

Creating Agricultural Markets: How the Ethiopia Commodity Exchange Connects Farmers and Buyers through Partnership and Technology

Commodity exchanges can provide emerging market economies with orderly, transparent, and efficient markets by acting as mechanisms that mitigate price risk, discover equilibrium prices, and connect buyers and sellers. Exchanges can also reduce transaction costs and information asymmetries by using technology to disseminate market information while creating better supply chains. The Ethiopia Commodity Exchange is striving to transform Ethiopia's agriculture sector from a fragmented one marked by high transaction costs and low quality standards to a thriving and reliable part of the country's economy. Ethiopia's exchange continues to expand its activity across the farming regions of the country.

Commodity trading has existed for hundreds of years. The first commodity exchanges were in Asia where Japan established an exchange for rice in Osaka in the 17th century and traded with futures contracts as early as 1697, almost two centuries before they were used in the United States in 1867.¹ Ethiopia now joins the ranks of these nations with its Addis Ababa-based Ethiopia Commodity Exchange, or ECX, launched in 2008 with the goal of transforming the country's agricultural sector.

The purpose of commodity exchanges

Commodity exchanges are organized market venues where buyers and sellers of a commodity meet to trade it or its derivatives. They are designed to help mitigate counterparty risk and ensure that payments are made through reliable financial service providers. Exchanges provide a framework for market actors, financial institutions, and commodity operators to interact based on rules that provide legal protections.

Exchanges further reduce information asymmetry. This encourages competition among buyers and sellers by allowing them to discover the real value of commodities in the market.

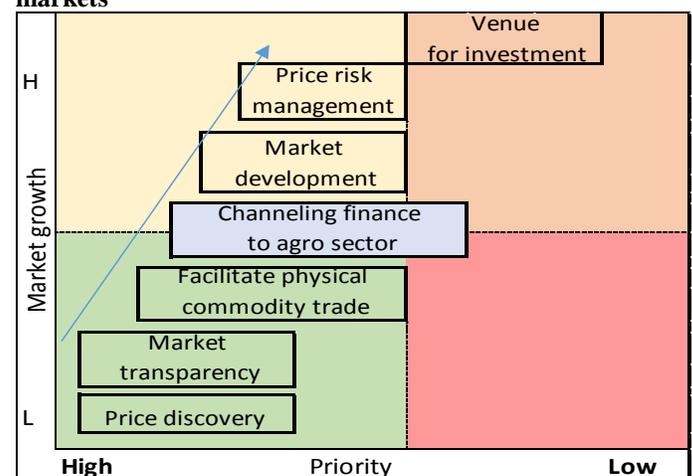
Commodity exchanges in emerging markets typically trade with spot contracts that offer immediate delivery of the traded good, while those in more advanced economies tend to trade in futures and options contracts.

Commodity exchanges are adaptable and can remedy several risk factors in emerging markets, including price risks, poor price discovery, and a lack of market transparency (Figure 1).

"If properly organized, a whole array of other problems, including problems with finding buyers or sellers, quality problems, difficulties in obtaining credit, and counterparty risks" can be solved through exchanges.²

These exchanges further support the warehousing, transportation, quality accreditation, financial services, and telecom and insurance sectors, allowing them to flourish.

Figure 1. Benefits of commodity exchanges to emerging markets



Source: Based on UNCTAD Report, *Development Impact of Commodity Exchanges in EM*, 2009

The Ethiopia commodity exchange market

Ethiopia’s exchange was formed to overhaul the country’s agriculture sector and create a dynamic, forward-looking, and efficient agricultural market system.³ The first modern commodity exchange in Sub-Saharan Africa outside South Africa and a pioneer for Rwanda’s East Africa Exchange, it now connects 3.5 million Ethiopian smallholder farmers to markets.⁴

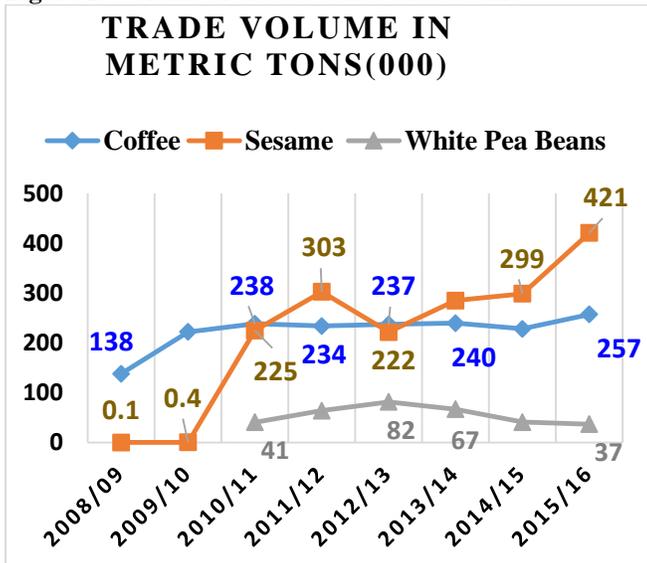
Similar to those in most emerging markets, Ethiopia’s exchange was launched with an open outcry system which deployed spot contracts for three staple foods—maize, wheat, and haricot beans—with one satellite delivery center and two partner commercial banks.

Before its launch, Ethiopia’s agriculture sector was fragmented and suffered from high transaction costs, equally high contract default rates, a lack of quality standards, and an unreliable commodity supply.

Weak infrastructure in terms of electricity, roads, telecommunications, financial services, and warehouses, along with an absence of necessary market infrastructures, including reliable and timely market information, standards, and reliable ways to connect buyers and sellers, all hampered the exchange’s initial progress.⁵

In the eight years since its inception, the exchange has evolved to handle larger trade volumes (Figure 2). The volume of coffee and sesame traded has grown from 138,000 metric tons in 2008-2009 to 715,000 metric tons in 2015-2016.

Figure 2. Volume of traded coffee and sesame

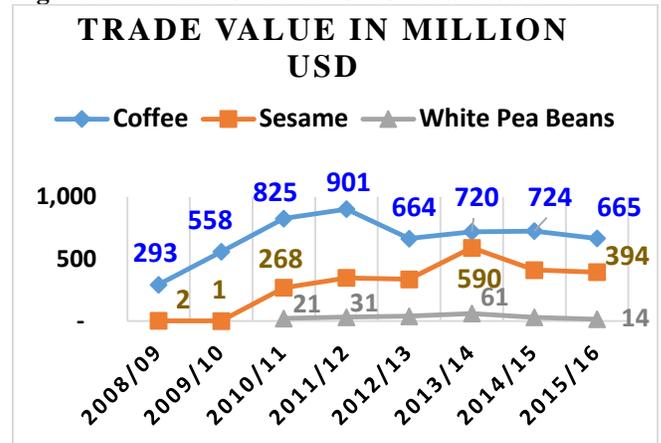


Source: Ethiopia Commodity Exchange Strategy Planning Unit Report, 2016.

As depicted in Figure 3, Ethiopia’s commodity exchange trade value of coffee and sesame have remained buoyant—about 10 billion Ethiopian birr (equivalent to \$440 million) in the first

half of 2017 alone. Other traded commodities include green mung beans, red kidney beans, wheat, and maize.

Figure 3. Transaction value for coffee and sesame



Source: Ethiopia Commodity Exchange Strategy Planning Unit Report, 2016.

Ethiopia’s exchange was positioned to function as an end-to-end service for commodity warehousing, quality control, trading, clearing, and market data dissemination. Its indigenous all-in-one model gave it the functions of an exchange, quality certifier, warehouse operator, and clearinghouse.

However, in order to advance the service provision, this model was replaced in 2016 by a system placing the warehouse and quality control operations and the central depository functions under the Ethiopian Agricultural Commodities Warehousing Service Enterprise, a separate business entity. A regulatory body, the Ethiopian Commodity Exchange Authority, was also established to oversee the overall operation of the exchange as well as its external operators.

A lack of awareness about structured markets was a daunting hurdle in the initial stage of the exchange’s implementation. The exchange has successfully marketed itself through intensive campaigns and the training of farmers.

The partnership

Ethiopia’s exchange is a commercial non-profit entity established as a public-private partnership. Unprecedentedly, it is jointly governed by private and public sector members of its Board of Directors, with five of the eleven board members from the private sector.⁶ Major decisions such as adjusting fees, reinvesting net profits, appointing chief executive officers, and approving and amending exchange rules require a two-thirds majority vote.

The exchange is demutualized, however, with ownership (represented by the public sector) separated from membership and management. Memberships are classed into ordinary (trading and intermediary) membership, which entitles the member to a permanent seat on the exchange, and special (limited trading and intermediary) membership, which is valid

for a year. Permanent membership seats are sold at auction and cost \$75,000 per seat on average,⁷ giving the member the right to trade commodities on the exchange.

In total, Ethiopia's exchange has 346 members, including 33 farm cooperatives, of which 7 percent are trading members.⁸ Ordinary members have the right to govern the exchange by being elected as a representative to the Board of Directors.

Members are expected to produce an audited financial statement that satisfies the minimum net worth requirement according to their membership class. To actively trade in the exchange, members (either a person or a business) must secure recognition as 'exchange actors' from the Ethiopian Commodity Exchange Authority.

A technology-driven exchange

Ethiopia's technologically advanced exchange offers trades based on an electronic warehouse receipt system that links data from warehouse operations, clearing and settlement, and market-information onto one platform. The system also has a warehouse receipt financing component to provide short-term working capital loans to small-scale traders.

The exchange also provides a fully secured clearing and settlement service and central depository that are electronically linked to eleven commercial banks and a warehouse operator, which in turn is linked to a network of warehouses across the country.

These connected warehouses reduce price dispersion among regions and transaction costs for regional farmers.⁹ The exchange's secured payment system is digitally linked to the warehouse operator, financial institutions, tax administration agency, and more than 16,000 traders.

The exchange settles transactions of more than \$10 million per day with settlements made the following business day. Similarly, the exchange's clearinghouse has cleared more than \$6 billion worth of transactions so far without default.

Market participants in Ethiopia now have access to reliable market data through various sources provided by the exchange, including a mobile push service that delivers up-to-date daily market information to farmers and agro-processors via text message and interactive voice response services offered in Amharic, Oromoiffa, Tigrigna, and English.

As a result, small-scale farmers receive 70 percent of the final price of a trade, up from 38 percent prior to the establishment of the exchange.¹⁰

The exchange continues to innovate. In July 2015, with the help of a \$2.2 million grant from the Investment Climate Facility for Africa, it introduced a \$3.8 million electronic trading platform to replace the original open outcry system. This created the capacity to execute significantly more transactions than the former system, with greater speed and data capture display

functions, and the ability to cater to far more participants.¹¹ The majority of the exchange's trades are now made electronically.

Ethiopia's exchange is also expanding its activities throughout the country's major agriculture producing areas. The goal is to open more trading centers in order to increase liquidity and accessibility to both commercial and smallholder farmers. The exchange's second trading center, built in Hawassa, will begin operations by the end of 2017.



Ethiopia Commodity Exchange (ECX) Addis Ababa, Ethiopia

Integrating traceability into the exchange

Since its launch, Ethiopia's exchange has traded more than 3.9 million metric tons of agricultural commodities. However, only a fraction of these commodities were traced to their source using a traceability system.

Food regulations in Europe and the United States require traceability of commodities along the agricultural value chain, as part of international requirements to meet health and safety standards. The European Union General Food Law, for example, mandates that all food and feed producers and operators have a traceability system.¹²

Growing concern about a lack of traceability, particularly for coffee, prompted Ethiopia's exchange to initiate a traceability project on export-oriented commodities, including coffee and sesame, in 2013.

Two years later the exchange officially launched its cloud-based IBM-enabled national traceability system, which runs jointly with the warehouse operator Ethiopian Agricultural Commodities Warehousing Service Enterprise. The \$4.5 million program, implemented in collaboration with the United States Agency for International Development, was designed to function with a bar code system to track commodity trades.¹³

The agriculture sector is now required to disclose data on quality, health and safety standards, as well as the movement of commodities along the supply chain, from the processing unit to the shelf. Businesses associated with the agriculture sector, including commodity suppliers and warehouse operators, greatly benefit from the tracking, which helps detect embezzlement and fraud as well as poor quality products, and also helps warehouse operators optimize storage space.

The traceability process (Figure 4): Bags of commodities traded on the exchange are tagged with geo-referencing to washing and hulling stations or aggregation points throughout Ethiopia's agricultural regions. The bag-tagging system provides the commodity exchange with continuous real-time data analytics. It is also capable of learning and predicting the quality of commodities based on domestic growth and processing

conditions.¹⁴ Bags containing close to 27,000 metric tons of coffee have been tagged and traded by the exchange so far.¹⁵

Still at the pilot stage with only two locations, Ethiopia's traceability project—designed to satisfy trading partners' rules-of-origin requirements—is expected to become a full-scale operation for both coffee and sesame commodities within the next few years.¹⁶

Figure 4. Traceability process flow



Source: Traceability project 2014; EACWSE = Ethiopian Agricultural Commodities Warehousing Service Enterprise.

Conclusion

An efficient and reliable commodities exchange system can provide producers and agribusinesses in emerging markets with a competitive edge.

The implementation of information technology in exchanges can have a transformational effect for emerging markets, delivering transparency, access to market data, and the ability to trace and determine the quality of products. It plays a crucial role in creating and promoting fair and orderly markets and mitigating price risks.

Exchanges can also bring broad-based economic benefits, stimulating growth while linking smallholder farmers, financial institutions, and communications technology.

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