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Research Paper

Value Chain Analysis of Coffee Product in The Case of Sidama Region, Ethiopia

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ABSTRACT
The aim of the study was value chain analysis of coffee product in the study area. Cross-sectional data was collected from 204 randomly selected coffee producers from four Woredas of Sidama Zone. Structured questionnaire prepared for sample households were filled by the help of selected and well-trained enumerators. The study used both Primary and Secondary data to analyze market profit margins in each stage, to assess coffee outlets and compare whether cooperative members were more benefited than non-members by using descriptive analysis method. Descriptive analysis result showed that members of cooperatives had more benefit rather than non-cooperative members. Regarding challenges of outlet, supplied coffee to national market was not adequate compared with collected coffee by both cooperatives and non-cooperatives primary industries of study area. Additionally, comparisons of profit margin shares among value chain actors, exporters had benefited more than both producers and industrialists. Most of respondents, (around 48.53 percent producers) face unnecessary interventions of brokers into market. This reduces their ability to compete with well-established and commercial producers in more-favored areas with better market infrastructure to harness available and emerging market opportunities. Based on the main findings the study recommended government to aware coffee producers to choose good market outlets and to increase the access of cooperatives and the improvement of the infrastructure to enhance coffee marketing value chain.

Keywords: *Value Chain, Brokers, Cooperatives, ECX, Marketing outlet and private Industries*

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I. INTRODUCTION

1.1. Background of Study

Ethiopia, the birth place of coffee, stands seventh in the World and first in Africa in coffee production. By 2011/12, the country had produced approximately 500,000 metric tons of coffee. Although she has been taking part in exporting coffee to the World market, half of the total production is supposed consumed locally. Ethiopia, like other African countries, export agricultural commodity (ICO, 2015).

Coffee is the world's favorite beverage and most traded commodity (ICC, 2015). It is the primary source of income for more than 10 million households in coffee-growing African countries. Coffee also serves as an important source of export revenues for coffee producing countries. Ethiopia is known for the origin and wide diversity of Arabica coffee and has enormous, unexplored potential to produce top specialty coffees (Anwar, 2010). Moreover, the coffee subsector of Ethiopia has been and continues to be the base for the country's agricultural and economic development. Similarly, coffee in Ethiopia accounts for more than 25% of GNP, 40% of the total export earning, 60% of agricultural export, 10% of the total government revenue and about 25% of the total population of the country are dependent on production, processing, distribution, and export of coffee (Delelegne *et al*., 2016).

However, around 95% of the country's total production comes from small holder farmers. Only 5 % percent of coffee production is grown on modern plantations, which are owned by private investors or by the government (MOFED, 2010). Even though Ethiopia has a good potential to increase coffee production and productivity as it is endowed with suitable elevation, temperature, soil fertility and sufficient rainfall in coffee growing belts of the country (ICO, 2015).

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Smallholder coffee farmers has been confronted with various problems for centuries, both internal (weak markets, insufficient infrastructure, insufficient research and extension, shortage of farmland) and external problems like global coffee price decline, increasing food and oil prices (Samuel and Eva, 2008).

Additionally, market volatility and declining terms of trade, dynamic poverty; and environmental degradation are threats to the sustainability of coffee sector. Consequently, Emphasis given to efficient management of the markets and efficient management of supply chains are the sustainable remedy for the sustainability of the sector. The natural interdependence between market and supply chain efficiency suggests that systemic treatment of both aspects at a policy level is imperative to the effective implementation of sustainability in the sector (Potts, 2006).

Though efficient agricultural marketing is a tool to improve farmers income and livelihood, farmers faced barriers such as insufficient and inadequate physical infrastructure, lack of basic education and marketing knowledge, lack of organizational support and institutional barriers in marketing (Kherallah and Kirsten, 2001).

Chain actors are those involved in producing, processing, trading or consuming a particular product. They include direct actors which are commercially involved in the chain (producers, traders, retailers, consumers) and indirect actors which provide financial or non-financial support services, such as banks and credit agencies, business service providers, government, and researchers (IIRR, 2006). Thus, this study was intended to identify value chain actors, outlets, challenges and to examine market margins at different stages.

1.2. Statement of the Problem

Ethiopia produces more than 30% of the total coffee production in Sub-Saharan Africa and it also consumes nearly 50% of the total production in a country and additionally generated 40 % of the total export revenue (NBE, 2014, Delelegne *et al*., 2016). Due to these reasons, the coffee sub sector has enjoyed higher attention under the current agricultural commercialization strategy. The production of high value crops like coffee is one of the distinctive features of the new strategic direction being pursued by the Government of Ethiopia and many development partners. This is also part of the multi-faceted efforts geared towards transforming the country's age old subsistence agricultural farming system into commercial oriented and export led production (MoFED, 2012). Though several efforts have been exerted to exploit the most possible reward from the coffee production and export, still several complex challenges are observed cracking the road to higher benefit share. Among the key challenges facing the whole coffee sub sector in Ethiopia, the volatile nature of global coffee price is critical one. This has been a real source of vulnerability for smallholder producers. Countries like Ethiopia have a very low market share, often below 5% in the international coffee trade. Due to this, Ethiopian smallholder coffee farmers receive only a fraction of the retail price and continued to engage in subsistence farming (ICC, 2015).

Coffee production in Ethiopia is inhibited by a lot of shortcomings such as lack of competitiveness, poor market access, less infrastructure, inadequate access to services, little value addition, and inadequate modern technology system and applied research (Jose, 2012). Additionally, the constraints of coffee subsector in Ethiopia are limited in extension and research services (World Bank, 2015).

This is a crucial constraint that exacerbates the influence of risks such as insect pest and diseases epidemic. Coffee plants exposed severely to vulnerable that outbreak by pests and diseases when there is less extension service that outcome from poor agricultural practices. According to Anwar, (2010) coffee quality is a complex characteristic which depends on a series of factors such as the species or variety (genetic factors), environmental conditions (ecological factors), agronomical practices (cultivation factors), processing systems (post-harvest factors), storage conditions, industrial processing, grading, packing, transporting, all contribute either exaltation or deterioration of coffee.

The main identified problems are inadequate improved seedlings varieties, problem of pests and diseases, poor management practices like pruning, stumping weeding, fertilizing, moisture deficit from climate change, poor storage and processing facilities for value addition and lack of infrastructure effects on time delivery of the products are the core causes for low coffee quality production that outcome for low living standards of the coffee dependent society (Jose, 2012). One of the key constraints in coffee production include low levels of productivity, poor general agronomic practices example failure to prune and or stump old coffee bushes; poor crop protection practices that has result into a high disease and pest burden example the coffee wilt disease, Fluctuating prices which discourage farmers from growing more coffee(Anwar, 2010). Other constraints at the farmer level are limited access to and high cost of finance, progressively smaller average farm sizes, Low levels of farmer organization, Low Yields at farm level, Ageing trees (and farmers), high cost of farm inputs and very limited usage of inputs, and very limited access to on farm extension services. Additionally, in marketing channels or value chains there are a lot of problems that related with illegal channels (Samuel and Eva, 2008). Therefore, this study investigated value chain market of coffee production in the study area.

1.3. Objectives of Study

The general objective of this study was to analyze coffee product value chain in the study area.

Specific Objectives

1) To identify coffee value chain outlets in the study area
2) To compare coffee producers' benefits of cooperative and non-cooperative members
3) To examine marketing margins among value chain actors
4) To assess challenges related with value chain of coffee in each stage

II. Conceptual Logical framework

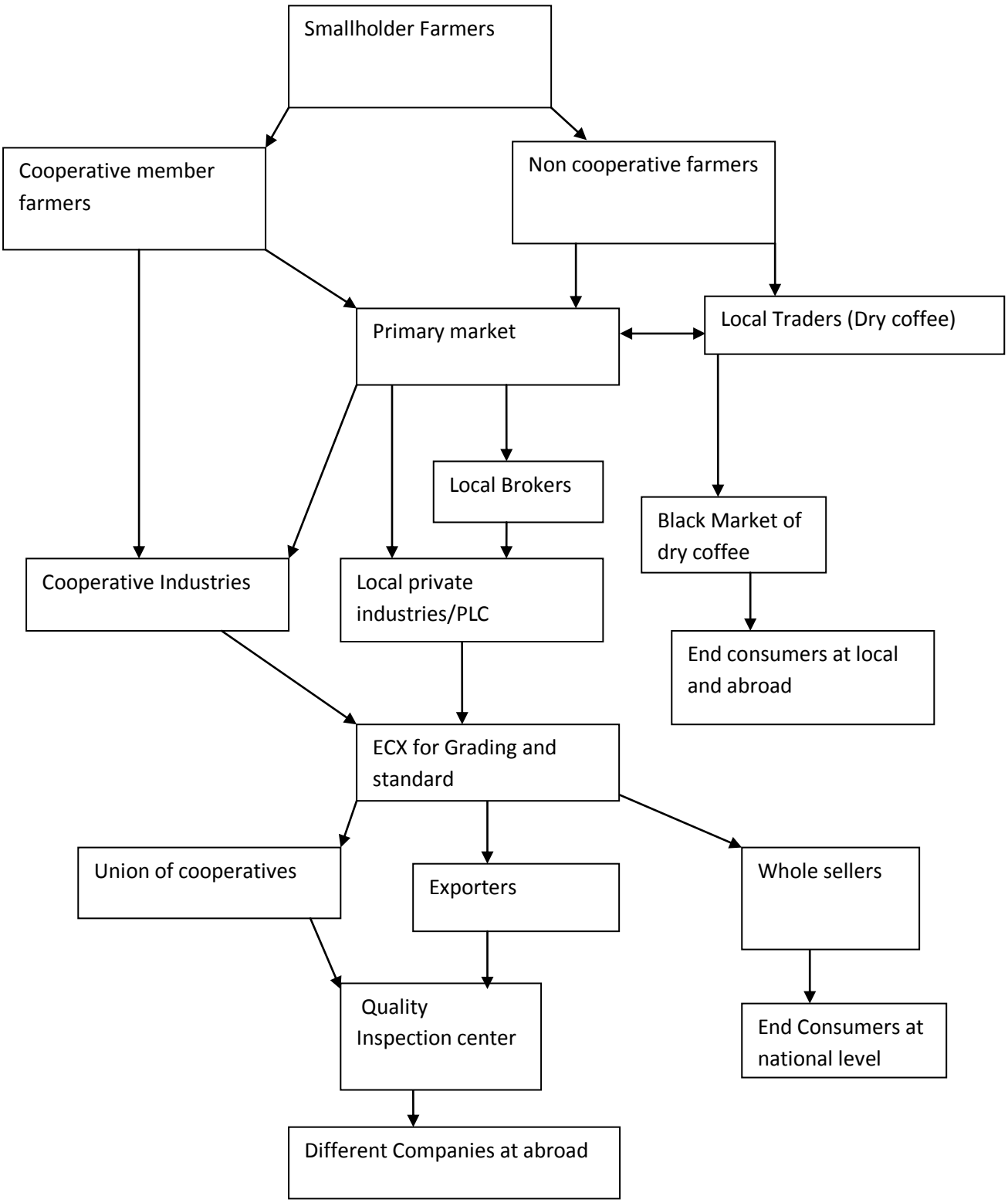
Market Plays great role for the traded of different commodities. End markets are the starting point of the value chain analysis. In the coffee sector end market are both local and export market. End markets determine the characteristics including price, quality, quantity and timing of product or service delivery of the other actors. In addition, end markets are the source of power for the performance of actors of the downstream chain. In the coffee value chain both local and export market influenced the chain activities.

As Dorsey & Tesfaye (2005) the organization can have four layers, that is primary cooperatives, unions, federations, and cooperative leagues, although only primary and union levels have been formed to date in the country. Since primary coffee cooperatives lack required human resources and logistical capacity the Ethiopian government took the initiative to establish Coffee Farmers Cooperative Unions to manage coffee export business on behalf of primary coffee marketing cooperatives. Since agriculture is the backbone of the Ethiopian economy government design different policy and strategies to support agricultural activities. Policy related to the coffee marketing cooperatives is one of them that affect the value adding activities of each actor along the chain. The fundamental success of the value chain would depend on the form of relationship between the members. The mode of relationship is fundamental to the design of the value chain. Cooperation among firms through vertical or horizontal relationships is critical for transferring skills and reducing transaction costs. Vertical relationship reflects the quality of relationships among vertically linked coffee value chain actors up and down of the value chain.

Due to efficient transaction along the chain the actors that are vertically related in the coffee value chain increase competitiveness of the entire industry. Furthermore, vertical linkages make easy the delivery of benefits and embedded services and the transference of skills and information between firms up and down are vertically linked to a varied range of market actors including wholesalers, retailers, exporters, traders, middlemen, input dealers, suppliers, service providers and others. The nature of vertical linkages including the volume and quality of information and services disseminated along the coffee value chain. On the other hand, in a value chain, horizontal relationship are longer-term cooperative arrangements among firms that involve interdependence, trust and resource pooling in order to jointly accomplish common goals. It can be both formal and informal among actors in value chain. Also it reduces transaction costs, create economies of scale, and contribute to the increased efficiency and competitiveness of an industry.

In coffee value chain the interrelationship of actors is essential for the effectiveness of value adding activities. Horizontal linkage is advantageous to share skills and resources and enhance product quality through common production standards. The value adding activities of each actor along the coffee value chain upgrade the performance of the service provided to the customers. In general the whole chain activities became efficient and effective than the competitors market. Competition Among the private traders, suppliers, exporters and other coffee marketing cooperatives union affect coffee value chain of the union. The competitions affect the development and expansion of the union negatively and positively. For instance, if the union scan the competitive environment of the coffee market in good manner than competitors it can gain the competitive advantage than others. On the other hand, if it cannot achieve it lose the competitive position in the coffee market.

Figure 2.1. Logical framework of Value chain analysis of coffee (modified from ABIY T.2016)

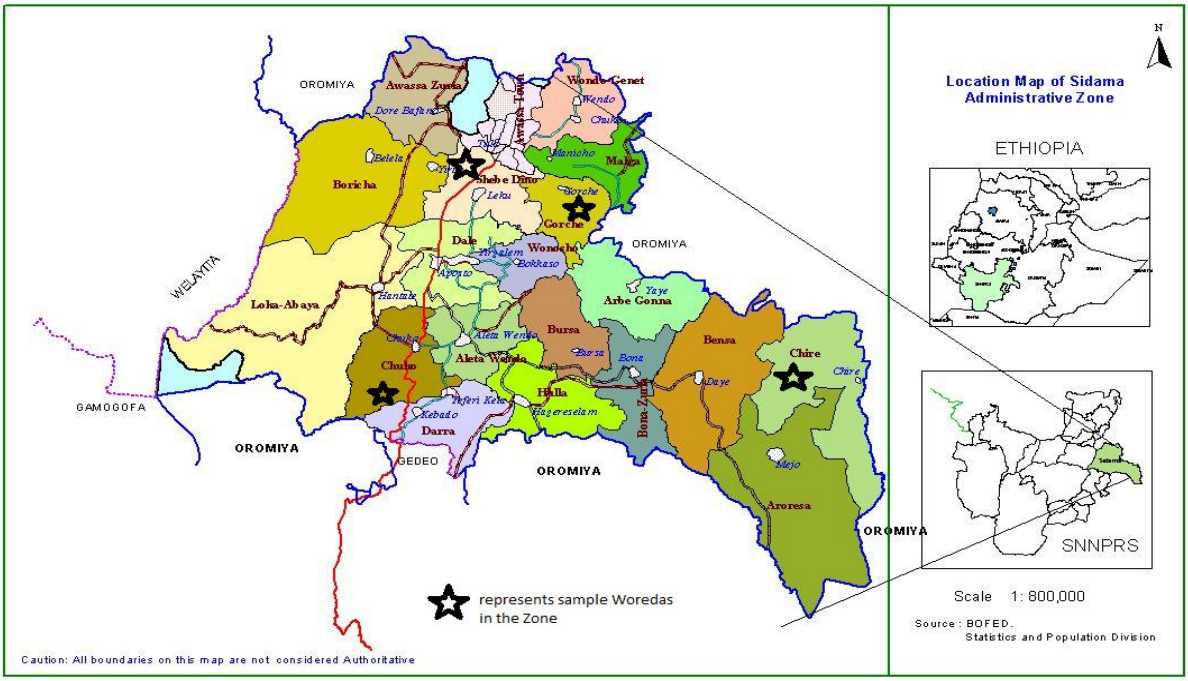


III. RESEARCH METHODOLOGY

3.1. Description of the Study Area

Sidama Zone is a zone in the Southern Nations, Nationalities, and Peoples' Region (SNNPR) of Ethiopia. It is named for the Sidama people, whose homeland is in the zone. Sidama is bordered on the south by the Oromia Region (except for a short stretch in the middle where it shares a border with Gedeo zone), on the west by the Bilate River, which separates it from Wolayita zone, and on the north and east by the Oromia Region. Towns in Sidama include Hawassa, the capital of Sidama and SNNPRS, Yirgalem and Wendo. Sidama has a population of around 3.2 million in 2017 who speak the Cushitic language Sidama (also known as Sidamigna) Sidama has 879 kilometers of all-weather roads and 213 kilometers of dry-weather roads, for an average road density of 161 kilometers per 1,000 square kilometers. Sidama Zone is the leading coffee producing zone in Ethiopia, which contributes greatly to the foreign exchange of the federal government. The Central Statistical Agency (CSA) reported that 63,562 tons of coffee was produced in Sidama and Gedeo combined in the year ending in 2005, based on inspection records from the Ethiopian Coffee and Tea authority. This represents 28% of Ethiopia's total output. The Zone is also rich in water resources, which are underutilized. Cattle numbers are good indicator of wealth, and gives chief popularity for the farmer who owns more cattle. The life of small-scale farmers in the area is highly linked with the use of coffee (Sidama Zone Finance and Economy sector report, 2017).

Figure 3.1 Sidama Zone administration map



Source: Sidama Zone finance and economy sector, 2018

3.2. Sample size determination and sampling procedures

3.2.1. Sample size determination

The following formula was used in the determination of sample size (Israel, 1992),

$$n = \frac{N}{1+N(e)^2}$$

Where n is the sample size needed, N is the population size of the study area (N= 370,973), and e is the desired level of precision (in this case, e= 7%) with the same unit of measure as the variance and e^2 is the variance of an attribute in the population.

Then, the sample size (n) will be calculated as follows,

$$n = \frac{370{,}973}{1 + 370{,}973(0.07)^2} = 203.96 \approx 204$$

Therefore, a total of 204 producers of coffee were selected for the study. These households were selected from selected four Woredas by using systematic random sampling method. The population size of coffee producers of Sidama Zone is 370,973 (Agriculture Office report, 2018).

3.2.2. Sampling techniques

A multi-stage stratified sampling technique was used to select sample farmers in Sidama Zone. In the first stage, study Sidama Zone was purposively selected based on the extent of coffee production. In the second stage, Sidama Zone was grouped into three livelihood or production areas based on the way of climatic condition. These agro ecology zones are high land Zone with 90,014 producers (HLZ), Semi arid lowland Zone with 207,462 producers (SALZ) and arid lowland Zone with 73,497 producers (ALZ). Each climatic condition has 5, 9, and 4 Woredas respectively (agricultural and rural development office report, 2018). In the third stage, one Woreda from high land Zone (HLZ), two Woredas from Semi arid lowland Zone (SALZ), and one Woreda from arid lowland Zone (ALZ) is selected based on the extent of coffee production, number of Woredas in each zone and discussion with extension officers. Consequently, Gorche Woreda from high land Zone (HLZ), Chirre and Shebedino Woredas from Semi arid lowland Zone (SALZ) and A/chuko Woreda from arid lowland Zone (ALZ) were randomly selected from respective agro ecology zones. Finally, 50, 27, 87, and 40 producers were taken by using systematic random sampling method respectively and total of 204 producers would be taken. The sample size was distributed in each sample Woreda based on the producers population size.

3.3. Types and Sources of Data

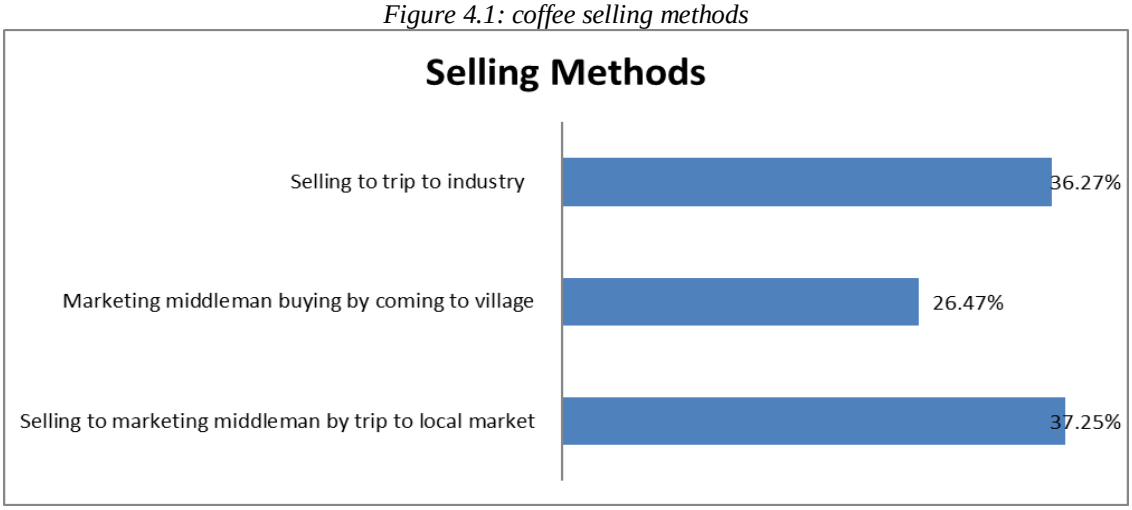
This study used both primary and secondary data to attain the stated objectives. The primary data was collected through structured questionnaires from coffee producers and key informant interviews from different value chain actors of coffee market. Moreover, Focus Group Discussions were held during the survey with actors of value chain of coffee market, local administrators and development agents. The secondary data was collected from different sources including BoFED, ECX, National Bank of Ethiopia, agricultural offices and CSA. Moreover, different published sources including journals were used to collect some secondary data.

IV. RESULTS AND DISCUSSION

4.1. Coffee selling nature and price determination:

Producers are dealing to sell the coffee with coffee buyers in their local area or may associate marketing by loading on their shoulders or on horses directly going to the market etc. The following table shows, how producers are marketing coffee products to the market. The above table indicates that 37.25 percent of respondents selling their products to marketing middleman by trip to market, 26.47 percent of respondents are selling their products by selling to marketing middleman by coming to their village, and the rest of the respondents that means 36.27 percent of respondents are selling their products by Selling to marketing to trip to industry.

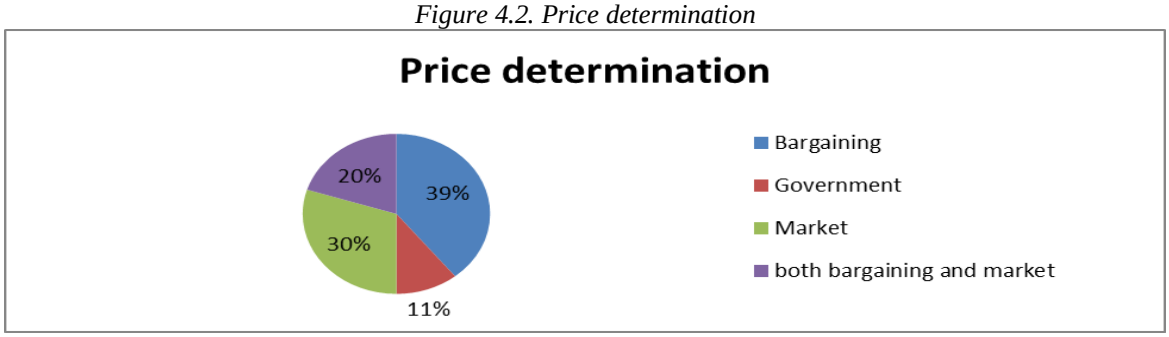
Figure 4.1: coffee selling methods



Price plays a key role in farm and product marketing decision. Determination price affected by different factors, some of these are demand and supply of the products, the marketing sectors, government and so on. Most of time product price is determined at the farm level (by producer) in the marketing system or by consumers at the retail level. The table below shows the information how the coffee price is determined in the study area. As we can see from the above table 39.22 percent of respondents determine their coffee price by bargaining and negotiation with the buyer or middleman, 29.9 percent of respondents determine their coffee price by using market through demand and supply. About 10.78 percent respondents said price of coffee is determined by government. Coffee price is set and determined at abroad before the consent of producers and they are enforced to sell coffee at determined price. The rest of 20.1 percent of respondents determine their

product price by negotiation, and of market. As focus group discussion, prices for coffee products are higher during or just after the coffee harvest. In the community, producers use the coffee as their source of income; it provides a ready source of cash (to buy food in times of shortage or to purchase things).

Figure 4.2. Price determination



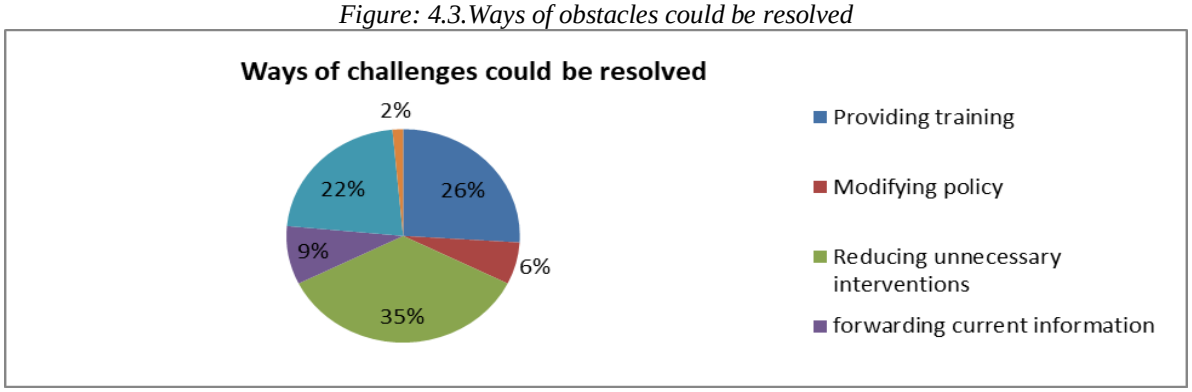
4.2. Challenges faced by producers

Table 4.1 problems those producers

No	Types of problem	Number of respondents	Percentage (%)
1	Lack of adequate training	69	33.82
2	Lack of infrastructure , like roads ,light, network	15	7.35
3	Unnecessary Interventions of brokers into market	99	48.53
4	Seasonal weather fluctuation	21	10.29
Total		204	100%

Source: survey questionnaire, 2018

Figure: 4.3.Ways of obstacles could be resolved



As the above table shows, the structure and performance of emerging rural markets remains to be a concern for accelerated commercialization of smallholder coffee product marketing. 7.3 percent producers have faced the problem of infrastructure. 33.82 percent households have faced the problem of lack of adequate training. 10.29 percent households have faced the problem of climate change. Most of respondents, around 48.53 percent producers face unnecessary interventions of brokers into market. Unnecessary interventions of brokers into market continued to be challenge for producers, especially those with poor access to markets. This reduces their ability to compete with well-established and commercial producers in more-favored areas with better market infrastructure to harness available and emerging market opportunities. According to focus group discussion, underdeveloped market linkages and problems of low economies of scale and high transactions costs often push smallholder producers to sell their coffee at the farm-gate with lower prices. There is a need for institutional innovations to reduce transaction costs through better coordination of marketing activities of smallholder producers and increased exchange of information. Despite its important role and good potentials, the coffee production and marketing system is not adequately legal-market-oriented. Despite the policy interest to expand coffee production for exports, there is lack of empirical evidence on the structure, conduct and performance of the coffee marketing systems in the rural area of the country. According to the respondent's best solution for above problems is reducing unnecessary interventions of brokers into market (35.29 percent), reducing vulnerability of illegal flow of coffee (22.06 percent) and providing training for producers (25.98 percent) that creates conducive environment for producers.

4.2. Local Dealers or Brokers

Dealers of the both cooperatives and private industries were intermediaries in the coffee value chain. Moreover they buy coffee from the members of the cooperatives with price advantage. Most of them were seasonal workers and their number is high in coffee collection period. They transport the coffee from the marketing center through traditional means of transportations to the warehouse of primary cooperatives and industrialists.

According to response of producers, 9.3 percent respondents assumed that local brokers had very high significance on the coffee value chain actors. Similarly, 12.3 percent respondents said that local brokers had high significance on the coffee value chain actors. Around 42.6 percent respondents said, local brokers had no significance on the coffee value chain actors.

Table 4.2: significances of local brokers on coffee value chain actors

Characteristic	Response	Frequency	Percent
Significance of brokers	Very high	19	9.3
	High	25	12.3
	Low	73	35.78
	No significance	87	42.6

Source: own survey, 2018

4.3. Primary cooperatives

Primary cooperatives are fourth actors in coffee value chain. They are located in different Woredas of the Zone. Moreover, they mainly supply coffee. Table 4.3 presents the summary statistics of some institutional characteristics of households in the study area. Membership to cooperatives was one of the channels through which new technologies were transferred to farmers. Farmers` organizations played an important role in organizing members into input cooperatives and in creating access to inputs and extension officers. The farmers' membership to cooperatives included those established to facilitate the agricultural production of farmers such as coffee supply cooperatives and farmers associations. It was observed that about 65.2 percent of smallholder coffee producers were members of coffee supply-oriented cooperatives. Such participation in cooperatives facilitated communication between farmers and other bodies such as researchers, extension officers and government. Those members to cooperatives obtained additional benefits more than private producers. From members of cooperatives about 56.63 percent producers obtained additional income and marketing, and 19.28 percent producers could obtain savings and credit and other social value services. According to interview with producers, although members of cooperative sell their coffee at the same price with private producers for cooperatives, they share a profit of cooperative that come after coffee is sold at abroad if any. Obtained profit from both cooperative and unions, member share 70 percent of profit for themselves and the remaining 30 % retain for further investment. End consumers of Sidama coffee at abroad pay premium for using certified union coffee. And established projects under union spend total amount of this premium only on development of social infrastructures. As interview result from senior officer, cooperative member producers rather than non members obtain additional income from by selling at normal prices, sharing cooperative profit, union profit, and premium payments. In addition one can be consider that members joined the cooperatives due to the cooperatives unions sell their product for better price at abroad (USA, Europe, and Japan) based on officials responses and key informant interview result. Sidama cooperative coffee union export and sell their coffee under umbrella of five different certified brand companies such faire trade, rain forest alliance, UTZ, café practice and organic coffee.
The data collected from respondents and Key Informant confirmed the cooperatives have inadequate resources that limit it from affording important equipment. Hence from this finding one can decide that members did not buy inputs from the cooperatives. Concerning members face problem related to roles the replied responses from respondents and key informant interview enable to conclude members face problem related to roles. According to the result, although the number of farmers' membership to input supply and related cooperatives was small, all smallholder coffee producers were members of various non-agriculture-oriented institutions and organizations such as religious groups (in churches and mosques), *Idir, Ikub* and others.

According to higher Union officials' interview, cooperative industries buy coffee from the members of the cooperatives and supplied to ECX warehouse at Hawassa for inspection of quality and grading then transported to Sidama Coffee Farmers Cooperatives Union in Adiss Ababa. The union buys coffee by current price set at ECX for the specific kind of coffee. In supporting the survey results, interview with the execute officials of the union point out that lack of conductive market place and lack differentiated products were the ones raised under this issue. In order to be competent cooperatives, have to present well organized services at attractive prices. According to Kodama (2007) in cooperative, efficiency increased through minimizing business operation costs while maintaining quality of services.

Table 4.3: Membership in cooperatives

Characteristic	Response	Frequency	Percent
Membership in cooperatives	No	121	53.31
	Yes	83	40.69
Functions of cooperative	additional income and marketing	47	56.62
	Savings and credit	16	19.27
	social value	16	19.27
	Other	4	4.81

Own survey, 2018

4.3.1. Primary cooperatives/Coffee growers: most of the coffee production in Sidama zone is characterized as small holding traditional farming system and dominated by garden coffee. Primary farmers' service cooperatives societies are kebele level cooperatives, who are engaged in providing multipurpose activities, mainly for member farmers. Their service ranged from providing different inputs up to basic coffee processing like washing and drying. During the study time, there were around 63 primary farmers' service cooperatives in the zone. Primary cooperatives categorized in to two based on capacities of cooperatives. These are member of union and member of federation .The union member of primary cooperatives are 57 and the remain 6 primary cooperatives are member of federation. Primary cooperative member of union are well developed when compare with federation members which is shows the less developed cooperatives. For primary union member of cooperatives any necessary support will get from union like credit machinery and other and another way for small cooperatives like federation member will get any support from regional federation body.

4.3.2. Sidama coffee growers' cooperatives union: According to the interview with union officials, this is the giant cooperatives union even at the country level, which is currently exporting the country's high quality, large volume and internationally certified and branded Sidama coffee to different parts of the world, specially to USA, Europe and Japan markets. The Union was founded in July 2001, comprises 39 primary cooperatives representing 85,275 farmers producing around 35,000 tons of coffee (60% washed) with the cooperation of USAID. The union currently consists of 57 primary cooperatives societies around the zone of which 99 of member cooperatives own their own coffee processing industries.

4.4. Private Industrialists

4.4.1. Private industry accessibility: in Sidama zone, according to interview with agricultural sector officers, there are 368 private processors with their main activity of collecting red cherry coffee from producers, and local traders, and exporting or supplying processed coffee to the national market. Additionally, private industry can be established following water flow at 3 up to 5 km distance interval and around coffee availability and by checking potential of coffee production. According to interview with private industries, the reasons for selecting to engaged in private coffee processing industries were its profitability, availability, best alternative business, experience they have in the area, and its high contribution to national income.

According to response of producers, 78.9 percent respondents assumed that local industries had very high significance on the coffee value chain actors. Similarly, 16.1 percent respondents said that local industries had high significance on the coffee value chain actors in table 4.4. As group discussion private industries did not take care environment and water from pollution, they saw only their benefit rather than environmental hazards. However local people speaks accessibility of industry at local level very good comparing with previous time that industries was not found around them season.

Table.4.4. Significances of local industries on coffee value chain actors

Characteristic	Response	Frequency	Percent
Significance of local industries	Very high	161	78.9
	High	33	16.1
	Low	8	3.9
	No significance	2	0.98

Source: survey data, 2018

4.4. 2.Challenges faced by Industrialists

The interview result showed, in coffee marketing constraints were scored poor quality coffee as a major constraint, scored lack of market and the and supply of quality coffee, volatility of international market price and lengthens of market chain respectively. According to this result the variation shows most traders, about more sample respondents confirmed that poor quality coffee was the major problems that affect the potential of coffee to fetch reasonable price at the export markets. The major reasons stated by traders were poor quality

coffee created during the time of harvesting, processing, packaging and handling system at different producers and suppliers, and poor warehouse management at ECX regional center resulted in deterioration of coffee quality.

Problems faced industries at local market brokers add prices on each kg to by competing with another brokers. As interviewers 'local brokers or dealers did not care to cost benefit analysis the only objectives of dealers how much kg I provided to industries and how much many birr I will get per day work. Dealers also not worry about coffee quality unless he collecting different types of coffee. Primary industries also faced to unnecessary market competition with each other and in addition with cooperative industries. At local industries lack of infrastructure access like road, light, network, and etc. Another big problem which was industries faced during their work the provision of credit is not providing for industries as their responses. That industry also faced not only scarcity of money availability but also that credit not provided for inventories' by keeping time this is an issue for value chin actors like privet inventories.

According to the interview with industry owners, they manifested financial constraints in form of; inadequate financial resources for investment, too high interest rates on borrowed funds, unfavorable terms of borrowing usually a grace period of one month. Some owners depend on own savings, family or personal friends to engage in their business activities. When borrowing is done under prevailing terms provided (loan repayment period of 6 months and grace period of 1 month) by commercial banks and micro-finance institutions, industrialists' properties have often been sold. One businessman observed that: "*borrowing these days is a recipe for loss of my property and am not ready for that*." They require financial assistance to buy business inputs- machine and equipments; storage/safety houses; purchase of coffee. According to interview with industrialists, most of industrialist needed credit to undertake business. In addition to this, from those who needed credit only some industrialist got credit services for business purpose. Other industrialists could not get the service due to various reasons such as absence of the service for the intended purposes from formal financial institutions and enforced to borrow by too high interest rate imposed by money lenders.

4.5. Ethiopian commodity exchange market (ECX)

According to formulated Proclamation 702/2008, by the Council of Ministers of Ethiopia on the establishment of ECX, Ethiopia is experiencing new marketing development. The law stipulated that, all supply of coffee, with an exception of grower direct exports, are to be traded in the newly established Ethiopian Commodity Exchange (ECX) market. Thus, currently, the Ethiopian coffee market can be summarized as follows. Small farmers sell their products to local merchants, who in turn sell to distributors and collectors (or cooperatives) who export through the ECX. Cooperatives sell directly to the ECX and capture margins that would otherwise be captured by merchants and collectors (USAID, 2010). ECX is established as a demutualized corporate entity with a clear separation of ownership, membership, and management. Thus, owners cannot have a trading stake, members cannot have any ownership stake, and the management can be neither drawn from the owners nor from the members. ECX is designed as a public-private partnership enterprise, in a unique institutional innovation for Ethiopia. The corporate governance of ECX maintains a healthy balance of owner and member interests (AfDB, 2013). Trading in the ECX can only occur on the basis of warehouse receipts and can only be conducted by registered members of the exchange, trading either for themselves or on behalf of clients. Common participants in the ECX are suppliers, cooperatives, traders and farmers. The following figure depicts how the Ethiopian Commodity Exchange market functions.

The Interviewed conducted with officials at ECX identified low quality of coffee as problem. This is due to the case of skills and knowledge gaps by coffee producers, processors and exporters. Most of the times coffee quality was not started at producers level during harvesting red rip cheers and processing at the dry and wet meal stations. Because of this reasons the supply of quality coffee will be reduced. In addition, poor harvesting, handling and processing techniques and higher consumption in the local market lead to waste and reducing the supply of coffee. International markets are quality coffee oriented, due to this reasons the export performance of coffee has decreased. This problem is a great pillar for the performance for coffee export. However, coffee marketing requires promotion in different international coffee exhibition. And timely and reliable market information is widely accepted service. Due to this reason coffee market efficiency and its performance was gradually reduced. International coffee market price volatility was reported by some of officers as another constraint for coffee exported. Deresa, (2015) also confirmed that price volatility has significant consequences for those who depend on coffee for their livelihood, making it difficult for growers to predict their income for the coming season and budget for their household and farming needs. When prices are low, farmers have neither the incentive nor resources to invest in good maintenance of their farms by applying fertilizers and pesticides or replacing old trees.

4.6. Sidama Coffee outlets

4.6.1. Harvesting

According to focus group discussion, ripening of Coffee follows the same track that means it starts from the lower altitude to higher altitude. Ripening from low altitude to high altitude starts between October and November. Farms will be ripened in between the months depending with the altitude they are found. After ripening of coffee, a farmer usually take it to a near Primary Cooperative Society or private industrialists where he/she sale his/her parchment coffee. Top quality coffee is produced only from fully-ripened and freshly picked cherries. Primary cooperatives always advice farmers to pick this type of coffee there by maintaining quality for their clientele. Top quality coffee is produced only from fully-ripened and freshly picked cherries. Harvesting is done carefully under close supervision.

Regarding coffee outlets, 84.8 percent respondents preferred legal outlet while as 15.2 percent respondents preferred illegal outlet. From respondents that preferred legal outlet, about 49.1, 23.7 and 27.2 percent respondents preferred legal outlet due to its contribution to economic growth, being free from challenges and to assure safety of coffee for actors respectively. On other hand, from respondents that preferred illegal outlet, about 51.5 percent preferred it to have more income, about 25.8 percent preferred it for being free from tax, 9.6 percent for its reduction in transportation cost and 12.9 for its accessibility (Table,4.11).

Table 4.5: coffee outlet preferences

Characteristic	Response	Frequency	Percent
Which coffee flow is preferable	Legal	173	84.8
	Illegal	31	15.2
Legal	Economic growth	85	49.1
	No challenge	41	23.7
	Safety	47	27.2
Illegal	More income	16	51.5
	More accessible	4	12.9
	Reduce transportation	3	9.6
	No tax	8	25.8

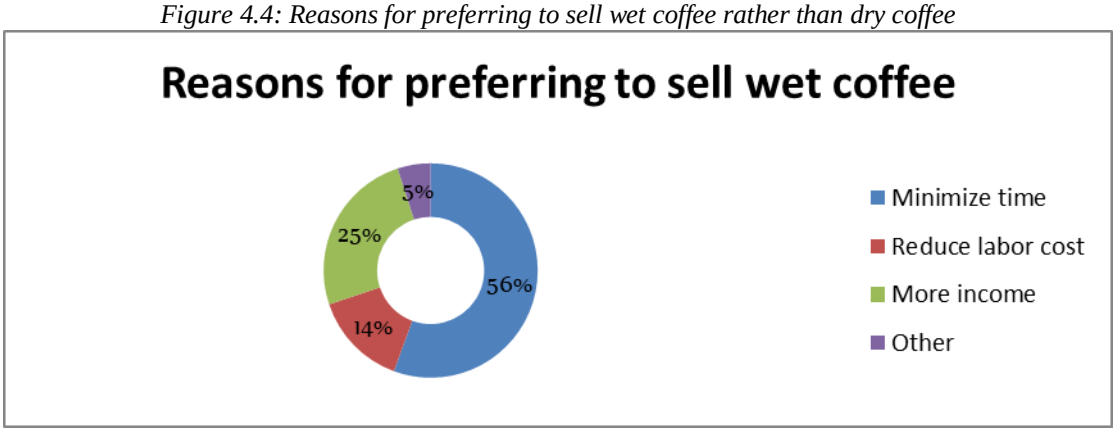
Source: Own survey, 2018

4.6.2. Coffee Processing:

Processing of good coffee starts from the harvesting period to end consumers. As such farmers are advised to pick only fully ripe cherries. However, if the farmers turn out mixed cherries; manual sorting will be applied to separate good cherries from the others. Then it will be made ready either for pulping or special natural preparation. This system will be help both producers and each coffee value chain actors as well as obtaining good economic income for home country. Both dry and wet coffee processing system make more effectiveness of results of each actor to share more experiences of for their operation. On each stage different actors except producers by adding value build business for themselves.

4.6.2.1. Washed Processing: According to interview with industrialists, it is the most commonly used coffee processing method, especially among premium coffees. After the red cherries are picked the coffee is further sorted by immersion in water. Less dense cherries will float and the others will sink. The skin of the cherry is removed using ecopulpers to get parchment coffee. However, the parchment still has significant amount of mucilage. In order to remove the mucilage the parchment coffee will be kept in fermentation tank for about 2 to 3 days depending on the temperature and the humidity of the area. Once it is realized that the mucilage is removed the coffee goes to a soaking tank. Stays there for about 12 hours, and then will be taken the raised be where the coffee dries to the proper moisture level for about two weeks. The dried parchment will be taken to the cooperatives warehouse, where the coffee rests before starting the long journey. When the coffee reaches appropriate moisture level, it will be further handpicked to remove exposed and damage bean. According to the respondents, 56 percent of respondents preferred selling wet coffee rather than dry coffee to minimize time. And 25% and 14 % respondents preferred to sell wet for a reason of having more income and reducing labor cost (figure, 4.4).

Figure 4.4: Reasons for preferring to sell wet coffee rather than dry coffee



4.6.2.2. Sun-dry Coffee Processing

According to interview with industrialists, Sun-dried coffee harvesting is done mostly by family laborers. The arrival cherry from the farmers will be hand sorted first and then the less dense cherries also will be removed. Then the good cherries will be taken to raise bed to dry under sun light. The coffee cherry is allowed to dry to about 11.5% moisture. Most of time sundry coffee less supplied to central market when compared with wet coffee. because wet coffee early supplied for local market and reached to either cooperative or privet industries through producers and dealers. On another way the sundry coffee highly exposed to illegal out lets and mostly for local consumption which was collected by producers non cooperative members. After that the husk will be removed at the cooperative level and the green bean will be transported to the union for final processing before it is shipped.

4.7. Exporting

4.7.1. Sidama coffee exporting performance

According to interview with ECX officials, before Exportation, the coffee is brought to the quality control center in order to;-

1. Verify the original character of the coffee
2. Check if the green and cup quality have met the export standards
3. Ensure the reputation of the country in general and at study area particular for high quality coffee supply.

Exporting coffee after passing many challenges at each stage from producers to exporters final result should exported to different countries.

According to interview with exporters, after the all the coffee production and processing activities are finished, it exported to the international market by exporters. Exporters found in Addis Ababa central market who received coffee from private producers, private traders and cooperative unions to sell it to the international market. These exporters bought the coffee from the central auction market through ECX. These coffee exporters do not get any coffee from the state producers, because state farm producers export coffee to foreign market by themselves. They play a significant role by searching foreign market through the linkage they have with the importers outside the country. They add a place utility to the commodity coffee. Here, the unions, the private traders and the state owned producers could also act as exporters of coffee, since they can directly sell it to the foreign importers. The following table shows that, collected coffee and supplied coffee for export.

According to interview conducted with Union officials, Sidama mainly exports green beans with only a very small amount of roasted beans. Sidama coffee is currently 70-80 percent unwashed or sundried and 20-30 percent is washed coffee. Unwashed coffee generally commands a lower price in many markets, including the United States. The image of washed coffee being somehow 'cleaner' is prevalent in some countries, while other countries specifically require unwashed coffee for better and richer taste. Germany accounted for the largest share of Ethiopia's coffee exports by volume, followed by Saudi Arabia, and Japan. The United States was the fourth largest destination. Sidama, which is considered as coffee's high potential area, produces high-quality Arabica coffee for both the domestic and international markets. Coffee plays a major role in Ethiopia's economy and is deeply intertwined with cultural traditions and day-to-day living.

Table 4.6: Export performance of Sidama Coffee

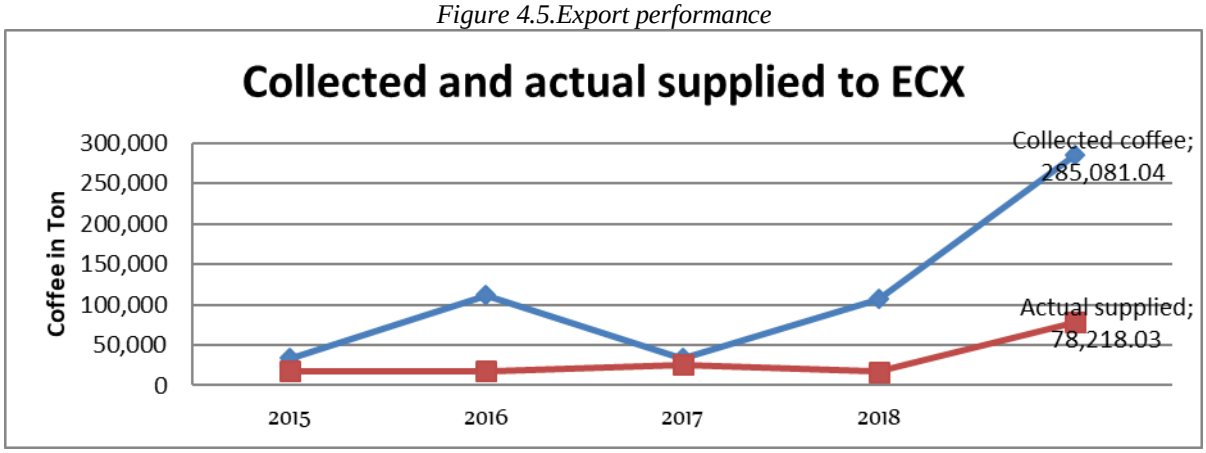
No	Year	Collected washed coffee/ton			Washed coffee supplied to ECX		
		Cooperatives	Private	Total	Cooperatives	Private	Total
1	2015	8000	25362	33,362	4773.07	12,900.76	17,673.83
2	2016	27,556.89	83,710.14	111,267.03	4759	13,254	18,013
3	2017	7675.579	25,850.124	33,525.703	7287.82	18,335.4	25,623.22

4	2018	23,263.95	83,662.36	106,926.31	4229.51	12678.46	16,907.978
	Total	66,496.5	218584.62	285,081.04	23,749.36	57,168.62	78,218.028

Source: Sidama Zone agriculture sector, 2018

In 2015, cooperatives and private industries collected 33,362 ton coffee from producers. However both of them supplied only 17,673.83 ton to central market. In 2016, cooperatives and private industries collected 111,267.03 ton coffee from producers. However both of them supplied only 18,013 ton to central market. In 2017, cooperatives and private industries collected 33,525.703 ton coffee from producers. However both of them supplied only 25,623.22 ton to central market.

Figure 4.5.Export performance



In 2018, cooperatives and private industries collected 106,926.31 ton coffee from producers. However, both of them supplied only 16,907.978 ton to central market. The above graph and table showed that there is high mismanagement in coffee chain and most of coffee goes to illegal outlets through different brokers (Table, 4.6). Additionally, the gap between what collected and supplied has been widened not only due to illegal outlet but also legal outlet wastage.

4.7.2. Challenges of exporters

According to interview undertaken with exporters, a basic challenge which exporters faced at many times was collectors did not provide coffee by time this showed delayed of coffee at local industries in their story. Similarly, as exporters mentioned accessibility of at abroad is very big challenge to get adequate market and volatility of prices at abroad with comparing local and central market. The quality is another challenge to supply by confidence as organic coffee, because Sidama coffee is kwon by its quality but now a days many competent emerging both from country and different coffee producers' countries. As exporters and ECX respondents local market coffee price is not fair when compared with abroad including transportation. To take or supply coffee through exporters internal and external peace and stability is very significant thing for minimize risk which is emerging at each actors and home country both producing and supplying.

4.8. Marketing margins between each value chain actors

The current system of coffee traders, individual collectors, and transporters interact continually and responds to market information. The market is particularly sensitive to prices on a daily basis such that any attempt to raise or lower coffee prices result in a corresponding change in supply to the market. Margins tend to be high partly due to the risks involved, leading to the relatively high cost of coffee by actors upstream in the chain. Processors and exporters are generally less affected by risks than farmers.

Table 4.7.profit margin of each actor in the chain

No	Items(Birr/Qt)	Producers	Collectors (Industrialist/ Cooperatives)	Exporters	Summation
1	Purchasing price	-	997.9	1492.6	
2	Labor	760.4	11.9	10.8	783.1
3	Composite, pesticides, keepers, etc	34.3	-	-	34.3
	Total Production Cost (2+3)	**794.7**	-	-	794.7
4	Packing material	29.7	60.5	90.5	180.7
5	Transport and commu.	18.7	22.8	123	164.5
6	Dealers payment	4.8	15.4	14.7	34.9
7	ECX member	-	-	36	36

8	Store/warehouse rent	8.5	5.3	12	25.8
	Total marketing cost (4+5+6+7+8) and 2	**856.4**	**115.9**	**287**	1259.3
9	Overhead cost	7.3	4.5	7.6	19.4
10	Tax	18.6	12	41.9	72.5
	Total cost	**882.3**	**1130.3**	**1829.1**	3841.7
11	**Average Selling price**	**997.9**	**1492.6**	**3676.96**	
12	Gross margin	203.2	494.7	2184.4	2882.3
13	%share of margin	7.04	17.16	75.78	100%
14	Profit margin	115.6	362.3	1847.8	2325.76
15	%share of profit margin	4.97	15.57	79.45	100%

N.B, 100 Kg =1 quintals, 1 kg= 2.2 Pound and 1USD=28.34 birr

Market institutions are values, rules, regulations, policies or services that form the way in which producers/farmers and traders collaborate. The association of the producers/farmers and traders reduced the costs of production, risks and support also trade activities. Market institutions include mechanisms for monitoring commercial arrangements, enforcing contracts, and establishing and punishing violations. It forms the corporate environment that surrounds the trading activities in the value chain. In the table below, profit margin of each actor is explained to state which actor is more benefited or disadvantaged. Accordingly, exporters are taking a large share of profit margin (79.45 percent) than producers (4.97 percent) and collectors (15.57 percent) in table 4.7. Cooperative collectors were not disadvantaged as such private industrialists which has its own coffee value chain. Even they can directly export their coffee to abroad branded companies.

V. Conclusion and Recommendations

5.1. Conclusion

Most of producers even, face unnecessary interventions of brokers that come on behalf of industry to set lower price that reduces income of producers. Unnecessary interventions of brokers into market continued to be challenge for producers, especially those with poor access to markets. Infrastructure development in the study area was very low. It thus implies that the longer distance from a household to the nearest market makes farmers to be disadvantaged by increasing the transportation costs. Focus group discussion result showed that there were areas that transport vehicles could not reach. Farmers under these conditions face difficult to reach improved technology, transport output and produce easily. This resulted, producers to sell their coffee by loading on their shoulders or on horses by trip to the local market. In relation to faced problem with access to market based on the finding from replied responses of respondents and key informant interview result one can conclude that access to market is one of the problems that prohibit the effective achievement of the actor's roles in the coffee value chain. Most of producers even, face unnecessary interventions of brokers that come on behalf of industry to set lower price that reduces income of producers. Unnecessary interventions of brokers into market continued to be challenge for producers, especially those with poor access to markets.

5.2 Recommendations

1. Training is essential at all levels of the value chain if coffee is to become a sustainably utilized product. Stakeholder should provide trainings for actor of coffee value chain.
2. Government should give more attention on how to minimize illegal out lets of coffee. To minimize illegal out lets of coffee and to supply large amount for central market government any stakeholder bodies should give more attention for coffee value chain .
3. Formal financial institutions should provide adequate credit for private investors on time.
4. Government should search market access at abroad and make local market to be fair by reducing interventions of brokers.
5. Government should find ways to make profit margin share to be fair among actors
6. Different stakeholders that directly and indirectly participate along the coffee value chain are responsible for the integrated operations. The fast flow of information and knowledge between actors in the chain facilitates the day to day value adding activities therefore all actors have to usually exchange information and knowledge.
7. The study recommends the government to increase the access of cooperatives among coffee producing areas which increases coffee farmers' income from fair market and coffee supplied to national and international market and reduces marketing cost and distribution of informal coffee sell, market and traders. Stakeholder bodies should create awareness for producers to be members of cooperatives.
8. Cooperative member producers were more successful rather than non-cooperative member producers for this reason come producers should membership be engaged with cooperative members for more their significance.

9. Long distance to the agricultural produce markets and poor infrastructure was also an hindrance in marketing of coffee and this study recommends the improvement of the infrastructure to enhance coffee marketing.

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