

Constraints and Opportunities in the Coffee Supply Chain: Value Chain Analysis from Coffee Farmers to Exporters- Case of some selected Districts of Ilu Aba Bor Administrative Zone, Oromia, Ethiopia

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Abstract- Identification of the constraints and opportunities in the coffee supply chain from Ilu Aba Bor administrative zone to exporters in Addis Ababa was the main purpose of the study. The respondents- farmers, traders, millers were randomly selected and interview was used as data collection instrument. As per the findings, poor quality in coffee drying (drying red coffee beans on floor), collecting and mixing of better quality coffee with the poor one were some of the major challenges faced in the coffee supply chain. The opportunities are the availability of huge production of coffee product and the conducive climatic condition of the area. Concerned government body is supposed to monitor the illegal work of local traders regarding mixing better quality coffee beans with the poor one that has dropped market demand at the Ethiopian Commodity Exchange level. Furthermore, this poor work has also declined the quantity of coffee to be exported for international markets and the amount to be earned from export. In addition, farmers and collectors should get training regarding how to collect and dry coffee without quality deterioration.

Index Terms- Coffee, value chain, farmers, exporters, Ilu Aba Bora, Oromia, Ethiopia

I. INTRODUCTION

Background of the Study

Nowadays, due to globalization and internationalization of trade, competition becomes more and more vigorous. To remain competent enough and gain from competition, firm/country need to identify and focus on areas that can enhance its competitiveness. Beyond being the origin and home of organic coffee Ethiopia is exporting coffee to the World market including Germany, Saudi Arabia, France, Belgium, United States, Sudan, Italy, Japan, Sweden, United Kingdom, South Korea, Jordan, and Australia.

Nevertheless, the country had generated about 25% of the country's total export earnings from exporting coffee (Abu & Teddy, 2013). As a result there is a need to conduct strength, weakness; opportunity and threat (SWOT) analysis to get a clear understanding of the coffee supply chain in Ethiopia that enable the country become competent in the global market. In this regard, the competency can be attained by reducing weaknesses, adapting to threats and exploiting opportunities with the strengths the country held in the supply chain.

In order to identify the Ethiopian coffee supply competitive advantage, coffee value chain analysis were carried out as products pass through all activities of the chain in sequence and at each activity the product gains some value (Porter, 1985).

Though Ethiopia has got foreign currency from coffee export, there are some drawbacks when compared to other exporting countries and at the same time there are great variations on the amount of revenue generated per sack by different regions/zones in Ethiopia. For instance, according to the fiscal year 2011/12 coffee export performance report by Ethiopian coffee exporter association, the share of Ilu Aba Bor coffee export is neither significant nor researched. Moreover, the coffee products marketed to Ethiopian commodity exchange (ECX) trend is fluctuating very much since 2003 to 2013¹.

Statement of the Problems

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 tonnes 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. Coffee is one and the chief among them to generate foreign currency- which in turn help to purchase and import abroad produce such as electronics, machineries and equipments. On the contrary, recently, the coffee price have been shown down scale which resulted in reduction of revenue for the nation in general and coffee farmers in particular.

In addition, when come to specific area, Ilu Aba Bor administrative zone had played insignificant role in exporting coffee to foreign markets and even its market share at Ethiopian commodity exchange is very less. As preliminary discussion was revealed, quality is the dominant factor and it motivated me to identify how it was happened in the coffee supply chain. Hence, this study was focused in the above mentioned zone and followed by research questions.

Research Questions

- ✓ What are the actors involved in the coffee supply chain in Ilu Aba Bor administrative zone?

¹ Ilu Aba Bor zone agricultural office, 2014

- ✓ What are the constraints and opportunities exist at each coffee value chain actors in the zone?

Objectives of the Study

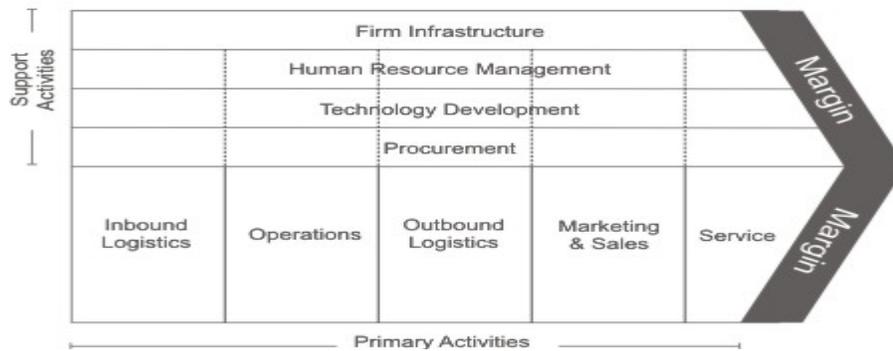
- To identify the actors involved in the coffee supply chain in Ilu Aba Bor administrative zone.
- To identify major constraints and opportunities existing at each level of value chain actors in the zone

II. LITERATURE REVIEW

Theoretical Framework

A value chain is a chain of activities. The activities in the value chain may include purchasing activities, manufacturing/processing the product, distribution and marketing activities (Lynch,2003). Porter described a chain of activities common to all businesses, and he divided them into primary and support activities as shown in figure 1 below.

Figure 1: Porter's Generic Value Chain



Source: Porter (1985)

Primary Activities

Primary activities relate directly to the physical creation, sale, maintenance and support of a product or service. They consist of the following: Inbound logistics, i.e.all the processes related to receiving, storing, and distributing inputs internally. In this regard,supplier relationships are a key factor in creating value. The other is operations, i.e. transformation activities that change inputs into outputs that are sold to customers. Here, the operational systems create value. Outbound logistics are activities regarding delivering product or service to customer. These are things like collection, storage, and distribution systems, and they may be internal or external to the organization. Marketing and sales are the processes used to persuade clients to purchase from you instead of your competitors. The benefits you offer, and how well you communicate them, are sources of value. Service-are the activities related to maintaining the value of your product or service to your customers, once it's been purchased.

Support Activities

These activities support the primary functions above.Companies use these primary and support activities as building blocks to create a valuable product or service.

Importance of Value Chain Analysis

The aim of the value chain framework is to maximize value creation while minimizing costs. In addition, all decisions made at one step in the process have consequences for the following steps and often such decisions may be irreversible. The value chain framework of porter is an interdependent system or network of activities and when the system is managed carefully, the linkages can be a vital source of competitive advantage (Pathania, 2001).The value chain mapping and analysis is also required to create value that exceeds the cost of providing the product or service and generates a profit margin. Porter used the word 'margin' for the difference between the total value and the

cost of performing the value activities (Figure 1). Here, value is referred to as the price that the customer is willing to pay for a certain offering (Macmillan et al, 2000). Other scholars have used the word 'added value' instead of margin in order to describe the same (Lynch, 2003).

Moreover, the benefits of implementing various supply chain managements (SCM) improvements are quantified; bottlenecks and high-/low-cost value processes are isolated. Value chain mapping and analysis also provide an assessment of competency in core areas. The analysis entails a thorough examination of how each part might contribute towards added value in the company and how this may differ from the competition.

Eventually, the value chain is very important because it is a very flexible strategy tool for looking at your business, your competitors and the respective places in the industry's value system. The value chain can be also used to diagnose and create competitive advantages on both cost and differentiation (Simister, 2011).

III. METHODOLOGY

Research Design

Descriptive survey research design was employed for conducting this study as the study is believed to be helpful in obtaining pertinent and precise information and that also help to draw valid conclusion about the events or activities of a target population.

Sources of Data

The study was based on primary and secondary sources. The literature review totally depends on secondary sources while the analysis depends on primary sources specifically interview. In addition to primary sources, analysis hub on secondary

sources of data which had obtained from relevant literature on coffee supply chain.

Target Population

The target population of the study comprised of coffee producers/farmers, coffee wholesalers (including ECX), coffee farmer union, trade and marketing office of Ilu Aba Bor administrative zone, and coffee millers or processors.

Sampling Techniques and Sample Size

Simple random sampling was used to collect data from coffee farmers, traders and coffee farmer union. Ethiopian commodity exchange(ECX) at head office, addis abeba, and bedelle town were contacted. Ten coffee farmers from each of the four districts (totally forty farmers), ten wholesalers, four millers, two ECX(beddele and addis ababa), one unions and three farmer cooperatives were contacted.

Data Collection Instruments

Semi-structured interview was used as data gathering instrument to secure important and in-depth information from

coffee farmer unions, ECX, and trade and marketing agency of Ilu Aba Bor administrative zone.

Methods of Data Analysis

After the collected data edited and coded, it was entered into computer software called statistical package for social science (SPSS). Data also depicted using figures.

IV. RESULTS AND DISCUSSION

Coffee Value Chain Actors

The actors participating in the coffee value chain are farmers (grow the coffee crop for living- to use money obtained from sale of coffee for basic needs), middlemen/intermediaries(for collection of coffee from farmers and supply to domestic/local market, exporter or Ethiopian commodity exchange), unions or cooperatives associations, processors(hullers and wet mills),exporting firms and local roasting firms.The chain was depicted as in figure 2 below but it was not straight as seen because sometimes famers sell to wholesalers and the like.

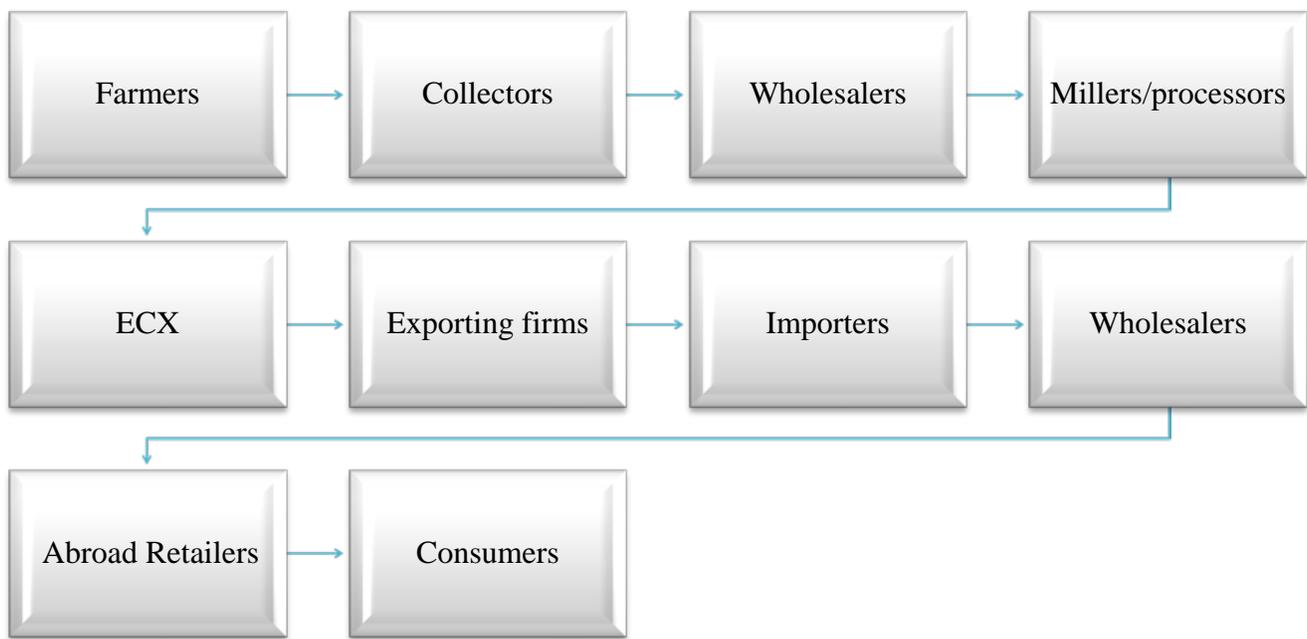


Figure 2: Coffee value chain actors (source: researchers)

Coffee Value Chain actors, Constraints and Opportunities

Coffee Production

Coffee production in Ethiopia is practiced using four different systems of cultivation: forest coffee, semi-forest, garden system and shadow-giving trees. The majority of Ethiopia's coffee comes from small plantations, which make up about 160,000 hectares or 40% of the country's entire coffee-growing area.

There are also about a further 20,000 hectares of coffee plantation, either with or without shadow-giving trees. The coffee seedlings are cultivated from seed or cuttings and, after

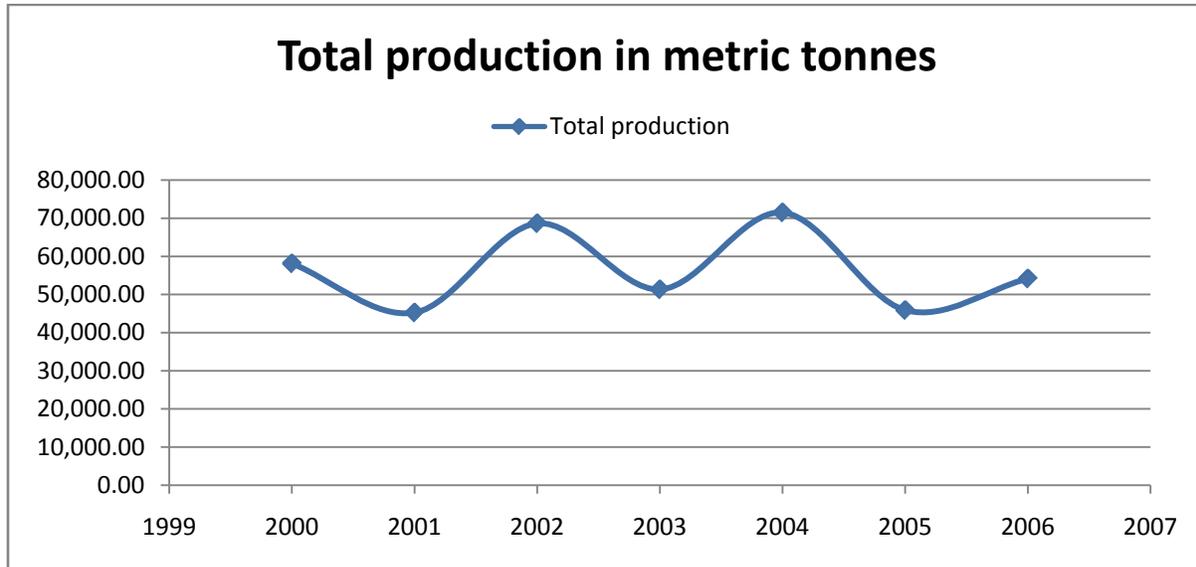
being planted, are kept free of weeds for three to four years, before they begin to bear. During this time, particularly under the garden system, other plants will be bedded in between the young shrubs. In well-tended plantations the shrubs will be pruned annually to remove superfluous shoots. In normal soil, the coffee plant gives its best yields during the first 20 years of its life. In the following 20 years, the quality of the cherries and the yield gradually decline.

In Ilu Aba Bor zone,197,102 hectar of land was covered by coffee plant. There are twenty woredas engaged in coffee production in the zone. Those woredas were categorized into three based on their production level: the well known woredas

are Didesa, Chora, Yayu, Hurumu, Doreny, Mettu, Bilonpha, Algesachi, Becho alle, and Nanno. The second ranks are Didu, Darimu, Beddele, Gechi and Allu. And the third levels are Bure, Doboana, Dega, Meko and Chewaka.

One hundred fifty nine thousand nine hundred ninety one (159,991) farmers and ten (10) investors are engaged in coffee farming in the zone. From the total hectares of lands permitted for investors to invest in coffee farming, only 43.57 percent were used (Source: Ilu Aba Bor zone agricultural office, 2014).

Figure 3: Coffee production in metric tonnes in the I/A/B zone(2008-20014 years)



Source: Iluababora zone agricultural office, 2006 E.C

As depicted on the figure 3, there is low total production by 2001 or 2009, 2003 or 2011 and 2005/2013 while 2002/2010 and 2004/2012 are a good production years.

➤ **Coffee Production and Constraints**

Virtually all Ethiopian coffee farmers never use fertilizers except on commercial farms. The Ministry of Agriculture (MOA) doesn't encourage the practice of applying fertilizer in coffee farmlands. Use of pesticides on coffee farms is also inadequate, that is, there are only a limited number of farmers who use pesticides despite the presence of Coffee Berry Disease (CBD), Coffee Wilt Disease (CWD), and root rot disease. In other words, there is high incidence of Coffee Berry Disease and shortage of improved cultivators.

Poor harvest and post-harvest practices have been reducing coffee quality, and there is a weak linkage between research, extension services and producers. Environmental degradation is a serious concern in the coffee growing areas of the south-western parts of Ethiopia, threatening its coffee genetic resources (Gole, 2003). Quality losses also occur in poor post-harvest on-farm processing, including weak storage infrastructure and contamination with other products. Handling during coffee harvesting and storing, processing and warehousing; inability to take care of the coffee plantation properly; inability to control the moisture content of the coffee and mixing high quality coffee with low quality. Lack of sufficient standard coffee processing machine in the major coffee producing areas due to lack of capacity and awareness, or sometimes improper installation of coffee processing machine, lack of proper place for coffee

processing, inadequate inspection and supervision of responsible bodies in the assembling, processing or preparation of coffee during harvesting. This may be due to negligence or lack of sufficient awareness. Lack of proper regulatory and controlling system on coffee harvesting, assembling, storing, transporting and processing activities; there is poor management and handling of coffee by farmers and lack of proper storage with adequate facilities.

➤ **Coffee Trading and constraints**

Primary coffee collectors, locally licensed coffee traders, purchase coffee from individual farmers and play an essential role of bringing coffee from very remote areas to the market. As they have no warehouses of their own, they immediately transfer the coffee to suppliers/wholesalers and 597 coffee suppliers were found in the Ilu Aba Bor administrative zone. Suppliers/wholesalers acquire red coffee cherries from collectors or producers and process their coffee before bringing it to auction. They are not allowed to export on their own account. Some have storage facilities as well as their own hullers. Primary societies made up of different local peasant associations play an important role in organizing farmers. Many cooperatives own washing stations and warehouses. Currently, there are 570 coffee traders, 24 coffee farmers' cooperative associations and three unions in the zone.

There is a delay in unloading coffee at Ethiopian Commodity exchange-which creates additional costs. There is also short supply of coffee or low economics of scale for traders.

➤ **Processing and constraints**

Wet Processing

Once the cherries are harvested, they are immediately pulped, fermented in tanks and then finally washed in clean water to remove the mucilage. By 2014 there were 67 coffee washing stations (1 owned by cooperative work associations, 1 by union, and 65 by private owners) in the study zone. Historically, over 90% of Ethiopian coffee was sun-dried. However, since washed coffee sells at significant premiums over sun-dried coffee, the government has encouraged cooperatives and traders to invest in machinery to raise the output of washed coffee.

Dry Processing

After harvesting, coffee cherries are processed by either dry or wet processing. For unwashed Arabica (or sun-dried coffee), the cherries are dried on mats, concrete, or cement floors immediately after they have been picked. After drying to a moisture content of about 11.5%, the outer layer of the cherries is removed by hulling and the green bean obtained is ready for marketing. Smallholder producers mainly use sun drying methods for coffee processing and a few use hand pulpers to semi-wash their coffee.

Besides, the following are some additional challenges faced by farmers, processors and middlemen. Here, coffee is dried on the ground due to the farmers' inability to construct drying beds because the costs of erecting them are too high. Many smallholder farmers do not own or have access to hand pulpers. The washing stations are also few and the average distances to nearest pulpers or washing station is roughly ten kilometres. This raises the transports costs and hinders immediate processing, a key requirement for wet processed coffee. High levels of river pollution are also a major problem near coffee pulping and washing stations.

➤ **Coffee Marketing and constraints**

In Ethiopia coffee marketing is between producers who sell to their cooperatives or to private traders.

All traders involved are licensed by the State to undertake certain functions.

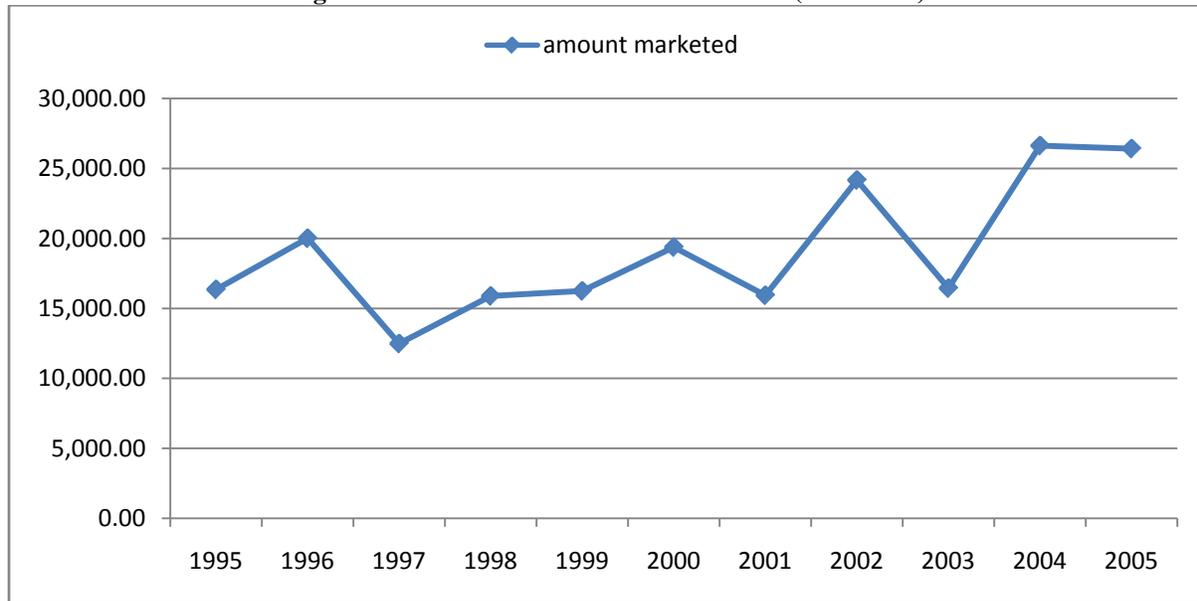
As such, the buyers (Sebsabies) may only buy directly from the farmers and may only sell on the coffee to the wholesalers (Akrabies). Akrabies for their part may only buy from the Sebsabies and then deliver the coffee for auction. They may not, however, export directly. Export is the privilege of a few special exporters with the corresponding licence. The cooperatives have become less relevant since the coffee crisis, as some of them are bankrupt and others do not possess sufficient capital to buy up larger quantities of coffee. After the breakdown of the coffee agreement they initially played an important role in fixing a minimum price. The private traders had to offer more than this price in order to buy the coffee. Today, since the cooperatives can no longer guarantee that they will buy up the harvest; private traders are in a position to demand lower prices.

Where possible, the farmers in Ethiopia prefer to sell the cherries for wet-processing as higher prices may be obtained. The sale of "fresh" cherries is, however, only possible during a short period during the harvest, when prices are low across the board. Dry cherries on the other hand may be sold all year round. Many farmers are, however, forced to sell their coffee directly after harvest, to get cash.

Financial pressure and a lack of information on market prices often allow the buyers to get the produce at low prices. Almost half of the small farmer's annual cash income comes from the sale of coffee and work directly related to it. The buyers in turn sell the coffee to the wholesalers, who bring the coffee to Addis Ababa, where the beans are examined by the state-run Coffee and Tea Authority and quality-approved. Samples of those coffees which are suitable for export are sent to the auction house, where they are tested and bid for by the exporters. Lower quality coffee goes to the domestic market.

Exporters themselves do not act as buyers and must be Ethiopian. Foreigners may neither bid at auction nor act directly as exporters. The exporters clean, sort and blend the coffee and prepare it for export. The coffee must be submitted again to the Coffee and Tea Authority which releases it for export after a final examination. For this, the coffee is packed in labelled standard 60 kg sacks. The exporters sell the coffee to international importers, who then sell the coffee on to the roasters in the destination countries. Ethiopian coffee goes predominantly to Japan (21%), Germany (20%), Saudi Arabia (14%), USA (8%) and France (6%).

Figure 4: I/A/Bora coffee marketed at ECX (2003-2013)



Source: Ilu AbaBor zone agricultural office, 2014

From the figure 4 it is observable that the coffee marketed at Ethiopian Commodity Exchange is increasing even if there is ups and downs in the coffee supply to ECX. Government of Ethiopia (GOE) established the Ethiopia commodity Exchange (ECX) to handle the marketing of agricultural commodities such as coffee, sesame, and beans. Almost all coffee is sold on the Ethiopian Commodity Exchange floor either directly through organized coffee producer's cooperatives or middle men. Ethiopian Commodity Exchange, a public market facilitating institution, was established in 2008. The rationale for establishing ECX was to eliminate the huge number of middlemen involved in coffee distribution and to enable coffee farmers to benefit from prevailing market prices. Coffee sold through Ethiopian Commodity Exchange is considered as commodity coffee and will not get the possible premiums of being organic coffee. Ethiopia mainly exports green beans with only a very small amount of roasted beans.

Ethiopian coffee, more than two-third is unwashed or sun dried while less than one-third is washed. Unwashed coffee commands a lower price than washed coffee. ECX undertake Coffee grading using a laboratory. Grading is conducted by analysing two aspects of the coffee bean: First, the raw green beans are visually evaluated for defects, and second ECX uses taste testers to identify sensory aspects of a roasted bean, including the aroma, taste, acidity, and other flavours.

V. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Zonal production volumes can be increased through new plantings and/or intensification (higher productivity) of coffee as the climatic conditions in the area is conducive. Corrective measures in improving coffee quality could increase the proportion of coffee selling at significant premiums. Particularly, sales volume of coffee can be enhanced if washed/semi-washed coffee or certified coffee beans presented

for market at different levels. Provision of credit facilities for purchase of washing stations/equipment would address current shortages of wet processing facilities that force farmers to walk long distances and thus discourage wet processing.

There is an increasing coffee production supply in the country and many actors in the supply chain. But, Ethiopia is very slow in expanding and diversifying (in quality and form) its coffee exports which is affected by world coffee price movements. There is less transparent and efficient operations in coffee marketing. Coffee quality problems due to handling from harvest to the final point of sale are still need solution. Almost all coffee exports are raw, there is little or no export of roasted coffee in Ethiopia that has additional value added, and is less promoted in the world market.

Recommendations

There is a need for coffee quality inspection and certification activities, and allowing and promoting private sector investors to participate in coffee plantations and processing. Promoting best agricultural practices in harvesting and post-harvesting will increase the availability, quality, and consistency of supply in Ethiopia in the short term. Trainings in low productivity areas will help farmers collect sufficient coffees to have leveraging negotiation power with collectors and traders, thereby capturing better prices along the value chain.

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