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The Role of Ethiopian Commodity Exchange (ECX) in Crop Value Chain Development in Ethiopia

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Abstract: This study intended to assess the role of Ethiopian Commodity Exchange (ECX) in crop value chain development with the aim of identifying agribusiness and Value Chain activities in ECX; identifying development intervention and its underlying impact and associated chain problems of ECX; identifying major value chain enterprises operating under ECX; and map the generic value chain for some selected commodities. ECX is Ethiopia's latest attempt to enhance the performance of agricultural markets. Conceived as a meeting point for buyers and sellers of grains and coffee, the ECX seeks to organize efficient and transparent market operations. Before the establishment of ECX, agricultural markets in Ethiopia had been characterized by high costs and high risks of transaction forcing much of Ethiopia in to global isolation. With only one third of output reaching the market, only buyers and sellers tended to trade only with those they knew, to avoid the risk of being cheated. ECX developed a new method of exchange; a marketing system that coordinates better, links faster, and protects of both side of the trade. ECX is a modern trading system based on standard crop contracts, establishes standard parameters for commodity grades, transaction, size, payment and delivery, and trading order matching, while at the same time, preserving the origins and types of crops as distinct unlike the previous. Quality certification is also another important issue in value chain in ECX which is based on a modification of the previous quality grading system, with a new crop classification based on classes, types and grades of the commodity. The role of the ECX has been to specifically address the ways suppliers and exporters transact, with more efficient and transparent ways of trading as the main outcome. Despite the engagements of ECX have positive impact on the existing marketing system and for the development of agricultural value chains in Ethiopia, through creating a more reliable way to connect buyers and sellers in an efficient way to discover market prices, a way to level the playing platform by providing market information to all, there are still problems which are faced by all actors in value chain as infrastructural problems, legality problem, exploitation of farmers at the farm gate, marketing imperfections, systematic rigidity and traceability issue. In this regard, the study suggest ECX to develop strategies benefiting smallholder farmers in particular, facilitating financial and other logistics, promoting traceability in trading system for the private traders, creating regulatory platform for controlling the illegal traders operating in the system and capacitating the cooperative unions in the value chain.

Keywords: ECX, Value Chain, Traceability, Sesame, Coffee

1. Introduction

1.1. Background Information

Ethiopian Commodity Exchange (ECX), established in 2008, is a new initiative for Ethiopia and the first of its kind in Africa. It is a trading platform where buyers and sellers come together to trade, assure quality delivery and payment.

ECX is a state owned public –private partnership enterprise established as a demutualized corporate entity with clear separation of ownership, membership and management and governed by a Board of Directors constituted by relevant public institutions and ECX private members operating

through the sale of membership seats, which are privately owned by wholesalers, cooperatives, exporters, processors and food agencies [1]. It is Ethiopia's latest attempt to enhance the performance of agricultural markets. Conceived as a meeting point for buyers and sellers of grains (sesame, haricot beans, maize, and wheat) and coffee, ECX seeks to organise efficient and transparent market operations and thus contribute in solving the country's longstanding problem of starvation [2]. Before ECX was established, agricultural markets in Ethiopia had been characterized by high costs and high risks of transaction forcing much of Ethiopia in to global isolation. With only one third of output reaching the market, only buyers and sellers tended to trade only with those having close information, to avoid the risk of being cheated. This is done on the basis of visual inspection because there was no assurance of product quality or quantity, this drove up market costs leading to high customer prices. Small-scale farmers who produce around 95% of Ethiopia's output came to the market with little information and are at the mercy of merchants in the nearest and only to the market they know; unable to negotiate better prices or reduce their market risk.

ECX is developing a new method of exchange/marketing system that coordinates better, links faster, and protects of both side of the trade. The exchange is unique partnership of market actors, members of the exchange, and its main promoter, the government of Ethiopia, where buyers and sellers come together to trade, assured of quality, delivery and payment. ECX represents the future of Ethiopia by bringing integrity, security, and efficiency to the market there by creating opportunities for unparalleled growth in the commodity sector and linked industries such as transport and logistics, banking and financial services, and others. Its mission is to provide a modern efficient, transparent and reliable market platform to serve the national development goals through adaptation of technology excellence in innovation and integrity. Important values in ECX are to create market integrity between product, actor, and transaction, build balance between all actors, create modernization, and market transformation. The vision of ECX is to become a leading and dynamic exchange in Africa and to revolutionize Ethiopia's tradition bound agriculture.

1.2. The Development Intervention of ECX

Agricultural marketing in Ethiopia has undergone several transformations over the decades. Recent initiatives to increase values and benefits to the agricultural sector include fair trade certification by cooperatives, organic and specialty crop promotion and the trade marking and licensing initiatives that have successfully established international branding. It aims to provide trading ground for sesame haircot beans, maize, wheat and coffee. The ECX is supposed to mainly guarantee: (1) market integrity: guaranteeing the product grade and quality and operating a system of daily clearing and settling of contracts (2) efficient coordination of buyers-sellers and standardized contracts (3) market transparency: disseminating market information in right time

to all markets players and (4) managed risks [3].

1.3. Main Activities of the Organization

Ethiopian commodity exchange (ECX) is a modern trading system based on standard crop contracts, establishes standard parameters for commodity grades, transaction, size, payment and delivery, and trading order matching, while at the same time, preserving the origins and types of crops as distinct unlike the previous. The existing auction trading system in the document is to mean the marketing system before the establishment of the ECX. By now the existing trading system is the one which currently works in ECX. Quality control is undertaken in liquoring and inspection units located in the major crop producing areas and the crop is then weighted and inventoried in ECX operated warehouses. Trade is thus on the basis of warehouse receipts issued to the depositor rather than on sample basis. ECX manages a central depository of electronic warehouse receipts, removing the risks of paper loss or fraud.

ECX quality certification is based on a modification of the existing quality grading system, with a new crop classification based on classes, types and grades of the commodity. Currently ECX has over 20 warehouse branches at different regions; namely Hawassa, Dilla, Wolyita Sodo, Gimbi, Asossa, Nekemte, Adama, Gonder, Dansha, Metema, Hummera, Abirhajira, Shiraro, Dire Dawa, Kombolcha, Bedelle, Bonga, Jimma, Bure, and Pawi. The major roles of these warehouses are arrival, sampling, coding and decoding, grading, weighing, deposit, reconciliation, and reporting. For the transaction to be applied at the exchange, primary depositors should bring their commodity to their nearby branch so that the load shall be sampled, graded and weighted. Trade/price is determined based on the information given on the grade, the weight and the location of inventory.

1.4. Agribusiness and Value Chain Activities in ECX

The ECX was started to benefit and modernize the way Ethiopia was trading its most valuable asset, its commodities. Agricultural marketing in Ethiopia had undergone several transformations over the decades. Smallholder farmers sell agricultural commodities to local merchants who intern sell to distributors and collectors; and collectors sell to suppliers who export through the ECX. Cooperative unions sell directly through ECX and capture margin that would otherwise be captured by merchants and collectors. Prior to listing on the exchange, producers must submit crops to the inspection centre for grading and consolidation through warehouses. The Ethiopia commodity Exchange (ECX) has contributed to the functioning of the value chain, with an indication that farmers are in general more satisfied at the services provided by the ECX, such as in moisture and quantity testing, transaction and assessment. Besides, farmers are also benefited from accessing market information displayed on the price ticker board in their locality. Within the international context of coffee trade, for example, quality comes high in the requirements. The importance of an

integrated supply chain that builds close links between client and the exporting company, in turn are closely in touch with the producers. Ethiopian farmers are now required to sell their coffee at designated primary markets where only certified buyers are allowed to make purchases. Similarly, coffee processors must receive approval to use designated warehouses, where their product is graded for either export or sale on the domestic market.

1.5. ECX Linkage with other Organizations

ECX has strong linkage with other organizations which are very essential for the work/service provided by ECX.

- (1) ECX Authority: these are the legal responsible body controlling ECX based on the rules.
- (2) Coffee and Tea Development Authority: These are governmental body works on quality and productivity of coffee and tea.
- (3) Woreda Agricultural Offices: The Woreda agricultural office is responsible for the registration and identification of the owner of the commodity.
- (4) Banks: ECX works with over 11 international banks.

2. Objective

The general objective of this case study was to identify the major value chain enterprises operating under ECX and map their respective generic commodity value chain. Specifically this case study intended to (1) identify the generic value chain map, major actors and describe the value adding functions for major selected crops operating under ECX (2) undertake a SWOT analysis for and identify the role of ECX along the respective value chain (3) identify the major challenges and opportunities of actors along the respective value chain.

3. Methodology

3.1. Data Types

The authors studied the case with the help of the supervisor assumed to provide general introduction and orientation about the organization and the working environment, to provide directions to start the work, to follow-up all series of activities, to provide some secondary data, and to arrange some trips/visits to other departments/offices. Both qualitative and quantitative data types were collected.

3.2. Sources and Method of Data Collection

The research methods employed were mainly qualitative, such as semi-structured interviews. Observing the auction system, attending trading activities and visiting the warehouse outside the central office were the major, but not limited to, observations done. The Ethiopian commodity exchange has one head office and more than 20 regional warehouses. One central warehouse located in Addis Ababa was visited for two weeks. Checklists and incidental oral

discussions and interview were used to collect primary data from organizational staffs, and some traders trading under ECX. In doing so, valuable ideas reflected from the respective discussions and interviews were gathered accordingly. Besides, data were collected through frequent observations while attending the overall trading activities and some intra and inter organizational visits. On the other hand, secondary data of both qualitative and quantitative types were gathered through thorough reviewing and examining of organizational profile and staffing documents containing detail explanation of the organization, reports as well as records of published and unpublished documents found in the organization and from the internet.

4. Result and Discussions

4.1. Agribusiness and Value Chain Activities Carried Out by ECX

The case study tried to identify ECX's major services provided for efficient and effective agricultural marketing services as warehouse service, laboratory test, grading, trading platform/auction service, provision of communication links; and market related training services for agents. Once commodities are graded by experts in ECX, it is stored in ECX warehouse to prevent tampering; then bid on and sold to exporters.

All commodities/products that enter the ECX are given a grade and a geographical designation. Even cooperative products, not passing through the ECX, end up with a grade and a geographical code. Grading is also handled by ECX using a well-established laboratory. Grades are based on physical inspection of lots and on cupping. For example, for the commodity coffee, first, the raw green beans are visually evaluated for defects (physical screening of defected coffee grain), and second, ECX uses coffee quality testers to identify sensory aspects of a roasted bean, including the aroma, taste, acidity, and other flavours before grading.

ECX also provides a kind of transparent marketing platforms where the marketing agents are fairly and transparently negotiate and exchange in the floor. ECX bidding system is two types: an 'open cry out' system where sellers and buyers meet on an open trading floor to negotiate and finalize the sales deals and the currently stated 'electronic bidding' system where both buyers and sellers themselves (or with their agents) bid and fix price through the electronic computer. Providing communication links and training services related with the marketing for agents

4.1.1. Coffee Value Chain along ECX

Coffee is in charge for the livelihoods of an estimated of 1.3 million producers and 15 million people of producers, wage workers, transporters and their families along the coffee value chain [4]. ECX has over 450 registered buyers/exporters that are members of the exchange with licenses to bid for and export coffee. Unlike other producing countries in the region, Ethiopia does not allow multinational companies (MNCs) to register as exporters. The reference [5]

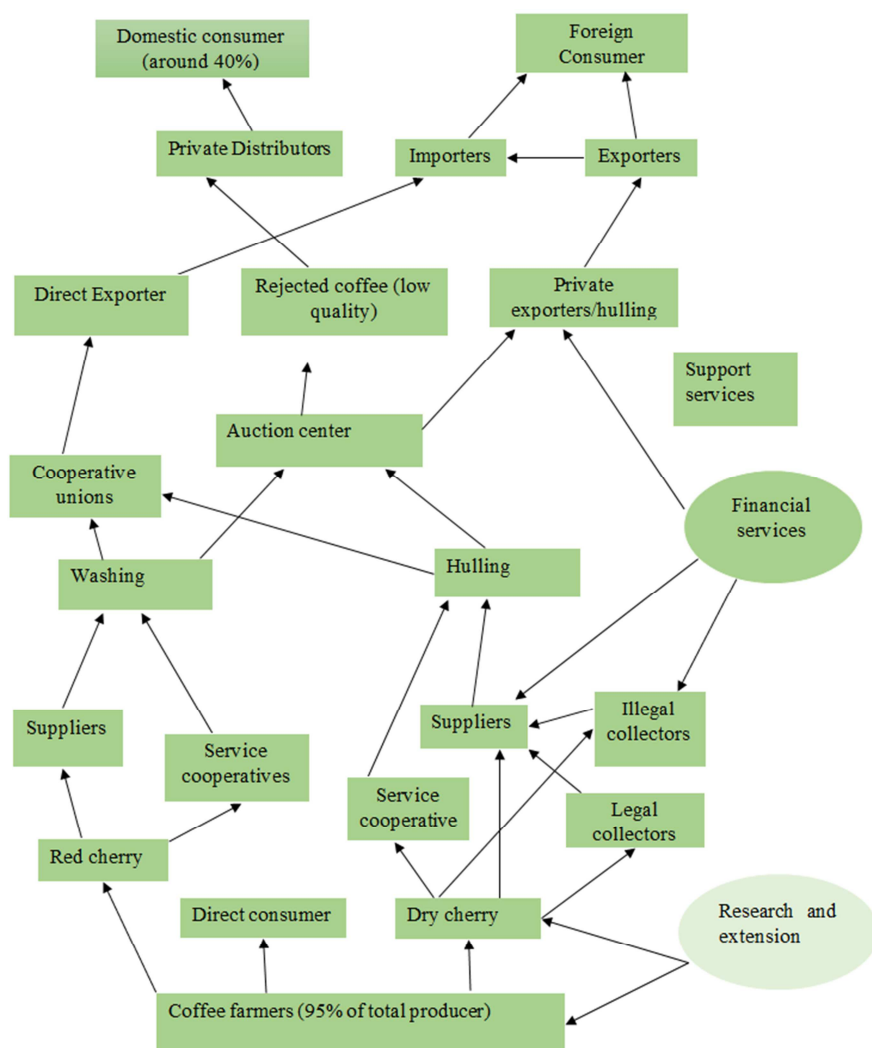
suggested that as a result of the absence of MNCs competition at the auction level, the industry is much more locally controlled than elsewhere in Africa. The government goal is to standardize coffee by region (Harar, Sidamo) and grade (1-9) than regionally or locally specialized producer. This enables buyers to source a standard region at a standard grade, and trade for a set price on the ECX. According to [6] there are generally two paths in the Ethiopian coffee marketing chain: one through Ethiopian commodity exchange (ECX); and other a direct export path through cooperative unions and it is directly exported to different countries in the world.

4.1.2. Sesame Value Chain along ECX

Oil crops are the second largest source of foreign exchange earnings after coffee [7] and are the main oilseed crop in terms of production value. Sesame is one of major oil crops traded under the platform of ECX. Ethiopia was considered the second main exporter of sesame seeds in the world, behind India. The cultivation of sesame has owing to its high value on the export market and good adaptability in the country. The many varieties of Ethiopian sesame seeds make

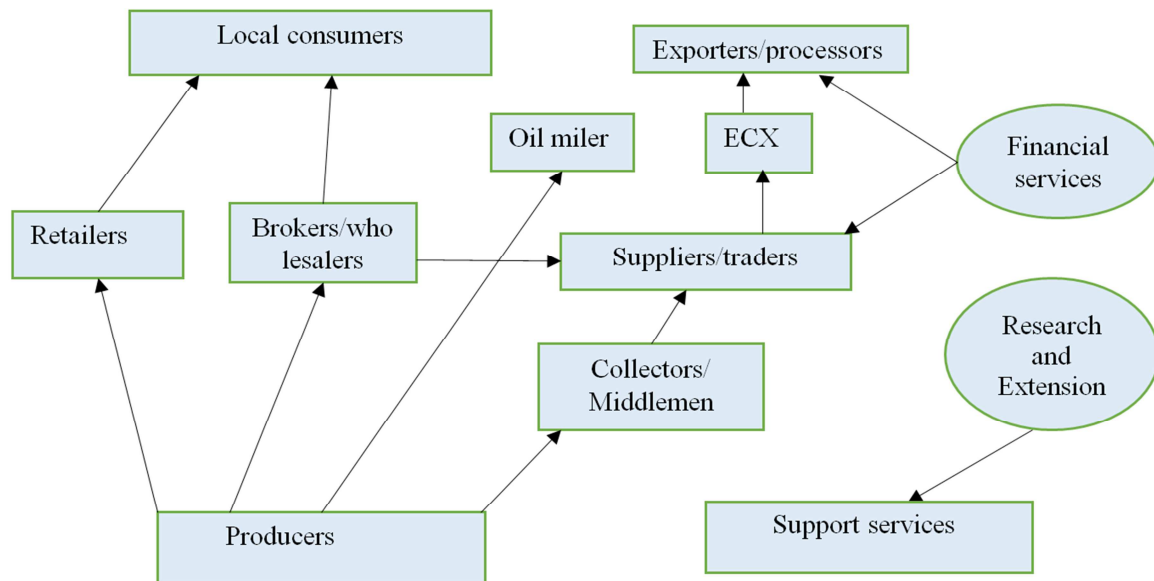
it suitable for a wide range of applications, either as seeds or oil products. The sesame value chain in Ethiopia is poorly organized, although it is currently under reform since the introduction of the new market auction system (ECX). The study identified that the main actors under the sesame value chain are producers/suppliers, collector, wholesalers, brokers, farmer associations, the auction market (ECX) and exporters. Other important service providers and/or influencer are transporters, agricultural input suppliers, consumers and retailers.

Constraints identified along sesame value chain include lack of improved cultivars, poor seed supply systems poor agricultural production techniques and post-harvest crop management. From different possible sesame chain the most common trend is farmers sell their product to the primary market where all the sesame is bulked. In almost Kebele, a primary market has been allocated where legal trade may take place from the primary market until the sesame goes to the ECX, the place where the sesame is graded in to different quality groups (1-5) from the ECX the graded sesame goes to the export traders, who sell to the international market [8].



Source: Authors sketch based on preliminary information from ECX

Figure 1. Generic coffee value chain map in Ethiopia until 2017.



Source: Authors sketch based on preliminary information from ECX

Figure 2. Generic sesame value chain map.

4.2. Beneficiaries of the Chain

The study also identified major beneficiaries for the agricultural products value chain trading through the ECX. For suppliers and especially for smallholders, ECX create improved earning, improved productivity and premium for better quality supplies, by improved market information and access to finance. Exporters assured quality through industry acceptable standards, reliable supply, and improve international market share. Bankers increase customers' base, earning and transaction turn over, foreign exchange, earning and technology transfer. Government improved regulation, tax administration, and increased foreign exchange earnings. Clients (non-member producer and supplier and suppliers) also gain access to market, reliable payment and delivery without direct membership. Generally, all actors in the chain are becoming beneficiary mainly by technology transfer, experience sharing and business reporting.

4.3. Impact of ECX Interventions and its Associated Chain Problems

Even though those agribusiness and value chain activities undertaken ECX have impact along the whole value chain, its respective impact on smallholder farmers was given attention under this case study. ECX gives farmers power and participation for better able to negotiate price with market transparency; quality controlling advisor services during post-harvest handling. Farmers are not restricted or captive to local market and farmers can use future prices by planning and decision for risk management.

Despite ECX's role in creating a more reliable way to connect buyers and sellers in an efficient way to discover market prices, a way to level the playing field by providing market information to all (transparency), and a way to incentivize better quality and to eliminate contact risk, there

are still problems which are faced by all actors in the chain. Constraints in the value chain include lack of improved cultivars, poor seed supply system, poor agricultural production techniques and postharvest crop management [10]; weak farmers' organizations to engage in the value chain, poor market information system, limited financial material and skills for processing, limited use of traditional agricultural inputs and little research support to increase yields, and erratic rainfall [11]. There is still a problem of high contact default, unreliable supply, volatile price, poor quality, unregulated actors, unreliable trading parameter, uncoordinated market, high cost and risks, and also poor information. The study tried to identify the following major problems as:

- (1) Infrastructural problem: Although ECX is intended as an innovative institution tailored to the particular requirements of the Ethiopian agricultural commodities, the country's deficiencies in terms of infrastructure, access to technology and finance and technical services pose significant challenges to its ability to really transform the country's agricultural markets.
- (2) Legality issue: The new exchange created a great deal of tension during its first year of operations, particularly between the government and private exporters, some of which even had their exporting licenses suspended for suspicions of hoarding commodities [9].
- (3) Exploitation of farmers at the farm gate: Private traders were not interested in disclosing information. Lack of information and transparency problem between farmers and traders had adversely affected smallholder farmers. This kind of exploitation from traders by hiding market information was the prevailing chain problems among the other.
- (4) Marketing imperfections: Before the establishment of

ECX, the effects of market distortions created by private exporters were highly affected the marketing system and sustained in some extent. According to [5], it was becoming an increasingly common practice among private exporters to register as suppliers through sister companies ensuring the possibility of reacquiring their own products by bidding higher price which increases the risk of marketing the chain non-competitive.

- (5) System rigidity: The rigidity of the auction and export processes including the inability of buyers to test the quality of the product (especially coffee) in advance of sales again creating a higher quality export coffee beans (as an example) has created an illicit market that yields higher profit than exporting, albeit in local currency, is also another challenge ECX facing.
- (6) Traceability issue: Originally the ECX started operating for easily standardised goods (like the commodity coffee) for instance is that of guaranteeing coffee differentiation and traceability or speciality, fair trade and organic markets, which is lost once coffee is deposited in the ECX warehouses and graded according to regional types and quality. This is the current new platform created by the ECX through which producers of specialty coffee are supposed to transact directly with international buyers. However, traceability, which is becoming increasingly important for different commodities especially for organic coffee is not still feasible for the private traders in the present ECX auction system. The new system allows for differentiation between products coming from different regions but not from individual producers or farms which is the basic requirement in international markets, which offer higher price premiums. Only cooperative unions are able to offer full traceability; and Ethiopia's specialty market share is only 20% compared to Kenya's 40% (the highest in Africa), Guatemala's 60% in terms of specially volume (ECX, 2010b). However, estimates suggested that Ethiopia has the potential to increase its specialty coffee production to two third of total production, or even 80% of production adding organic or rainforest certified coffee (bid).

4.4. Upgrading Decisions in the Chain

Effective vertical linkages between actors at different levels of the value chain play a key role in supporting the upgrading capacity of the chain. Rapid response to changing market conditions requires on-going

communication and cooperation both up and down the chain. When vertically linked actors are willing and able to share information on new technologies, then the value chain as a whole is more competitive because it can adapt more rapidly to changing market condition. In other ways, effective vertical relationships can contribute to decision in the chain competitiveness by creating conditions that support risk-taking and investment. Example of this can be found in coffee and grain value chain, where it is common for smallholder farmers-suppliers-consumers both up and down the chain. Through horizontal linkages, actors at the same level of the chain interact to accomplish what a single actor working independently could not do so well. This interaction may come in the form of either cooperation or competition (or both). Effective horizontal relationships can promote efficiencies, reduce costs, open markets and spur beneficial competition. A producer association is a classic example of horizontal relationships designed to promote economies of scale, favourable market pricing and other benefits for its members. Effective model of cooperation among smallholder farmers are needed in order for large number of these very small farmers to be integrated in to competitive value chain. This makes it possible for small-scale producer to reduce the costs of inputs and supporting services (e.g, training or transportation), while gaining access to new buyers and better prices.

The new ECX regulation introduces important changes in terms of the processes for quality control and product transaction. First, quality control procedures are enhanced by adding a pre-inspection at the locality of production and an official grading at a regional quality and liquoring unit (according to the agro-ecology of the production area). Second, the lawful places for the transactions to take place and the duties and obligations of the different types of actors are specified (such as having the necessary capital and facilities to operate a given capacity). In this regard, the figure of the collector, formerly recognised as an independent actor operating between the producer and the supplier, is eliminated and collection is ascribed to suppliers. Third, a warehousing system is setup where products are stored until sold at the ECX.

On the other hand, certain regulations remain unchanged, such as the need to obtain a quality certification prior to export and the prohibition to sell export-quality commodities (especially coffee) in the domestic market. Above all, strict government regulation remains a means not only to ensure quality but also to guarantee the timely collection of foreign currency from the export of agricultural commodities/products.

4.5. Result of SWOT Analysis for ECX

Table 1. Result of SWOT analysis.

SWOT components	Descriptions
Strength (S)	<p>ECX is a well functioned organization.</p> <p>ECX revolutionize Ethiopian traditional bound marketing system to a modern one.</p> <p>It bringing integrity, security and efficiency to the market.</p> <p>ECX creates more reliable way to connect buyers and sellers in the market.</p> <p>ECX is an efficient way to discover market price.</p> <p>ECX's centralized market location provided enough information to integrate domestic and international markets reasonably.</p> <p>ECX has had no significant impact on the spatial integration of coffee markets and that there has been no significant change in the extent to which price volatility gets transmitted from international to domestic market.</p>
Weakness (W)	<p>The strict regulations that ECX has introduce in to the country's coffee markets have resulted in higher transaction costs.</p> <p>These costs could potentially cancel out the benefits of some of the ECX innovations, such as electronic payment system.</p> <p>The rigidity of the auction and export processes including the inability of buyers to taste the products traded.</p> <p>Traceability is not also feasible for private traders in the present ECX auction system.</p> <p>ECX couldn't capacitate farmers to become direct traders at the ECX; at most, smallholder farmers are represented by member cooperative unions.</p>
Opportunity (O)	<p>ECX is a new initiative for Ethiopia and the first of its kind in Africa.</p> <p>The ECX is unique partnership of market actors, the members of the exchange, and its main promoter of the Ethiopian government.</p> <p>It is the only auction centre.</p> <p>ECX has a commitment to free market principle and a more reliable way to connect buyers and seller in the market.</p> <p>Has an efficient way to discover market prices in a way to eliminate contact risk.</p>
Threat (W)	<p>Lack of infrastructures</p> <p>International competitive market</p> <p>Problem of illegal trading (contraband) activities</p> <p>Local consumer demand for the higher quality export products has created an illicit market that yields higher profits than exporting</p>

5. Conclusion

The study assessed the role of ECX in the context of agricultural value chain. ECX is a new initiative for Ethiopia and is the market place where buyers and sellers come together to trade, assure quality delivery and payment. The role of the ECX has been to specifically address the ways suppliers and exporters transact, with more efficient and transparent ways of trading as the main outcome. Improving access to information and thus strengthening the bargaining power of smallholder farmers has come almost as a trickle-down effect gradually benefitting the remaining value chain actors. Issues like improving farmers' agricultural practices, working capital, access to finance, organisational capacities, as well as improving the massive deficiencies in public infrastructure, are widely recognised as necessary elements for promoting a more favourable participation in markets and depend on a variety of actors. The engagements of ECX have impact on smallholder farmers. It gives power and participation, the new ECX regulation introduce important changes in terms of the processes for quality control and product transaction. Even though ECX create a more reliable way to connect buyers and sellers in an efficient way to discover market prices, a way to level the playing platform by providing market information to all, there are still problems which are faced by all actors in value chain. Such as infrastructural problems, legality problem, exploitation of farmers at the farm gate, marketing imperfections, systematic rigidity and traceability issue.

It is finally recommend that ECX to increase the warehouse receipt systems both in the center and regional warehouses. ECX should establish regulatory framework

able to avoid the problem of illegal trading (contraband) activities. Effective model of cooperation among smallholder farmers are needed in order for large number of these very small farmers to be integrated in to competitive value chain. ECX auction system should be encouraged to continue promoting cooperative unions to sells top-quality coffees through a special DST auction platform maintaining the traceability of the lots of coffee. So far, very little coffee has been sold this way, but it is an option which may grow more in the future. Besides, ECX should make feasible the traceability issue for the private traders in the ECX auction system. It is also recommended that improving conditions for poor farmers requires actions by ECX that start to offset the historical power relations between chain actors. The study suggested that in order for this framers should be represented to directly involve in the trading activities besides being only by cooperative unions. For this trading membership seat cost should be affordable in particular to the smallholder farmers.

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