consumer price

3.1.3 Marketing costs and profitability of egg trading

Table 5 represents marketing costs and profit margins of egg in the eight channels for each group of market players. Channel I represents direct selling from producers to consumers. Channel II represents selling of eggs from producer to consumer through retailer. Channel III represents selling of eggs from producers to consumers through wholesaler. Channel IV represents selling of eggs from producers to consumers through collector. Channel V represents selling of eggs from producers to consumers through wholesaler and retailer. Channel VI represents selling of eggs from producers to consumers through collector and retailer. Channel VII represents selling of eggs from producers to consumers through collector wholesaler the final channel, channel VIII represents selling of eggs from producers to consumers through collectors, wholesalers and retailers.

Table 5: Estimated cost and marketing margin of egg market in each channel

Channel	No. 1	No. 2		No. 3		No.4		No. 5			No. 6			No.7			No. 8			
Cost/return (per unit of product)	Actor	Actors		Actors		Actors		Actors			Actors			Actors			Actors			
	Producer	Producer	Retailer	Producer	Wholesaler	Producer	Collector	Producer	Wholesaler	Retailer	Producer	Collector	Retailer	Producer	Collector	Wholesaler	Producer	Collector	Wholesaler	Retailer
Purchase price			2.12		2		1.98		2	2.35		1.98	2.37		1.98	2.20		1.98	2.20	2.35
Material cost																				
Hen cost	0.24	0.24		0.24		0.24		0.24			0.24			0.24			0.24			
Feed cost	0.15	0.15		0.15		0.15		0.15			0.15			0.15			0.15			
Housing	0.06	0.06		0.06		0.06		0.06			0.06			0.06			0.06			
W.trough cost	0.003	0.003		0.003		0.003		0.003			0.003			0.003			0.003			
Medication	0.002	0.002		0.002		0.002		0.002			0.002			0.002			0.002			
Market. cost																				
Transport cost	0.12	0.32	0.01	0.32	0.01	-	0.1	0.32	0.01	0.01	-	0.1	0.01	-	0.1	0.01	-	0.1	0.01	0.01
Labor cost	0.2	0.1	0.05	0.1	0.04	-	0.06	0.1	0.04	0.05	-	0.06	0.05	-	0.06	0.04	-	0.06	0.02	0.05
House rent	-	-	0.02	-	0.02	-	-	-	0.02	0.02	-	-	0.02	-	-	0.02	-	-	0.04	0.02
Tax	-	-	0.01	-	0.02	-	-	-	0.02	0.01	-	-	0.01	-	-	0.02	-	-	0.02	0.01
Others	-	-	0.001	-	0.01	-	0.01	-	0.01	0.001	-	0.01	0.001	-	0.01	0.01	-	0.01	0.01	0.001
Total cost	0.78	0.88	2.21	0.88	2.10	0.46	2.15	0.88	2.10	2.44	0.46	2.15	2.46	0.46	2.15	2.30	0.46	2.15	2.30	2.44
Selling price	2.17	2.12	2.52	2	2.52	1.98	2.46	2	2.35	2.52	1.98	2.37	2.52	1.98	2.20	2.52	1.98	2.20	2.35	2.52
Margin	1.39	1.24	0.31	1.12	0.42	1.52	0.31	1.12	0.25	0.08	1.52	0.22	0.06	1.52	0.05	0.22	1.52	0.05	0.05	0.08
NMM	64	58.5	12.3	56	16.7	76.8	12.6	56	10.6	3.2	76.8	9.3	3.2	76.8	2.3	8.7	76.8	2.3	2.12	3.2

Source: Survey result, 2015.

Producers incur Birr 0.78/egg as operating cost and sold it with Birr 2.17/egg to consumers for channel I, 2.12 to retailers for channel II, 2 to wholesaler for channels III and V, 1.98 to collector for channels IV, VI, VII and VIII. As shown in table 5 layer cost was the largest operating cost representing 30.8% followed by labor cost (25.6%) and feed cost contributed about 19.2% of the total operating cost in channel I. Producers were more profitable in channels IV, VI, VII and VIII because they did not incurred marketing costs to sell their eggs to the collector.

As shown in table 5, the highest contribution of marketing costs in collectors was for transport cost (58.8%) followed by labor cost (35.3%). About 5.9% of the marketing was for other costs such as telephone and egg losses. The marketing profit for collectors in channels IV and VI were Birr 0.31 and 0.22 respectively. The marketing profit of collectors was similar both in channels VII and VIII. The reason to differ the amount of profit was due to the length of the channel. Collectors who have sold eggs directly to the consumers were more profitable than those

who sold eggs to the consumers through wholesalers and retailers. This result indicated that as the number of traders increase in one channel collector's share of the total consumer price decreases.

With regard to the cost and profitability analysis of the sample egg wholesalers in the wereda, as table 5 clearly presents, they were found to be profitable. The largest contribution of marketing costs in wholesalers was for labor (40%) followed by both house rent and tax (20%). This result indicated that a wholesaler can obtain a profit of Birr 0.42 per egg in channel III, Birr 0.25 per egg in channel V, Birr 0.22 per egg in channel VII and Birr 0.05 per egg in channel VIII. Wholesalers who have bought egg directly from producers and sold directly to consumers were more profitable.

As shown in table 5 the largest contribution of marketing costs in retailers was for labor (55.6%) followed by house rent (22.2%) A retailer has earned a profit of Birr 0.30 per egg in channel II, Birr 0.08 per egg in channels V and VIII and Birr 0.06 per egg in channel VI. Retailers who have bought egg directly from producers and sold directly to consumers were more profitable. This result indicated that retailers who have bought egg directly from producers and sold to consumers were more profitable. Generally, as marketing actors increase in a channel a profit share of traders from the consumer price decreases.

Table 6 represents the market share of actors in egg marketing in the eight channels. The producer's share of the total consumer price was 100% in channel I, 84.1% in channel II, 79.4% in channels III and V, 80.5% in channel IV and 78.6% for channels VI, VII and VIII. This implies that the 15.9% of the total consumer price in channel II, 20.6% of the total consumer price in channels III and V, 19.5% of the total consumer price in channel IV and 21.4% of the total consumer price in channels VI, VII and VIII resulted from marketing activities by traders. In channel IV, the collector's market margin constituted 19.5% of the total consumer price. In addition to that 15.5% of the total consumer price in channel VI and 8.5% of the total consumer price both in channels VII and VIII resulted by collector. The wholesaler's share of the total consumer price was 20.6% in channel III, 13.9% in channel V, 12.7% in channel VII and 6% in channel VIII. The retailer's share of the total consumer price also constituted 15.9% in channel II, 6.7% in channels V and VIII and 5.9% in channel VI.

Table 6: Market share of actors in different egg marketing channels

Market actors	Cost/profit items	Channels							
		I	II	III	IV	V	VI	VII	VIII
Producers	Hen cost	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
	Operating cost	0.54	0.64	0.64	0.22	0.64	0.22	0.22	0.22
	Total cost	0.78	0.88	0.88	0.46	0.88	0.46	0.46	0.46
	Selling price	2.17	2.12	2	1.98	2	1.98	1.98	1.98
	Net profit (ETB)	1.39	1.24	1.12	1.52	1.12	1.52	1.52	1.52
	GMMp (%)	100	84.1	79.4	80.5	79.4	78.6	78.6	78.6
	TGMM (%)	0	15.9	20.6	19.5	20.6	21.4	21.4	21.4
Collector	Purchasing price	-	-	-	1.98	-	1.98	1.98	1.98
	Operating cost				0.17		0.17	0.17	0.17
	Total cost				2.15		2.15	2.15	2.15
	Selling price	-	-	-	2.46	-	2.37	2.20	2.20
	Net profit(ETB)	-	-	-	0.31	-	0.22	0.05	0.05
	GMMcl (%)	-	-	-	19.5	-	15.5	8.7	8.7
Wholesaler	Purchasing price	-	-	2	-	2	-	2.2	2.2
	Operating cost	-		0.10	-	0.10	-	0.10	0.10
	Total cost			2.10		2.10		2.30	2.30
	Selling price	-	-	2.52	-	2.35	-	2.52	2.35
	Net profit	-		0.42	-	0.25	-	0.22	0.05
	GMMw (%)	-	-	20.6	-	13.9	-	12.7	6
Retailer	Purchasing price		2.12		-	2.35	2.37		2.35
	Operating cost		0.09		-	0.09	0.09		0.09
	Total cost		2.21			2.44	2.46		2.44
	Selling price		2.52		-	2.52	2.52		2.52
	Net profit		0.31		-	0.08	0.06		0.08
	GMMr (%)		15.9		-	6.7	5.9		6.7
FCP (Final Consumer Price)		2.17	2.52	2.52	2.46	2.52	2.52	2.52	2.52

Source: Survey result, 2015.

Conclusion

The study was aimed at value chain analysis of poultry in Adwa Wereda, Central Zone of Tigray. The specific objectives of the study include calculating profit margin of actors along the poultry value chain in the study area.

The dominant channel in the study area connects suppliers and consumers directly. Large volume of chicken and eggs were supplied directly from producers to consumers. This situation makes the channels very short. Collectors who have sold poultry directly to the consumers were more profitable than those who sold poultry and eggs to the consumers through retailers. This is due to the reason that they bought chicken and eggs in cheap price from farmers and sold it directly to the consumers. Market actors in chicken marketing channel were producers, collectors, retailers and consumers. While the market actor in egg marketing channel were producers, collectors, wholesalers, retailers and consumers. Profit margin of market actors at different channels was calculated and farmer who sold their product directly to consumers got higher market share of the consumer price. As the length of the channel increases, profit share of market actors decreases and other members get more advantage than poultry producers.

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