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**“Challenges and Prospects of Commodity Exchange in Ethiopia. In the case of
Ethiopian Commodity Exchange (ECX)”**

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Declaration

I the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university, and that all source of material used for the thesis have been duly acknowledged.

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Abbreviations and Acronyms

ACE	Area Cooperative Enterprise
AMC	Agricultural Marketing Corporation
ECX	Ethiopian commodity exchange
ECEA	Ethiopian commodity exchange Authority
GHA/EA	Greater Horn Africa/ East Africa
UNCTAD	United Nations Conference on Trade and Development
CBOT	Chicago Board of Trade
OECD	Organization for Economic Cooperation and Development
UNDP	United Nation Development Program
EDRI	Ethiopian Development Research Institute

EGTE	Ethiopian Grain Trade Enterprise
EOPEC	Ethiopian Oil Seeds and Pulses Export Corporation
EWR	Electronic Warehouse Receipt
USAID	United State of American International Development
CIDA	Canadian International Development Agency
USD	United State Dollar
SMS	Short Message System
IVR	Interactive Voice Response
NEAA	National Exchange Actors Association
TM	Trading Member
IM	Intermediary Member
CBE	Commercial Bank of Ethiopia
IFC	International Finance Corporation
WHR	Warehouse Receipt
DST	Direct Specialty Trade
GTP	Growth and Transformation Plan
KACE	Kenyan Agricultural Commodity Exchange

PACDEX	Pan-African Commodities and Derivatives Exchange
RECOTIS	Regional Commodity Trade and Information System
NCPB	National Cereals Produce Board
EAGC	Eastern African Grain Council
KCPT	Kenya Coffee Planters and Traders
UCE	Uganda Commodity Exchange

ABSTRACT

The general objective of this study was to assess the current commodity exchange practices in Ethiopia, in the case of Ethiopian commodity exchange. It also aimed to examine the existing prospects to commodity exchange and to explore the challenges faced by the Ethiopian commodity exchange. In order to meet these objectives, the study used qualitative research methods to explore the current commodity exchange practices in the study area. Consequently, stratified random sampling was used to select the informants of the study. The findings showed that the development of commodity exchanges in the country is impeded by the relatively small size of domestic commodity markets, weak physical and communication infrastructure, a lack of legal and regulatory environments, and the likelihood of policy interventions, particularly in the market for staple cereals. Meanwhile, the demand for a domestic commodity exchange for export crops may be limited due to the availability of well-established exchanges. The paper also highlights major prospects and future outlooks an exchange in the specific context of Ethiopia. Finally, The paper also recommend: the goals of risk management and reduced transaction costs in the Ethiopian commodity exchange might be achieved more effectively through investments in transportation, warehousing, information services, or other financial institutions which could support future establishment of a commodities exchange.

Chapter One

Background of the study

1.1 Introduction

„Agriculture is a vital development tool for achieving the Millennium Development Goal that calls for halving by 2015 the share of people suffering from poverty and hunger...Three out of every four poor people in developing countries live in rural areas, and most of them depend directly or indirectly on agriculture for their livelihoods... In much of Sub-Saharan Africa, agriculture is a strong option for spurring growth, overcoming poverty, and enhancing food security...Today, rapidly expanding domestic and global markets; institutional innovation in markets and collective action...offer exciting opportunities to use agriculture to promote development..." (Robert B. Zoellick, President of the World Bank Group, World Bank 2007: foreword)

Linking small producers to markets is widely recognized as a valuable development trajectory. It is for this reason that the DGIS-WUR partnership "Globalization and Sustainable Rural Development" comprises a thematic research program "Value Chains for Pro-poor Development" related to value chains in the context of sustainable development and poverty reduction. One of the targets of the program is to contribute towards a more efficient agriculture product value chain with a focus on how to improve livelihoods for all chain partners. An important element in making value chains more

efficient is to reduce transaction costs and risks. In this regard, the Ethiopia Commodity Exchange (ECX) is expected to play an important role as platform for transparent and cost effective marketing.

The Ethiopian Commodity Exchange (ECX) is a public-private partnership initiative firm; establishment was founded on Proclamation No. 550/2007. This proclamation mandates ECX to develop its own rules for the governance of its various operations. Further, the Ethiopia Commodity Exchange Authority (ECEA) a regulatory body of the ECX was established by Proclamation 551/2007, launched in Addis Ababa, Ethiopia, on April 24, 2007. ECX's mission is:

"To establish a Commodity Exchange in Ethiopia of the highest integrity, available to Ethiopian as well as regional and international traders, based upon an open free market system for the mutual benefit of sellers and buyers, and to facilitate the procurement and marketing of any commodity provided or desired by any consenting parties through the auspices of the Commodity Exchange."

ECX has the following three goals:

- To serve as a market for sellers and buyers, exporters and importers of agricultural commodities in Ethiopian, regional and world markets.
- To provide reliable commodity market information on supply, demand, prices and their trends in domestic, regional and world markets.

- To establish fair commodity market prices for both sellers and buyers through a system of competitive and transparent trading on the floor of the Exchange, i.e., price discovery.

Since its establishment, ECX has set up a trading floor at the Mexico sub-city Show Grounds in Addis Ababa, where trading of commodities is conducted. The floor is open for trading limited types of agricultural commodities: crops such as coffee, sesame, Haricot bean, Maize and Wheat. However, the performance of ECX since its launch a four year ago has been less than impressive. This research addresses some of the factors that explain this under-performance, and explores the potential and opportunities for overcoming them.

1.2 Statement of the Problem

Governments in the Greater Horn of Africa and Eastern Africa (GHA/EA) region have individually set targets for industrialization of the economies by the year 2020. Since the economies are depended upon the agricultural sector, Industrializations of this sector is a prerequisite for the industrialization of the other sectors in the economy. Improved agricultural marketing and trade will contribute immensely to the industrialization of the agricultural sector. (Adrian W. Mukhebi, 2004)

In Ethiopia at present, the presence of high transaction costs, related to the lack of sufficient market coordination between buyers and sellers, the lack of market information, the lack of trust among market actors, the lack of contract enforcement, and

the lack of grades and standards, implies that buyers and sellers operate within narrow market channels, that is, only those channels for which they can obtain information and in which they have a few trusted trading partners. Despite market liberalization in the early 1990s, the persistence of high transaction costs and contract risk have resulted in limited arbitrage and weak investments by private traders, leading to limited market volumes, weak responsiveness to price signals and high price volatility, all of which have a negative impact on smallholder producer livelihoods.

The initiative to establish the Ethiopian Commodity Exchange was based on this concept. If markets function as to reward quality, reduce transaction costs of market participation thus increasing returns to market activity, enable quick capital turnaround thus increasing market volumes, and reduce risk of market participation, then markets will serve the needs of buyers and sellers and contribute to the well-being of all who participate in the market economy (ECX, 2006). Thus, it is anticipated that ECX will reward quality to producers; reduce transaction costs of market participation thus increasing returns to market activity; enable quick capital turnaround thus increasing market volumes, and reduce risk related to counterparty default and prices, thus increasing market participation; increase information and transparency for all market actors, thus empowering smallholders and other disadvantaged actors.

The program was started in the year 2007. Through the program has been in place for the last four years, there is hardly any study on the prospects of the program has contribute economic development and in what ways. In addition, there is no study made on the

determents/challenges of the program. Therefore, this study attempts to fill this gap and contributes to the literature on the commodity exchange aspects of projects in Ethiopia. Hence, this paper wants to answer the following research questions; is there exists a significant challenge that affects the key market actors in ECX with respect to- infrastructure development, macroeconomic stability, government policies, commercial and financial sectors development, farm size and production organizations. Finally, the paper will answer there exists a significant opportunities that encourage the key market actors in ECX with respect to- economic growth, government policies and infrastructure development of the country.

Against this backdrop, the objective of this research is to highlight and analyze the prospects and challenges of Ethiopian Commodity Exchange.

1.3 Objectives of the Study

The prime objective of the study is to explore the prospects and challenges of commodity exchange in Ethiopia. To this end, the study attempts to address the following specific objectives,

- ❖ Assess the challenges that affect the key market actors in the ECX
- ❖ Review the opportunity prevailing in operating commodity exchange in Ethiopia.
- ❖ To identify the main bottleneck and potential solutions of the ECX.
- ❖ To provide recommended solutions to help the program implemented successfully.

1.4 Significance of the Study

There is a need to address the issue a marketplace where buyers and sellers can come together to freely trade and are assured of quality, delivery and payment. This study focuses on commodity exchange, a strategy designed new marketplace that serves all market actors, from farmers to traders to processors to exporters to consumers. Accordingly, the study is going to assess the scenario of the program and identify deterrents of Ethiopian commodity exchange. Therefore, the finding of this study will be useful to help policy makers and Ethiopian commodity exchange to make clue-up decisions regarding their service deliverance mechanisms for better. And also the study will contribute to the literature of the country on the subject. Moreover, the study indicates the boulevard interested researchers to carry out more extensive studies for further research work.

1.5 Research Questions

The objective of this study is to carry out the prospects and challenges of commodity exchange in the country to achieve the state objectives of the study, the following research questions are formulated;

1. Is there exists a significant challenge that affects the key market actors in ECX with respect to-
 - ❖ Infrastructure Development
 - ✓ Physical infrastructure
 - ✓ Legal and regulatory infrastructure

- ✓ Warehousing facilities
- ❖ Macroeconomic stability
- ❖ Farm size and production organizations
- ❖ Commercial and Financial Sectors Development

2. Is there exists a significant outlook that encourage the key market actors in ECX with respect to-

- ❖ Economic growth of the country
- ❖ Government Policies
- ❖ Infrastructure Development

1.6 Scope of the Study

In this study, the researcher only evaluated the challenges of commodity exchange with respect to infrastructure Development, Macroeconomic stability, Government Policies and Commercial and Financial Sectors Development, challenges like political instability, social and environmental factors that could affect the performance of commodity exchange was not considered.

1.7 Limitation of the Study

Though the study presents a comprehensive theme over the succeeding chapters, it is not free from limitations. There was a confront in conducting the study due to the limited time frame and the limited access information, when the researcher inquires respondents, they were hesitating of the purpose of the study and show the sort of reluctant to offer

the correct information. To the managements and directors of ECX as they are usually busy, and some of these bodies were not willing provide information that they think is confidential. It was also difficult to gather sufficient information for the study due to the limited number of related prior research works regarding the commodity exchange Practices in Ethiopian context.

1.8 Organization of the Paper

The study is organized in to six chapters. The first chapter deals with the background of the study, statement of the problem, objectives of the study, the research questions, the significance of the study, and Scope of the study. The second chapter discusses Review literature of the study. The third chapter summarizes the overall functions and Modalities of ECX. The fourth chapter deals with methodology of the study. Chapter five focuses on the analysis the major findings. Finally, chapter six encapsulates the major issues raised in the study and provides conclusion as well as recommendations.

Chapter Two

Review Literature

The review of the related literature deals with definition of key concepts and terms, History of commodity exchange, how does an Exchange Work, Experiences in commodity exchange in neighboring East African countries, Overview of commodity exchanges in Ethiopia, The Problem of Economic order, Ethiopia Commodity Exchange (ECX), why an exchange for Ethiopia, The issues well be discussed in this chapter are relevant for the analysis of the study.

2.1 Definition of key Concepts and Terms

- ❖ **Commodity Exchange** is an exchange where various commodities and derivatives products are traded. Most commodity markets across the world trade in agricultural products and other raw materials (like wheat, barley, sugar, maize, cotton, cocoa, coffee, milk products, pork bellies, oil, metals, etc.) and contracts based on them. These contracts can include spot prices, forwards, futures and options on futures(UNCTAD report,2009)
- ❖ **DGIS-WUR** Wageningen UR Partnership Programme on „Globalisation and Sustainable Rural Development“ (Synthesizing Workshop December 9, 2010)

- ❖ **Spot:** Contracts to buy and sell the physical commodity resulting in (near-) immediate physical delivery (UNCTAD report, 2009).
- ❖ **Futures:** Contracts more commonly used as financial instruments for hedging, speculation and arbitrage, which may result in the future delivery of commodities.
- ❖ **Membership Seat** is a permanent and transferable right to trade on the Exchange. Members can be any individual, company, public enterprise, or cooperative that meets the membership requirements (www.ecx.com.et)
- ❖ **Clearing house Receipt** a document certifying possession of a commodity in a licensed warehouse that is recognized for delivery purposes by a commodity futures exchange (Gideon Onumah, 2010).

2.2 Functions and Possible Benefits of Commodity Exchange

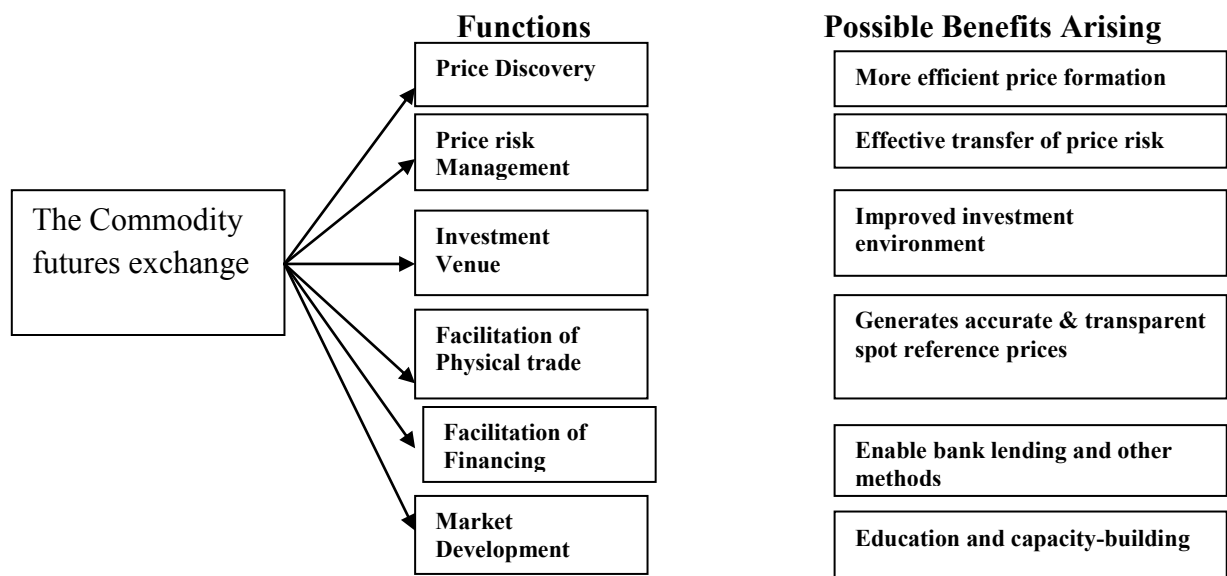


Figure -1- Exchange functions and benefits (source: UNCTAD, 2009)

2.3 History of commodity exchange

Exchange trading emerged in the 1840s, when Chicago became a commercial centre with railroad and telegraph lines connecting it with the East of the United States of America. Prior to that, grain traders in Japan had experimented with the idea in 1730. Chicago attracted Midwest farmers hoping to sell their wheat for a good price. In 1848, a central place was opened where farmers and dealers could meet to deal in "spot" grain - that is, to exchange cash for immediate delivery of grains such as wheat. The Chicago Board of Trade (CBOT) was launched in 1864 and followed in 1877 by the London Metal Exchange. Though there were early initiatives in India and Argentina to promote commodity exchanges, it was only in the 1990s that the number located outside of the OECD countries grew very rapidly (Rashid et al. 2008).

A commodity exchange is an institutional response, at a basic level, to the fundamental problem of achieving self-coordinating market order in the trade of agricultural products, which by their nature, are risky. One of the world's largest and oldest commodity exchanges, the Chicago Board of Trade, was established in 1848 by 82 grain traders in what was then a small Midwestern town, in conditions not too different from that of Ethiopian agriculture today, in response to a bumper harvest when farmers who went to Chicago and could not find buyers had to dump their unsold cereal in Lake Michigan. This strikes a hauntingly familiar chord for those who recall that Ethiopian farmers left grain to rot in the fields in 2002 as prices collapsed. The challenges that US markets

faced 150 years ago were not much different from what they face today, or what Ethiopian markets face today: to coordinate the exchange of grains and livestock produced across dispersed locations and dispersed producers to major markets hundreds of miles away (Tafara, 2005).

A brief history of the development of the Chicago market reveals that, while responding to the initial problem of coordinating exchange in a low-cost manner, the market system itself evolved as the sophistication of the market increased and as economic growth progressed. In other words, the Chicago exchange did not start as the sophisticated market it is today. In the 1840s, as grain production increased in response to technological innovations in the American Midwest, farmers used to come to Chicago to sell their grain to traders, who would ship it all over the country. When farmers came to the market, they came without prior knowledge of market prices and the city had few storage facilities and no established procedures for weighing and grading the grain, leaving the farmer at the mercy of the trader. In 1848, the Chicago Board of Trade (CBOT) opened as a central place where farmers and traders could meet to exchange cash for immediate delivery of wheat, but with certain established mechanisms by the Board for grading and weighing the wheat, for storing it if no trade occurred, for bidding on its price, and for resolving disputes that occurred. As both producers and buyers experienced the advantages of this system, it was a matter of a few years before farmers and traders evolved the practice of forward contracts in 1851. Thus, a farmer would agree with the

trader on a price to deliver a certain quantity of grain at a future time. The deal was advantageous to both parties in that the farmer knew in advance his market price and the trader knew his costs. As these contracts common, they began to be used as collateral against bank loans and began to exchange hands before the physical delivery itself. Thus, a farmer might pass on his obligation to deliver to another farmer, with the price going up or down depending on what was happening in the market. As these “forward contracts” became common over a 15 year period, CBOT introduced in 1865 a standard contract known as a “futures contract” with a pre-specified delivery date and a margin requirement to act as a performance bond. This innovation reduced the risks and costs associated with negotiating forward contracts on an individual basis (stiglitz, J.E., 1974).

Alongside these developments, CBOT was chartered officially by the state in 1859 (a decade after first opening), and therefore mandated to set standards of quality, product uniformity, and undertake routine inspections of the grain traded in the exchange, in order to maintain the integrity of the market. It was not until 1922, some 74 years after the Chicago market first opened, that the government established the Grain Futures Administration, as a regulatory body to oversee the expanding grain market. It was not until 1967 that CBOT began the electronic display of market prices, reducing the price reporting time to seconds. What is salient from this quick historical overview is that the Chicago market was established and evolved to resolve the real problems of transaction costs and risks faced by farmers in the market and the need to coordinate the exchange of

agricultural goods across actors, across space and time. It is also important to note that state regulation, increasing in scope as the market grew, followed the market rather than led it (UNCTAD Report, 2009).

Following the sweep of market liberalization across the globe, emerging exchanges are rapidly growing in developing or transition countries to fill the gap left by marketing boards and fixed price systems. There are currently more than 100 of these exchanges across developing countries: 28 in Latin America (15 of them in Brazil), more than 20 in Asia, 3 in Africa, 4 in Eastern Europe, and several in Russia (UNDP Report, 2006). Most of these exchanges have been created since 1992.

2.4 How Does an Exchange Work?

Most exchanges, even when they have a virtual or electronic trading system, operate in a physical place, with an exchange “floor” on which trading occurs. The exchange floor is typically organized by commodity. A common misperception is that a commodity exchange determines or establishes the prices of traded commodities. This is incorrect. Prices are determined solely by supply and demand conditions. If there are more buyers than sellers, prices will be forced up. If there are more sellers than buyers, prices will be forced down. Thus, buy and sell orders, which are channeled to the exchange floor for execution, are what actually determine prices. The orders to buy or sell are done by public outcry, rather than by private negotiation, and the prices at which transactions are

made are recorded and released publicly by the exchange as soon as possible, generating market transparency. In comparison to an auction where the emphasis is on selling, trading on a commodity exchange is like a continuous two-way auction, in which bids to buy are going on simultaneously with offers to sell. This is possible because the graded product needs no description with a standardized contract and because there is sufficient volume of both buy and sell orders. The exchange itself does not operate for profit, but merely provide an organized market place for buyers and sellers.

Clearly, the key to a successful exchange is to bring about the needed highest possible concentration of buyers and sellers into a single market mechanism in an efficient, low-cost, and manner. To do so requires that the market operate with certain basic rules and with certain types of actors. These characteristics or operating modalities are precisely what distinguish what is known as a commodity exchange from a typical central wholesale or terminal market (Ethiopian Development Research Institute, 2005)

2.4.1 A system that creates integrity and trust

A commodity exchange operates with a certain set of rules or conventions that are widely known. These rules pertain to four key dimensions of the market: the product, its price determination, the actors, and the contractual relations that bind them. These rules and modalities together create much needed integrity and trust in the system. To begin, goods traded on an exchange must be standardized according to known standards of quality and quantity. The grading and certification of grade must be done by licensed inspectors that

are qualified and regulated. Grading can be done through a laboratory based at the exchange on a sample basis or by other parties, such as the state or private actors. What is critical is that the product grades are widely accepted by the market and are developed with the participation of all market actors, including farmers, traders, processors, and consumers. The certification must be considered by all to be fair and neutral. Thus, whether the grading is done by the exchange or not, a key function of the exchange is to ensure that goods are brought to the market properly graded.

Second, an exchange operates a given system of price bidding that is aimed at publicly displaying buy and sell offers in a transparent and low-cost manner. Some exchanges operate on the basis of an “open outcry” system in which market actors in on the exchange floor cry out their bids and orders in a public fashion. Alternatively, an exchange may operate with an actual or a virtual “bulletin board” on which bids and offers are posted publicly. The key is that the price bidding is done openly rather than privately.

Third, in order to ensure that the rules are followed, exchanges operate with membership-based trading, where membership is based on the ability to comply with the rules of the exchange and to meet certain standards. Moreover, since chaos would quickly result if membership were continuously open to increasing numbers, membership in an exchange is fixed. In addition to an annual fee, the actual seat or membership on an exchange floor is paid for with an initial price, much like a share, and can be bought or sold on the

market. This ensures that members have a stake in the performance of the market and thus uphold its trust and integrity.

How then can large numbers of buyers and sellers be integrated into the market if the members who trade on the exchange are limited? Brokers are the key set of actors on an exchange who, as members of the exchange, trade on behalf of an unlimited number of buyer and seller clients. The function of brokers, whose duty it is to advise their clients, whether buying or selling, as to the best market opportunities and when and where these are likely to occur, provides significant empowerment to market participants. However, because of their central role, brokers must be specifically licensed and inspected in their function. The integrity of brokers is at the core of the integrity of the exchange itself. Exchanges are essentially self-regulatory systems which prescribe rules and codes of ethics to which all market actors that are registered with them need to strictly adhere to (Ethiopian Development Research Institute, 2005)

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2.4.2 A system that generates market information

- ❖ A core attribute of an exchange, implied within the four dimensions noted above, is that it enhances market transparency through generating and disseminating information. Through its own functioning, the exchange creates market information about the underlying supply and demand conditions in the economy. Thus, contrary to popular perception, a commodity exchange does not require an

external market information system as a pre-requisite to its proper functioning. An exchange becomes the market information system as it undertakes its function of price discovery based on the public posting of buy and sells orders. When the volumes of trade on the exchange are sufficiently large to justify that price discovery according to true market fundamentals is occurring, then the dissemination of that information of market prices provides a great service to the market, and the wider economy. This fact alone is a compelling reason to justify an exchange(Eleni Z. Gabre-Madhin and Ian Goggin, 2005)

2.4.3 A system linked to warehouse receipts

By storing their goods in a reliable warehouse, farmers can use the warehouse receipt that is issued as loan collateral and thus access finance without selling their goods. A common misperception is that a warehouse receipts system is primarily a price stabilization system. First and foremost, it is a system of financing, which is its primary purpose. However, it can have positive impacts on price stability by encouraging storage just after harvest, but this is not guaranteed. However, while the receipt is an important mechanism for farmers to reduce their cash constraint, it must be considered that it also entails speculative activity by farmers, with high risk implications, because farmers who are receipt holders are thus taking a position in the market with some judgment about the future direction of prices. This factor alone has led to the demise of many inventory credit schemes over the past few years across sub-Saharan Africa. To overcome this risk to

farmers, warehouse receipts can be made transferable, so that farmers can transfer the speculative risk through sale of the receipt. Thus, through linking a receipt program to a commodity exchange, receipts can be traded on the exchange and enable the transfer of risk in an organized fashion. The chances of success for a warehouse receipts system are considerably higher if it is linked to a functioning exchange on which receipts can be traded.

The viability of a warehouse receipts system depends on the extent to which there is discipline and trust in the warehouse, like the commodity exchange, integrity is key. In addition, the viability depends on the economies of scale to save costs of oversight and administration, the reduction of costs of financing that are passed on to farmers, finding the correct balance of regulatory oversight by state, and the bond and insurance requirements against default, loss or theft. For a transferable receipts system to be viable, there needs to be specific licensing of warehouse operators, a tracking system to register every change of ownership (to ensure only one party has legal title), and the establishment of clear legal rights for receipt bearers and of receipts as documents of title (mortgageable).

Clearly, a transferable warehouse system is highly complementary to the functions of the exchange. The receipts system goes hand in hand with a commodity exchange in that:

- ❖ Grades and standards are essential to warehouse operations as well as to a commodity exchange with standardized contracts;

- ❖ Price transparency is achieved because receipts indicate a specific grade, which generates price information that can also be used on the exchange;
- ❖ Risk is transferred by selling receipts on the exchange; and,
- ❖ Integrity and order: the legal enforcement of quality and of the transferability of the receipt is vital for both the warehouse receipts system (Eleni Z. Gabre-Madhin and Ian Goggin, 2005).

2.5 Experiences in commodity exchange in neighboring East African countries

The gradual liberalization of agricultural trade combined with the reduction of government support to agricultural producers outside the OECD, heightened the interest in the use of risk management and other modern financial instruments, including commodity exchanges, in the developing world (UNCTAD, 2006). In recent years, there is substantial growth in emerging commodity markets driven by the continued growth of existing exchanges, particularly those in China and India, and also by the rise of other exchanges situated in emerging markets.

In Africa, the Pan-African Commodities and Derivatives Exchange (PACDEX) initiative has stimulated the development of national exchanges in a number of countries, including Nigeria, Ethiopia, Kenya and Uganda (its establishment has been strongly supported by the African Union). The PACDEX model comprises a hub in Botswana managing a common exchange, as well as a back-office platform that links together various national exchanges and warehouses to facilitate regional trade in contracts across the agricultural,

metals, energy and currency sectors. The experiences with the commodity exchange in Kenya and Uganda are reviewed below

2.5.1 Kenyan Experience in commodity exchange

Currently, Kenya has three commodity exchanges: The Nairobi Coffee Exchanges dealing with coffee, the Tea Auction in Mombasa, and the Kenya Agriculture Commodity Exchange (KACE), a spot exchange that deals with a variety of commodities but mostly maize and beans.

The Kenya Agricultural Commodity Exchange (KACE) is a private sector firm that has been in operation in Kenya since 1994. KACE has been an important private sector initiative that has made significant contributions to agricultural marketing in the country, and to smallholder farmers in particular in two ways: linking producers and buyers of agricultural commodities, and provision of market information for commercial actors within the subsector.

However, KACE faces several challenges among which the following two are the most important: (i) the poor quality of produce that farmers deliver combined with the fact that most small-scale farmers find it difficult to deliver in bulk which is ideal for an exchange; and (ii) most of the commodities in Kenya are heavily regulated by boards and are grown and marketed in an environment of struggling cooperatives, which are inefficient, mismanaged and have cumbersome internal bureaucracies. (Mukhebi, 2004).

To overcome the stated challenges, KACE is supporting smallholder farmers to organize themselves into marketing associations in order to cost-effectively access market and information services provided by the exchange. This allows them to consolidate supplies of marketable quality commodities for offer through the exchange, and purchasing of inputs in volumes to achieve economies of scale. In addition, KACE's electronic market information system, the Regional Commodity Trade and Information System (RECOTIS), is providing market information throughout the eastern and central Africa region to promote regional trade.

In general, faced with fragmented markets, government intervention and significant infrastructural deficiencies, trade through KACE has always been minimal. Instead, focus has been on information dissemination with KACE acting as a provider of paid-for price information, a business model supported by private sector partnerships and aid donor funding.

For June 2010, the Nairobi bourse plans to launch a commodities exchange by a joint effort of the National Cereals Produce Board (NCPB), the Kenya Agricultural Commodities Exchange (KACE), Eastern African Grain Council (EAGC) and Nairobi Stock Exchange. It will consist of a platform where futures can be traded. The market will initially trade major grains produced in East Africa, including maize, wheat, rice and beans but will ultimately trade other agricultural commodities, including inputs such as fertilizers and seeds.

The plans have met with some criticism. Kenya Coffee Planters and Traders (KCPT), the association that runs Nairobi Coffee Exchange, said the country has not established the fundamentals for a credible commodities exchange. Experts reckon that for a commodities exchange to work in Kenya, the government needs to back the initiative with sound legal and regulatory frameworks such as enacting a Commodities Exchange Act and a Warehouse Receipts Act. The system also requires major improvements in road networks connecting farms and a substantial investment in NCPB facilities to fit them with modern equipment like sievers and driers to enable hold grains for longer periods (Omondi 2010).

2.5.2 Ugandan experience in commodity exchange

Uganda Commodity Exchange Limited (UCE) is a corporate entity registered in 1998 through the initiative of private sector players with four founding shareholders namely, the Ugandan Cooperative Alliance, Ugandan Coffee Trade Federation, National Farmers Association and Commercial Farmers Association. The UCE became operational in 2002. The commodities currently traded at the exchange are coffee, sesame, maize, beans, soya beans, and rice with quantity specification of minimum 10 tons per lot for every commodity (UNCTAD, 2006).

UCE aims to serve several objectives. One objective is to help link producers and buyers easily and cheaply and to make the process of price discovery more transparent. A second objective is to ensure that only standard commodities are traded. The commodity exchange is linked to the Warehouse Receipt System and UCE has been delegated the

regulatory function of warehouse receipts. Standards are being developed to ensure that farmers produce what the market requires to avoid wastage that currently characterizes production of rural producers. Once standard commodities are available in the rural areas, exporters will be assured of supply and farmers will get good prices through the exchange (Dawit Alemu & Gerdien Meijerink, 2010).

There have been a few auctions on the floor of the exchange with encouraging results, but operations had to be suspended to improve the system with the assistance of the European Union. There are several initiatives aiming at enabling farmers to access markets and have better bargaining power through bulking. One of these initiatives includes the formation of Area Cooperative Enterprises (ACEs). These ACEs are formed by primary societies to handle input distribution, bulking of farmers agricultural commodities, which they sell to most the competitive buyer. In order to ensure predictable quality, some have started value addition. It has been mainly the ACEs that have utilized the services of both the UCE and WRS so far.

A quick survey between 18 May and 8 June 2010 of the UCE shows the level of activity of the UCE. The UCE appears to trade only in maize. On 18 May 2010, the total amount of maize open for sale was around 1.620 tonnes of maize (32 bids) with an average price of 562 US\$. One week later, the total amount for sale was 465 tonnes with an average price of 433 (21 bids). Finally on June 8th, the total amount for sale was 1.335 tonnes

with an average price of 473 USH (32 bids). So it seems that the UCE is active, but that trading activities are limited (Omondi 2010).

2.6 Overview of commodity exchanges in Ethiopia

2.6.1. The Post-Reform Market Challenges

Like many other countries in sub-Saharan Africa, the Ethiopian grain economy underwent a dramatic market reform in the early 1990s with the nearly complete liberalization of the grain market. Prior to these reforms, for sixteen years until 1990, the Dergue government tightly controlled trade, through cooperatives and its parastatal agency, the Agricultural Marketing Corporation (AMC), initially set up in 1976 with World Bank support for the purpose of purchasing grain and distributing it to consumers (Lirenso, 1993). In this period, policies included fixed pan-territorial grain prices, restricted private inter-regional grain movements, limited private sector participation, and a producer grain quota (Fisseha, 1994; Lirenso, 1987; Franzel, Colburn, and Degu, 1989). Farmer quotas to the AMC amounted to 10 to 50 percent of the harvest at fixed AMC prices that were consistently below market prices, which had the effect of depressing rural incomes and production (Dercon, 1995).

In March 1990, a dramatic market reform lifted, overnight, all restrictions on private trade and eliminated official prices and quotas. Subsequently, in 1992, the Transitional Government continued reforms through eliminating wheat consumer subsidies and

downsizing the AMC, through closing all eight zonal offices, reducing its branch offices from 27 to 11 and its grain purchase centers from 2013 to 80. It was renamed the Ethiopian Grain Trade Enterprise (EGTE) with a new mandate of stabilizing prices and maintaining buffer stocks. Unlike most post-reform African states where marketing boards continued to dominate trade, the EGTE plays a relatively minor role, with only a 2 to 5 percent share of the domestic market (Jayne, Negassa, and Myers, 1998). In 1999, further reforms involved merging EGTE with the Ethiopian Oil Seeds and Pulses Export Corporation (EOPEC) and re-establishing it as a public enterprise, no longer required to stabilize grain prices, with the major objective of operating for commercial profitability by focusing on exportable grains (Bekele, 2002). Because market reforms resulted in the nearly total withdrawal of government intervention from the market, it was considered by an MSU study in 1998 that the reforms enacted in Ethiopia constituted a particularly important test of the hypothesis by the international community that the liberalization of markets would reduce costs and catalyze growth in production (Jayne, Negassa, and Myers, 1998).

What then were the impacts of these market reforms? Numerous studies have documented the effects of these policies (Dadi, Negassa, and Franzel, 1992; Lirenso, 1993; Dercon, 1995; Negassa and Jayne, 1997; Dessalegn, Jayne, and Shaffer, 1998; Gabre-Madhin, 2001, Gabre-Madhin et al, 2003). As predicted, these analyses revealed that liberalization did indeed result in a significant re-engagement of the private sector in

grain trade, improved market integration, and the reduction of marketing margins. However, very importantly, these studies also pointed out the reforms did not have the envisaged impact on agricultural growth and poverty reduction. Why? First, despite the narrowing of price spreads or margins, market reforms did not reduce the volatility of grain prices and may have indeed exacerbated it. Linked to this, significant constraints to market performance remained which led to the persistence of “thin” markets, defined as markets in which there are few purchases and sales. Thus, because these market constraints limit the scale and Scope of market activity, they ultimately limit the potential of the market to catalyze Production, growth and boost rural incomes in the country.

What are these constraints to market performance? Major constraints can be identified as either linked to weak infrastructure or to missing institutions. In terms of infrastructure, major concerns are the weak access of smallholder farmers to roads, as well as limited telecommunications and storage infrastructure. These weaknesses contribute to the high cost of transport as well as of other physical marketing costs, such as storage, handling, etc. Thus, marketing costs amount to some 40 to 60 percent of the final price, of which some 70 percent is due to transport. However, beyond the infrastructural issues, studies also point to the significance of “transaction costs” which are equally or more constraining to trade. These costs, distinct from physical marketing costs, are costs related to conducting or coordinating market transactions between actors, such as the costs of searching for and screening a trading partner, the costs of obtaining information

on prices, qualities and quantities of goods, the costs of negotiating a contract, the costs of monitoring contract performance, and the costs of enforcing contracts. Because these costs are difficult to identify and to measure, they are often overlooked, yet they offer powerful explanations of the persistence of missing markets or of market failures.

In fact, these transaction costs also influence the extent of the physical, more observable, marketing costs. For example, handling costs in Ethiopian grain markets are roughly 25 percent of the margin, which is far above the norm in sophisticated markets. These costs are particularly high in Ethiopia because the lack of grade and standards and the problem of contract enforceability forces buyers of grain at every transfer of ownership in the chain to off-load the shipment and re-sack every bag of grain. Similarly, because there is little coordination in the transport sector and thus no information regarding whether trucks can load shipment on the return trip, or “backhaul,” this results in very high transport rates.

In the Ethiopian context, the presence of prohibitively high transaction costs, evidenced by the lack of sufficient market coordination between buyers and sellers, the lack of market information, the lack of trust among market actors, the lack of contract enforcement, and the lack of grades and standards, implies that buyers and sellers operate within narrow market channels, that is, only those channels for which they can obtain information and in which they have a few trusted trading partners. Extensive empirical analyses of Ethiopian market behavior thus reveals that market actors conduct business

across short distances, with few partners, in few markets, and with limited storage, implying that opportunities for expanding market activity, otherwise known as arbitrage across space (transporting significant distances to market goods) and across time (storing for significant periods), are limited (Gabre-Madhin et al, 2003). This limited arbitrage in turn reduces the responsiveness of the market to changes in supply and demand. The weakness of the market was most starkly highlighted in the food crisis of 2002-2003, when a significant surplus of grain in 2002 led to the collapse of market prices, significantly compromising rural incomes and leading to disincentives to further technology adoption by farmers.

The persistence of these market constraints in Ethiopia points to the fact that market reforms alone, defined as the removal of policy distortions, are necessary but not sufficient to enhance market performance. This suggests that the new development agenda, not only in Ethiopia but throughout post-reform Africa, is to move beyond market reform to market development. In addition to policy incentives, key interventions are required to develop appropriate market institutions and build needed infrastructure, defined together as the “3 I’s of market development” (Gabre-Madhin, 2005). In recognition of this, the Government of Ethiopia restructured the Ministry of Agriculture and Rural Development and established a state ministry on agricultural input and output markets in 2004. At present, both the government and its international partners are

engaged in dialogue on a concerted set of interventions to enhance the performance of agricultural markets.

2.7 The Problem of Economic Order

A fundamental concern of all societies is how the economy is organized, how market exchange is coordinated. Merchants emerge to buy goods from sellers and sell them to buyers; factories emerge to buy labor services and other factors of production and sell output to buyers. It is often said that (Nobel-laureate Ronald Coase 1937) started a quiet revolution in economics when he asked one of the most celebrated questions in modern economics: Why does the firm emerge in the market economy? To extend this question: Why do we observe vertically integrated firms for some goods and services and bazaar-type markets for others? Why do supply chains based on long-term relationships emerge in some arenas in contrast to anonymous, non-repeated transactions in others? Coase's answer was that there are costs of using the market mechanism, which may be reduced or eliminated by certain types of coordination in the market. Coase pointed to two kinds of costs: the costs of discovering what the relevant prices are and the cost that may be saved by making a single long-term contract for the supply of goods and services instead of short-term successive contracts.

At its core, then, the problem of economic order can be conceived as essentially a coordination problem, depending integrally on both information and on the nature of

contracts. This fundamental concern for economic order has led to major historical debates, extending to the present in different guises, on the role of central planning versus the free market economy. In the early twentieth century, while advocates of central planning had long cited the complexity of economic activity as an argument against what Karl Marx described as the "anarchy of the marketplace," the Austrian economist Ludwig Nobel-laureate Friedrich Hayek 1945 argued forcefully that it was precisely the complexity of the economy that rendered it beyond human comprehension and therefore unable to be perfectly planned, arguing that only by the competitive forces of the free-market regime could the decentralized elements of the economy be appropriately utilized. Thus, price signals and the pursuit of profit lead the vast and varied lines of activity to be self-coordinating. In more recent times, with the emergence of market fundamentalism, (Robert Heilbroner 1990) declared, "It turns out, of course, that Hayek was right."

How then to achieve this "self-coordinating" market order? On the one hand, in form action seems to be at the heart of the institutional problem of order. That is, the transmission of information on prices, quantities supplied, quantities demanded, actors and their actions, product quality and attributes, and processes is the key to market coordination. An important body of economic literature has focused on the problems of imperfect, asymmetric, or incomplete information, which in turn lead to decision-making with "bounded rationality" (Herbert Simon, 1982), missing markets and risk (Stiglitz, 1982; Akerlof, 1970), and high transaction costs (Williamson, 1981).

On the other hand, contracts and the costs associated with negotiating and enforcing contracts are also at the heart of the problem of economic order. Fundamentally, as Hicks (1969) noted, even the simplest exchange involves a form of contract, where each party is abandoning rights over the things that he sells in order to acquire rights over the things he buys. Thus, all exchange is trading in promises, which is futile unless there is some reasonable assurance that the promises will be kept. Extending this concept, Nobel-laureate Douglass North (1990) has forcefully argued that “the inability of societies to develop effective, low-cost enforcement of contracts is the most important source of both historical stagnation and contemporary under development in the third world.”

To summarize, then, the heart of the problem of economic order facing Ethiopia today is the central question of how market exchange can be coordinated efficiently, at minimum transaction costs, among the myriad of actors in the rural economy, the diverse and spatially dispersed producers and consumers, in such a way as to enhance livelihoods and lead to the optimal allocation of resources. In the post-reform era, rather than take the central planning route, the problem confronting policymakers is how to bring about a “self-coordinating” market order. In order to do so, two core aspects must be addressed: the transmission of vitally needed market information and the low-cost enforcement of contracts among market participants (Ethiopian Development Research Institute, 2005).

2.8 Ethiopia Commodity Exchange (ECX)

The Ethiopia Commodity Exchange (ECX) is the most recent Spot/Cash exchange in Africa, which was launched in 2007. It is owned by the Government of Ethiopia, which funded the initial capitalization of about US\$20 million, with some contribution by external partners. Government also underwrites all performance risks. However, ECX is run by a board representing farmer cooperatives, the state-owned grain trading enterprise and trading members. The trading platform involves the use of open outcry but an electronic trading system is being developed and is expected to be launched in the near future. Coffee is the main commodity traded by ECX but Maize, Wheat, Sesame and Beans are also listed for trading. The standard lot size is five (5) tones – tailored to current average load per small trucks in rural Ethiopia and to ensure broad participation, including small-scale market players. Clearing and settlement are handled by seven (7) partner settlement banks and the contracts are for immediate delivery of the physical commodities. The ECX owns and operates a network of 10 warehouses in the main production areas in Ethiopia as well as additional 20 remote terminal centers in major market centers. It also operates an electronic warehouse receipt (EWR) system controlled by the Exchange Central Depository. The EWR represents legal title and is transferable and negotiable on the exchange. It may be used for purposes of securing collateralized finance and may, upon request, be materialized into a paper receipt (UNCTAD report, 2008).

2.9 Why an Exchange for Ethiopia?

The clear benefits of an exchange are that:

- ❖ An exchange reduces transaction costs by:
 - Facilitating contact between buyers and sellers
 - Enabling centralized grading of products
 - Ensuring that contracts are enforceable
 - Providing mechanism for price discovery
 - Simplifying transactions with standard contracts
 - Transmitting information about prices and volumes
- ❖ An exchange provides a mechanism for increasing market liquidity
- ❖ An exchange enables transfer of price risk, and
- ❖ An exchange creates trust, order, and integrity in the market (Eleni Z. Gabre-Madhin and Ian Goggin, 2005)

Chapter Three

3.1 ECX and its modalities

The Ethiopian Commodity Exchange (ECX) is designed to be a marketplace where buyers and sellers meet to trade, assured of quality, delivery and payment. The ECX is a national multi-commodity exchange with the aim of providing market integrity, by guaranteeing the product grade and quantity. It will manage a system of daily clearing and settling of contracts. It will enhance market efficiency by operating a trading system where buyers and sellers use standardized contracts. Market transparency will be achieved by disseminating market information in real time to all market players. Finally, the ECX will facilitate risk management by offering contracts for future delivery, providing sellers and buyers a way to hedge against price risk. However, contracts for future delivery will only be implemented after the ECX spot market trading has shown to be successful. After its establishment in 2006, The Ethiopia Commodity Exchange (ECX) commenced trading operations in April 2007. And subsequently opened trade for white and mixed maize, hard and soft wheat, processed and unprocessed pea beans, coffee and sesame. The establishment of the ECX was funded by a consortium of financing partners including UNDP, the World Bank, American development agency USAID, Canadian Development Agency CIDA and the World Food Program and is co-financed by the Government of Ethiopia. Since 2006, UNDP has financed more than USD 3.5 million of the total USD 24 million needed to establish the exchange. In addition, UNDP support

included initial project start-up, capacity building, and technical advisory services over four years (ECX Website). UNDP would like to replicate the experience in other African countries. Among these, Tanzania, Kenya, Zambia and Uganda are considering replicating, customizing and scaling up the ECX model. On 24 February 2010 UNDP helped organize and supported ECX in organizing a forum "The Making of a Market: Global Learning from Commodity Exchange Experiences" with over 300 representatives including Africa- and India-based exchanges as well as the international and donor community, federal and regional government officials, and private traders. The Forum has resulted in the establishment of the African Commodity Exchange Association (UNDP, 2010).

The World Bank has dedicated about seven million dollars to set up the ECX while supporting and modernizing its operations through the Rural Capacity Building Project. The information dissemination system is part of the Bank's funded projects and includes software to introduce the Short Message System (SMS) and an Interactive Voice Response (IVR). It further includes 200 Price Tickers or electronic display boards, in major market places across the country, which will provide farmers and traders with real-time prices of commodities as transacted at the central exchange place. In June 2009 the ECX installed about 12 Price Tickers in major towns and in May 2010, the ECX reported to have 12 price tickers (ECX Website). Finally, the World Bank will finance the development of new IT systems to make the current home-made IT system more

sophisticated in order to support future trading whereas currently it supports real-time trading prices (Wendifraw 2009).

3.2 ECX governance

There are three bodies governing the ECX:

1. The Ethiopian Commodity Exchange Authority (ECEA) as a state regulatory body,
3. The Exchange, and
4. The national association of market actors.

The ECEA is a public institution, which approves and regulates contracts, membership, trading, clearing, and other ECX rules. It safeguards the interests of society. Its specific objectives are to promote innovation, access to market information by all market participants and fair competition among markets and market participants; to deter and prevent price manipulation or any other disruption of market integrity; to ensure the financial integrity of all transactions and the avoidance of systemic risk; and to protect all market participants from fraudulent or other abusive trading practices and misuses of customer assets. The ECEA is accountable to the Prime Minister. Moreover, in a unique governance structure, the ECEA is governed by a Board comprised of a Chairman, and a member from each of the following relevant government bodies: Ministry of Finance and Economic Development, Ministry of Trade and Industry, Ministry of Agriculture and Rural Development, and the National Bank of Ethiopia. The operations of the ECEA are executed by a Director General, who is also an ex-officio member of the Board.

The ECX is designed as a Public-Private Partnership enterprise. The Government of Ethiopia is the owner of the ECX, while the ECX offers the sale of Membership seats, which are privately owned, permanently and freely transferable rights to the stream of earnings from trading on the Exchange. ECX is established as a demutualized corporate entity with clear separation of Ownership, Membership, and Management. Thus, owners cannot have trading stake, members cannot have ownership stake, and the management can be neither drawn from the owners nor from the members. There is a joint Board of Directors drawn from relevant public institutions (state) and ECX members (private).

The National Exchange Actors Association (NEAA) is an institution established by members and their Authorized Representatives and Associates, is recognized by the ECEA for the purpose of upholding and maintaining the standards of integrity, professionalism, and skills of all exchange actors. It is expected to maintain a database of Exchange Actors. The NEAA became active only at the end of 2009.

3.3 Membership

ECX Members are the core actors of the market. Membership is acquired through the purchase of a Membership Seat, provided other requirements are met. A Membership Seat is a permanent and transferable right to trade on the Exchange. Members are required to follow the rules of the Exchange and thus maintain the integrity of the ECX marketplace. Members are liable for the transactions they conduct through ECX.

ECX offers two classes of Membership:

1. Trading Member (TM) trades only on his or her own account
2. An Intermediary Member (IM) trades either on his or her own account or on behalf of Clients

Every Member is required to hold two settlement accounts (Pay-In and Pay-Out) with an ECX designated settlement Commercial Bank of Ethiopia (CBE), Bank of Abyssinia, Awash Bank, Wegagan Bank and the Dashen Bank, Nib bank, united bank, partners of ECX. Buyers should deposit a certain amount of money before the trading day and sellers are required to deploy commodities at the ECX store. Every member is also required to authorize power of attorney to the ECX Clearing House to issue Pay-In transfer instructions on his or her behalf. An Intermediary Member is required to hold separate settlement accounts for client trading and is expected to maintain a system for reporting on payment to clients.

There are various requirements for both classes of Membership. The financial requirements include:

- ❖ Payment of Membership Seat price Birr 50,000
- ❖ Net Worth: an audited financial statement (by an authority-approved auditor) should certify the maintenance of minimum Net Worth requirement according to membership category. i.e. Birr 500,000 for a trading member and Birr 1,000,000 for an intermediary member
- ❖ Provision of a refundable security deposit in the ECX Settlement Guarantee Fund for the duration of membership, according to

membership category i.e. Birr 200,000 for trading Member and Birr 300,000 for intermediary Member

After the first year, payment of annual Membership maintenance fee: Birr 5,000. The financial requirements are necessary to ensure that all trade through the ECX can be paid for and that payments are cleared immediately. Other requirements include the recognition by the Ethiopian Commodity Exchange Authority (ECEA) as an Exchange Actor. Members should have a tax registration and maintenance of tax clearance according to Ethiopian law, where applicable. For different entities (individual, private limited company, cooperative, public enterprise etc) there are different requirements. Members are required to successfully complete an Authority-approved ECX Certification examination. Finally a personal interview with the Exchange, and in the case of Share Company, with all authorized signatories is held.

The ECX started selling 150 membership seats in September 2009 at its annual member's forum. The initial price was set at 50,000 Birr for a seat. Initially, there was not much interest and the first 100 members needed a lot of convincing to join the ECX at this price. However, the membership value significantly increased since then. For instance, the Oromia Coffee Farmers Cooperative Union Ltd bought a seat for 200,000 birr and one businessman in the coffee business was reported to have paid 3.3 million Birr by the end of 2009. The 150 members include 69 suppliers, 45 exporters, 24 local traders and 12 cooperatives and commercial farmers.

Currently, ECX membership is made up of 9 cooperative unions, representing a total of 826,000 farmers, ten processing firms, including flour and food processing factories, five commercial farmers, four public enterprise and 73 private exporters and domestic companies, mainly Plcs.

3.4 Trading procedure

3.4.1 Warehouses

Commodities are deposited in warehouses operated by ECX in major surplus regions of the country. At the ECX warehouses, commodities are sampled, weighed, graded and certified. The ECX guarantees the grading of the commodities and maintains a central registry of warehouse receipts. ECX warehouses issue an Electronic Goods Received Note and provide the depositor or his/her representative with a signed print copy. The depositor has to get an Electronic Warehouse Receipt issued by the ECX Central Depository in order to establish legal title to the deposited commodity. ECX warehouses are insured at maximum coverage to protect against loss and damage of deposits.

The ECX provides standardized ECX commodity-based contracts, which specify grade, delivery location, lot size, and other contract terms. The contracts can be either for immediate delivery or at a pre-specified date in the future.

3.4.2 The Exchange Central Depository

ECX maintains an Exchange Central Depository or Registry of warehouse receipts. It issues Warehouse Receipts, prints copies of receipts, transfers legal titles (transferring

Electronic Warehouse Receipts between holders), and cancels receipts. It also maintains separate accounts for every depositor. ECX is currently working towards introducing the use of Electronic Warehouse Receipts for the purposes of securing collateral finance or also known as inventory financing in the near future.

3.4.3 ECX Trading System

The ECX trading system includes a physical trading floor located in Addis Ababa, where buyers and sellers may participate in “open outcry” bidding for commodities. During regular business hours, the ECX trading floor holds various sessions for transacting different commodity contracts. Trades are made on the trading floor by bidding or offering a price and quantity of contracts, by using a physical representation of a trader's intentions with his hands. Market prices can thus change throughout trading hours. These prices are transmitted in real time to producers and consumers by electronic price tickers located in 21 locations around the country, although the ECX plans to increase these to 200. The prices are also shown on the ECX website (<http://www.ecx.com.et>) and can be obtained through a mobile phone service.

Once a transaction has been made, the transaction orders are recorded on Order Tickets in standard lot sizes of standardized commodity grades (referred to as contracts). The ECX automated back office system ensures the existence and validity of the Warehouse Receipt backing the sale, the availability of buyer funds in a deposit account, and where

applicable the validity of the Member-Client agreement. This automated reconciliation takes just minutes.

The ECX guarantees payment against delivery through an internal system for clearing and settlement of contracts, in collaboration with partner banks. Every trading day, ECX clears the net obligations of all of the market participants and transmits orders to partner banks and warehouses to settle transactions through transferring funds in one direction and warehouse receipts in the other direction.

The ECX provides additional layers of security through the Arbitration Tribunal that has licensed arbitrators who assure the speedy and professional resolution of any commercial disputes that may arise. Additionally, the ECX maintains a system of market surveillance where experts monitor the behavior of market actors to protect the market from manipulation, excessive speculation, fraud, or other malpractice.

3.4.4 Warehouse Receipt Financing

At the end of 2009, the Ethiopian Commodity Exchange (ECX) and its partner organization, the International Finance Corporation (IFC), which is a member of the World Bank Group, was preparing to introduce Warehouse Receipt (WHR) financing for producers and traders to access bank loans (Abiye 2009). This allows producers and traders to access bank loans by pledging their Warehouse Receipts issued by the ECX for commodities held in ECX warehouses.

3.5 Direct Specialty Trade

In February 2010 the ECX launched Direct Specialty Trade (DST), a new platform in which producers of specialty coffee can transact directly with international buyers seeking to purchase premium beans on a fully traceable basis. The DST facility was established because the normal trading procedures of the ECX cannot take into account various specialty coffees (that there are 256 to 781 coffee variety grades). Coffee exports fell as a result.

DST is established as a monthly bidding session in which small farmer cooperatives and commercial growers deposit specialty grade coffees in advance in ECX warehouses. International buyers pre-register for the DST session and are able to order samples and to participate in a cupping session prior to the bidding. A condition for participation in DST is that farmers will receive a minimum of 85 per cent of the final export price, which is higher than the price received normally, which is below 40 per cent (Daily Ethiopia 2010).

The ECX (ECX 2010) defines specialty as: "coffee, from a known geographic origin, that has a value premium above commercial grade coffee due to its high quality in the cup and to particular attributes that it possesses". This definition imbeds four major concepts. The first is geographic origin of production which is important for quality differentiation, social and community identification, environmental aspects and market branding. The second is the value premium in the market price above the standard of commercial grade.

The third is high quality using recognized industry standards. The fourth is that in addition to high quality, there can be identifiable and measurable or certifiable attributes that are the basis of the value premium. These attributes can be environmental, health-related or social and are often used in fair trade produce.

A prerequisite is a traceability system linked to certification. This can be done by recognized and accredited third-party certification entities who can partner with the Exchange to obtain this traceability information and to ensure its consistency and integrity. The DST is, however, not suitable for high value markets in for instance Europe that require produce (e.g. sesame) to adhere to Global Gap requirements (Mheen-Sluijer).

The second DST Session (April 29, 2010) included 432 tones of specialty coffee (58 lots) of which only 15% was sold to various international buyers by May 18th, 2010. The reasons for low sales are not clear.

Chapter Four

4.1 Methodology of the Study

This study mainly employed qualitative research methods. However, some quantifiable secondary data were gathered and analyzed to complement and elaborate the qualitative data. These data were gathered from of the World Bank, Doing Business.org, accessed, 2010; data come from World Development Indicators and other related documents. More specifically, closed-ended questioners, semi-structured interviews based on open-ended questions were used. Interviews allow person-to-person discussion was also used.

4.1.1 Sampling Design

Sampling design is the selection of a part of population or a material to represent the whole population. The objective of sampling is to make correct inference about the aggregate and is only justified if the selected part-the sample population –is a true representative of the main population.

Among the different sampling techniques, the researcher will employ stratified random sampling and simple random sampling. Stratified random sampling is a sample obtained by separating the population into non-overlapping groups, called strata and then selecting a simple random sample from each stratum. The possible respondents of the researcher will be trading Member/the main membership, An Intermediary Member/limited membership and the officers of Ethiopian commodity exchange. But due to the rationale

of the study the researcher were consider treading member and officers ECX in the sampling frame.

Thus, the researcher using the basics of this system was taken 110; from this sample frame 100 were selected from 223 treading members of Ethiopian commodity exchange scheme as a sampling frame. And 10 officers of ECX embraced as a sampling frame. Finally two groups have been formed.

4.1.2 Data Collection Techniques/ Instruments

The data inputs for the study were gathering from both primary and secondary sources.

4.1.2.1 Primary sources

Primary data were gathered through field survey by employing different methods. The researcher was conducted questionnaire with multiple choices (closed –ended) and semi-structured interviews based on open-ended questions. In addition a structured interview with officials of the concerned department heads and members (participants) of ECX was conducted. Moreover, they were asked to elaborate on the problems and achievements of the program and to forward their professional and subjective opinions to be used as an input to the commodity exchange. For interviews, face-to-face interviews were conducted with written confirmation from the concerned office holders and members of ECX.

4.1.2.2 Secondary Sources

In order to augment the reliability of the data collect by the questionnaire and interview survey and to supplement the data missing in the questionnaire survey, information were acquire from previous works and from different publications was used. In addition, official but unpublished reports and summaries of the ECX were used as sources of secondary data.

4.1.3 Data Analysis Techniques

The data gathered from primary and secondary sources were have been analyzed through statistical (both descriptive and inferential) techniques survey questionnaires were tally. A level challenges in Ethiopian commodity exchange, the researcher decided to pursue a semi-comparative research strategy. The researcher approach was decretive and unit of analysis is Organization for Economic Cooperation and Development at particular African countries thus have commodity exchange and the five year growth and transformation plan.

Data used in this study are from Compiled from the WDI of the World Bank, Doing Business.org, accessed, 2010 and data come from World Development Indicators.

A variety statistics such as percentages and frequencies was used as method of analyzing data. Moreover, other methods of data analysis such as tables and charts were utilizing in the study.

4.3 Administration of Data Gathering Instruments

The researcher selected 3 data enumerators to effectively collect data from the sample respondents through questionnaires. The researcher performed observation, reviewed documents from secondary sources, interviewed respondents, coordinated the data gathering process and supervised data enumerators in the field.

4.4 Anticipated Ethical Issues

Ethical issues are very important in research these days. Ethical emerged from value conflicts. In research, these conflicts are expressed in many ways: individual's rights to privacy versus the undesirability of manipulation, openness and replication versus confidentiality, future welfare versus immediate relief, and others. Each decision made in research involves a potential compromise of one value for another. Researchers must try to minimize risks to participants, colleagues and society while attempting to maximize the quality of information they produce (David F. Gillespie, 1989).

In favor of this study the researcher were familiar with the ethical issues of research. Thus, the researcher will observe the principles of ethical issues like confidentiality and dignity of the participants, integrity, on no account plagiarism, and never fabricating and destroying data.

Chapter Five

Analysis the Major Findings

In this part of the paper detail discussion and analysis of the study finding are presented. The challenges that affect the performance of Ethiopian commodity exchange are obtained by closed-ended and semi-structured interviews based on open-ended questionnaire; interview question was conducted with the officers and trading members (participants) of the ECX and by thoroughly analyzing their challenges with respect to the Organization for Economic Cooperation and Development at particular African countries thus have commodity exchange.

5.1 Respondents' Background

Though data was mainly gathered for the analysis through interview, questionnaires were also distributed to 110 respondents from ECX. The following paragraphs discuss on the background of survey respondents.

The chart below shows sex composition, age structure, educational level of both of the questionnaires and interview participants. The total number of participants in the study was 110, of who were eighty nine males and twenty one were females. When we look at the age structure, fifty two respondents and interviewers fall under the age ranges of 30-40 and twenty one drop under age range of 20-30 whereas the remaining thirty seven were 40 and more. Regarding the educational level, 41.6%, 27%, 22.9%, 8.3%

participants in the study were grade 12 and below, diploma, degree and master and above holders respectively.

Detail profiles of the study participants are shown in the chart below.

5.1.1 Respondent's age & sex Background

Frequency

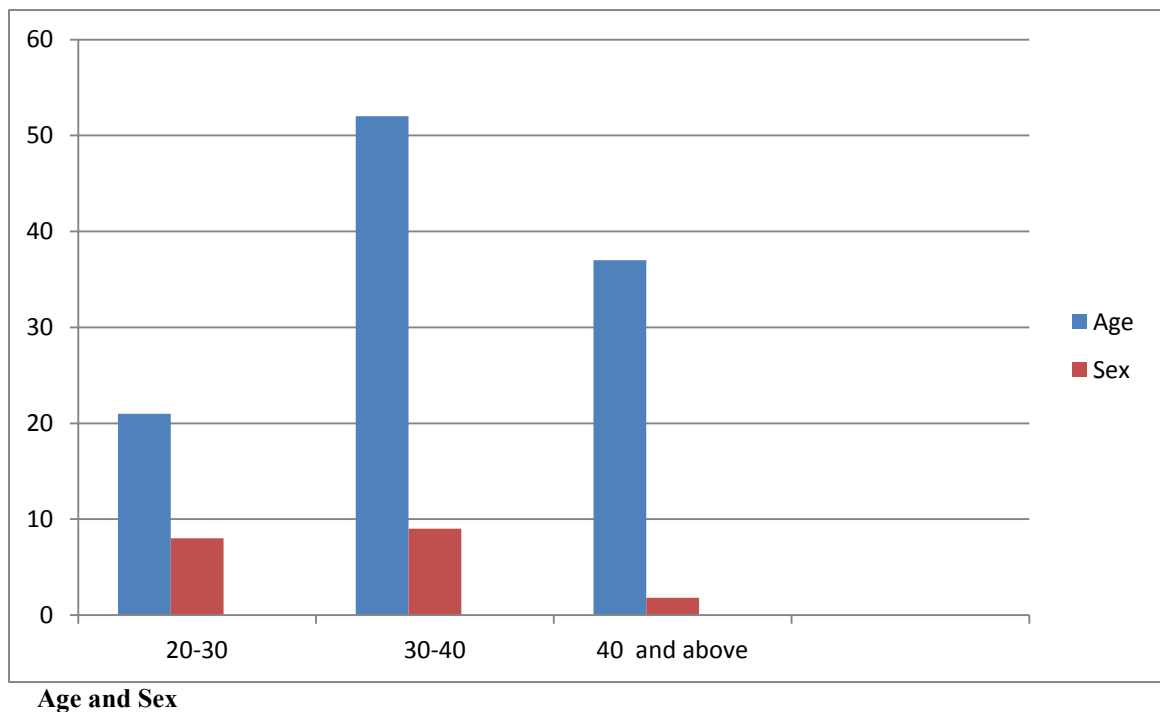


Figure 1: Age and Sex summary of respondents (Source: Owen Survey)

As can be deduced from the graph, more males than females were addressed on the survey. Moreover, more respondents lie with in an age category of 30-40 and 40-50. From the respondents, about 90% are members in ECX, 10% are officers in ECX.

5.1.2 Respondent's Academic Background

Respondents also have diversity in their academic backgrounds, as shown here below in the chart, strengthening the idea that people from different academic backgrounds participate in ECX.

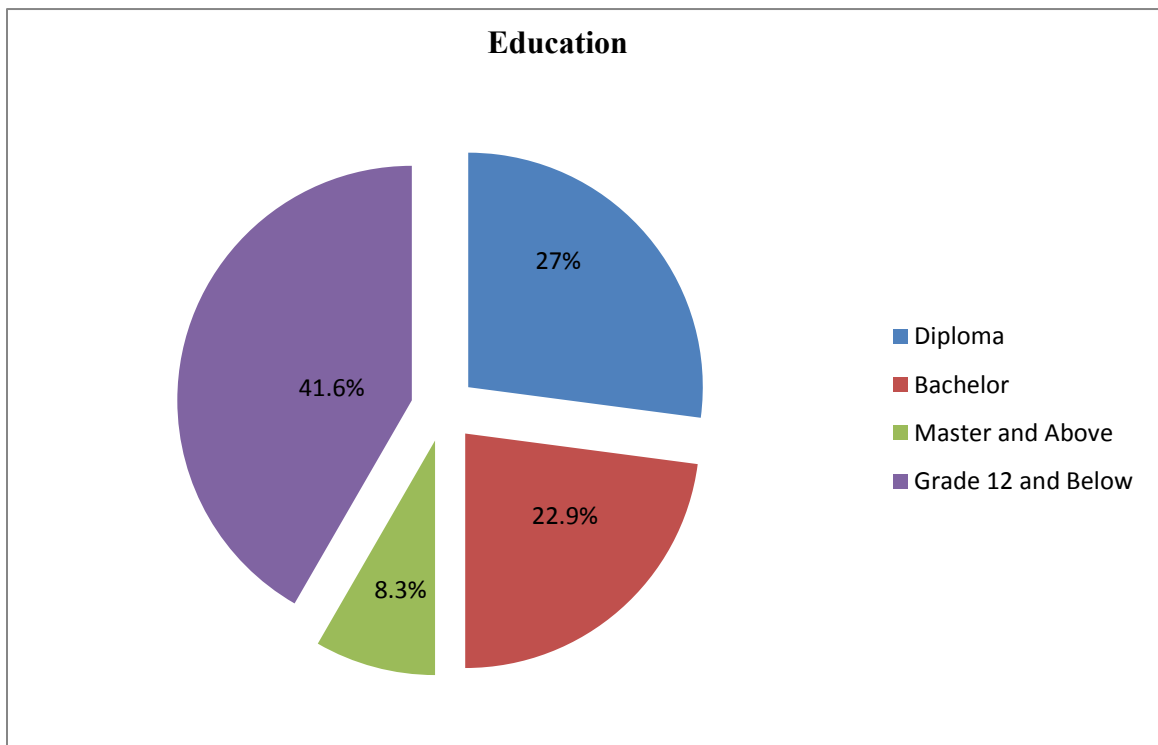


Figure 2: Academic Background of Respondents (Source: Owen Survey)

5.2 Surveyed challenges of Ethiopian commodity exchange

In relation to this, respondents were asked some questions to investigate challenges and prospects of ECX and their responses are summarized and analyzed as follows.

Table 1

№	Items	Respondents			
		Yes		No	
		№	%	№	%
	Do you think that the introduction of commodity exchange in Ethiopia is necessary?	97	88.2%	13	11.8%

Source: Owen Survey

The issues related to the necessity of commodity exchange in Ethiopia (item-one), 97(88.2%) percent of respondents reply that it is necessary to Ethiopia. On the other hand, 13(11.8%) of officers documented that it is not necessary.

Interview responses from officers of ECX showed that, Ethiopia is the biggest grain producer in Africa; its traditional markets are small because of narrow networks of trust among buyers and sellers. Most farmers trade within 12 kilometers of their farms and only with people they know. They said more than two-thirds of farmers have faced contract defaults, and only 4 percent have received legal enforcement of contracts. In the traditional trading system, grain changes hands four to five times between producer and consumer. With each change, the grain is put into new sacks. This system enables buyers to know what they are getting in terms of quality and quantity, as the contents are inspected and weighed, but it is vulnerable to price shocks. This is because commodity exchange is so essential to Ethiopian market.

Table 2

№	Items	Respondents			
		Yes		No	
		№	%	№	%
	Do you think that Ethiopian commodity exchange is successful enough in the commodity exchange process?	86	78.2%	24	21.8%

Source: Owen Survey

Regarding the successful of Ethiopian commodity exchange, 86(78.2%) of respondents were documented that it is successful enough where as 24(21.8%) of respondents were respond it not successful enough.

Moreover, interview responses from officers of the ECX explained that, The ECX has been operating for three years and it is moving on. In this operating period the exchange has traded more than 1 billion dollars of commodity value, involving the grading, handling, storing, trading, and delivery of 4.6 million bags, participation by 450 members and their 6000 clients, and 20,000 market information phone inquiries a day. In these 1000 days, we have not had a single system down day, a single trading order error, a single payment delay, or a single payment default. This is what the successes of the Ethiopian commodity exchange in the four years of operation.

Table 3

№	Items	Respondents			
		Yes		No	
		№	%	№	%
	Are there any challenges facing the EXC?	102	92.7%	8	7.3%

Source: Owen Survey

As presented in table 3 (Item 3), 102(92.7%) percent of respondents responded that there are challenges facing the ECX, which affect the day to day activities of the exchanging process. Whereas 8(7.3%) of respondents were documented no challenge facing in its four years of operation.

5.2.1 Infrastructure Development

Table 4

№	Items	Respondents			
		Yes		No	
		№	%	№	%
	Do you think that the current infrastructure development have comparative advantage to ECX?	7	6.5%	101	91.8%

Source: Owen Survey

Regarding current infrastructure development to ECX, 101 (91.8%) percent of officers responded that the current infrastructure development is poor. Whereas 7(6.5%) of respondents said that there are good infrastructure development.

Moreover, interview responses from executive of the ECX explained that, the first key challenges of Ethiopian commodity exchange is lack of adequate Physical infrastructure and Inadequate Warehousing facilities and Legal and regulatory infrastructure.

5.2.1.1 Physical infrastructure

Communications and transportation infrastructure is critical to a functioning exchange. First, trade at a futures exchange requires a communications network that can provide traders with spot market information in order to estimate the basis. A commodity exchange also needs to be supported by a reliable system for transportation and distribution, so that delivery location can be credibly specified in the contract. Moreover, the transactions costs must be stable enough for traders to evaluate the spread between the spot and futures contract prices.

Table 5: Indicators of communications and transportation infrastructure

Countries	Road Density (Km/Km sq land area)	% of paved roads	Ground line & Mobile Phone subscribers per 1,000 people	Internet users per 1000 people
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Ethiopia	0.064	13	10	2
Ghana	0.21	18	93	17
Kenya	0.11	12	85	45
Malawi	0.3	19	25	3
Nigeria	0.21	31	79	14
Zambia	0.12	22	34	20
Uganda	0.35	13	44	8
South Africa	0.3	20	473	78

Source: Compiled from the WDI of the World Bank. The numbers are for 2009 or recent years.

Communications and transportation infrastructure in selected countries is presented in table 5. African countries are included here for comparison to conditions in Ethiopian commodity exchange. These data reveal wide variation in conditions across African countries which can be compared to South Africa, better communication and transportation infrastructure, 0.3 of road density, 20 of paved roads, 473 of ground line & mobile phone subscriber's users per 1,000 people and 78 of internet users per 1000 people. In terms of the Road Density (Km/Km sq land area) most of the African countries except Ethiopia in the sample are almost similar to the researcher benchmark south Africa. On the other respect Kenya, Ethiopia and Uganda countries's where a percentage of paved roads are lowest compared to the benchmark South Africa. As for Ground line & Mobile Phone subscribers per 1,000 people and Internet users per 1000

people, Ethiopia is quite low. The above table shows how much Ethiopia have far more developed communications and/or transportation infrastructure than others.

Infrastructure must not only support the exchange, but it must also link various spot markets if the exchange is to function. Ideally, the physical and communications infrastructure will ensure information on product quality, quantity, form, and price in all relevant markets is available across various spot markets. In the absence of this information, price discovery in the spot markets may be erratic and price risk will not be manageable in a futures exchange. Available data suggest that the lack of physical infrastructure is a constraining factor in Ethiopian commodity exchange. Countries with successful exchanges have far more developed communications and/or transportation infrastructure than others see (Table 5). Public investment in both transportation and information infrastructure may be needed for the development of a successful commodity exchange in countries where they do not exist. This is because infrastructure development is one of the hub points of commodity exchange.

5.2.2.2 Legal and regulatory infrastructure

A commodity exchange must be supported by appropriate legal infrastructure, particularly (i) a system of grades and standards, (ii) a credible system of contract enforcement, and (iii) governance in spot markets. In most African cereals markets such a system of grades and standards is not likely to evolve without government involvement.

However, the real challenge in African markets will not be the development of grades but the enforcement of contracts that use them. The legal system must ensure contract enforcement and a regulatory system must ensure that warehouses do not issue multiple receipts for a single lot. For futures contracts, participants must have confidence that contracts will be recognized by the legal system and that contract obligations will be enforced.

Table 6: Indicators of Contract Enforcement Capacity

Indicators			
Countries	Number of procedures	Days to process	Cost as a % of debt recovered
Ethiopia	30	690	14.8
Ghana	22	730	12.7
Kenya	25	360	41.3
Malawi	40	337	136.5
Zambia	21	404	28.7
Uganda	19	484	35.2
South Africa	26	600	11.5
OECD countries	22	351	11.20

Source: *Doing Business.org*, accessed, 2009. The numbers are for 2009 or most recent years

Information on enforcing contracts in selected countries is presented in table 6. African countries and the OECD are included here for comparison to conditions in Ethiopian commodity exchange. These data reveal wide variation in conditions across African countries which can be compared to OECD countries, where contract enforcement requires an average of 22 procedures over 351 days, costing 11.2 percent of the debt to be recovered. In terms of the number of procedures, most of the African countries except Malawi and Ethiopia in the sample are similar to the OECD standards. Ethiopia stands out as high, but not as high as Malawi. Ghana, Ethiopia and South Africa, stand out for the length of time resolution requires. As for total cost, however, South Africa and Ghana is quite low, almost at the OECD average. In this respect Ethiopian commodity exchange is also relatively low cost, while costs in Malawi appear to make efforts at contract enforcement futile. The wide dispersion of costs among African countries and the favorable comparison between many of them, where exchanges are functioning suggest that some African countries including Ethiopia may have enforcement abilities that are sufficient to support an exchange. In this admiration the comparison of Ethiopia commodity exchange is encouraging.

5.2.3 Warehousing facilities

Table 7

№	Items	Respondents			
		Yes		No	
		№	%	№	%
8	Do you think the current Warehousing facilities are sufficient in amount to ECX?	16	14.9%	91	82.7%

Source: own survey

As per the response of respondent's, 91(82.7%) of them responded that Warehousing facilities is the other key challenges of ECX the other 16 (14.9%) responded that it is not the problem of ECX.

Moreover, interview responses from officers of the ECX clarified that, Warehousing facilities are one major impediment to the growth of commodity markets in Ethiopia. Though Government organization, Ethiopian commodity trade enterprise, plays a vital role in storage of commodities; the infrastructure does not support future trading adequately. The entire current warehouse of ECX is rented from Ethiopian commodity trade enterprise. For the commodity futures to work effectively, the seller must deposit the deposit the commodity traded in a warehouse and the buyer should take physical delivery of the commodity in a warehouse at a location of his choice. However, at present, only a few warehouses can handle such kind of delivery requests and that too for specific commodities in the exchange traded. Because of lack of adequate warehousing

facilities that can ensure the quality standards of the commodities traded, traders and farmers still prefer local rural markets for trading the commodities. This factor is hindering the emergence of nation-wide commodity market in Ethiopia.

5.2.4 Financial Market environment

Table 8

№	Items	Respondents			
		Yes		No	
		№	%	№	%
	Do you think that the existing financial environment have relative benefit to ECX?	15	13.8%	93	84.5%

Source: Owen Survey

As it can be seen from table 6, (item 6), 93(84.5%) percent of respondents responded that, the current financial environment is the discouraging to ECX on the other hand 15(13.8%) percent documented that the current financial environment is encouraging.

Furthermore, interview responses from officers of the ECX elucidated that; a limited financial sector with few commercial agents will have a reduced capacity to support a futures exchange process. An exchange must have access to a clearing house with sufficient capital to serve as a guarantor of all transactions. These requirements imply a generally well functioning financial sector. However, the current Commercial and financial sectors environment development of Ethiopia is disappointing. For this reason,

inadequate amount of financial sector in the economy is other challenge faced Ethiopian commodity exchange.

Available indicators suggest that financial sectors in most countries in Africa including Ethiopia are either shallow or constrained by repressive regulations. Table 5 presents indicators for the same set of countries examined in Table 9. Low or negative real interest rates indicate repressed financial systems in all countries except South Africa. Furthermore, South Africa had considerably lower spreads between deposit and lending rates, suggesting more efficient and liquid financial markets. The stock of credit in these economies is consistent with the real interest rate data, with low volumes of domestic credit relative to GDP in countries with repressed interest rates. Under these circumstances, it is likely to be difficult to finance the activities of an exchange.

Table 4: Indicators of financial market development

Indicators	Ethiopi a	Ghan a	Keny a	Mala wi	Nigeri a	Zambi a	South Africa
Real interest rate deposits (%)	-8.1	- 4.3	-4.74	-3.89	-2.62	-6.03	2.56
Real interest rate lending (%)	-4.6	--	2.33	15.31	3.91	8.35	6.99
Real interest rate spread (%)	3.5	--	7.07	19.21	6.53	14.38	4.43
Financial Information	--	--	3.5	--	1.0	1.5	6.0

infrastructure index

Net Dom Credit (% GDP)	52.9	25.05	38.82	16.78	9.00	22.28	84.31
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Domestic credit provided by	57.8	30.49	41.12	22.38	9.01	22.3	84.37
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banking sector (% of GDP)

Domestic credit to private	25.3	13.08	27.03	10.52	14.93	7.56	146.81
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sector (% of GDP)

Inflation rate (% change cpi)	11.60	15.12	10.31	15.41	13.51	18.32	3.4
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Note: data come from World Development Indicators; Real interest rates are calculated using the consumer price index. Financial information infrastructure index is based on 10 factors; of which 6 cover the scope, quality, and availability of credit reporting data (in private and public registries) and the existence of a basic legal framework for credit reporting. The other 4 factors cover the availability of public registry data for collateral (fixed and moveable) and corporate registries and court records. The index is from 0 to 10, with higher values indicating greater financial infrastructure.

A final measure of the strength and development of the financial sector is the financial information infrastructure index which reflects the scope, quality and availability of credit reporting, the legal framework for reporting, and the availability of relevant court records and registries. All of this information is useful for supporting a commodity exchange. This index is scaled from 1 to 10, with 10 indicating the maximum availability of financial information. The table reveals that countries with functioning exchanges have far greater financial information infrastructure than those with failed exchanges. On this measure, conditions in Ethiopia commodity exchange appear inhospitable to its exchange.

5.2.5 Macroeconomic stability

Table 10

№	Items	Respondents			
		Yes		No	
		№	%	№	%
7	Do you think that the recent Macroeconomic stability of the country suitable with ECX?	18	16.5%	88	80%

Source: Owen Survey

As presented in the above table (item 7), 88(80%) percent of respondents replied that, the recent Macroeconomic stability of the country is not fitting with ECX while 18(16.5%) percent documented that it is suitable with ECX.

In addition to this, interview responses from officers of the ECX indicated that, a commodity exchange, particularly futures trade, cannot be developed and sustained in absence of sound policies for monetary management and foreign trade. In particular, macro-economic policy needs to maintain stable and reasonably undistorted real interest rates, exchange rates and inflation rates. Clearly, macro policies have broader implications, but they can be critical for a commodity exchange. For example, even after the government of Ethiopia dismantled the coffee auction floor and required all Ethiopian coffee to be exported through the ECX, preferred to hold the commodity rather than to sell. One explanation for this behavior is that the Ethiopian Birr was highly overvalued and there was a rumor that there would be devaluation of 20-30 percent. Under those circumstances, holding stocks made perfect sense to the exporters, as devaluation would

generate larger profits for them. Meanwhile, the general expectation of devaluation tended to depress exports broadly and exacerbated a balance of payment crisis, when government desperately needed foreign exchange. This exchange crisis may have contributed to the government's decision to confiscate 17,000 tons of coffee from 80 exporters who had been reluctant to sell. In any case, the Ethiopian experience clearly demonstrates the relevance of a sound macroeconomic environment and stable exchange rates in developing and sustaining an exchange. In similar manner efforts to maintain unsustainable interest rates affect behavior Ethiopian commodity exchange and volatile inflation rates also depress the activities of the exchange.

5.2.6 Political tolerance to cereal price movements

Since almost all commodity market in Africa is dominantly join agriculture products which are politically sensitive in low income countries and are susceptible to unpredictable policy intervention. The likelihood of intervention adds another layer of risk which can limit the success of an exchange and its contracts. Officers of the ECX indicated that, governments have intervened in cereal markets to stabilize prices, especially when sudden price spikes threaten consumer welfare. In Ethiopian commodity exchange the government of Ethiopia, important cereals and food crops are excluded from commodity exchanges.

Commodity exchanges cannot guarantee that prices will remain within the range that is acceptable to the governments. Analyses of historical data suggest that futures prices are

slightly less variable than spot prices (Tomek and Gray, 1970). Extending this idea further, Gilbert (1996) argues that although commodity futures can help market participants and the producing governments to manage risks associated with variability over an annual time horizon, it should not be equated with price stabilization. If prices spike, government will tend to intervene and if the intervention is large, it can create uncertainties, shatter confidence in the system, and reduce the likelihood of a successful exchange.

5.2.7 Farm size and production organizations

According to the interview responses of officers of ECX, in Ethiopia agriculture commodity is dominated by smallholders. But, it is well recognized that smallholders do not access commodity futures markets directly. They may lack know how, have insufficient collateral for margins, and may have difficulty monitoring prices (Larson, et al., 1998). In the case of Ethiopia commodity exchange, additional institutional mechanisms are needed to link smallholders to centralized exchanges. For instance, producers' organizations could be used to complete product assembly and conduct transactions. In the absence of such institutional innovation, a centralized agricultural commodity exchange is not likely to develop in Ethiopia, which is a smallholder dominated country.

5.3 Prospects and outlooks of Ethiopian commodity exchange

Based on interview responses from officers and members of ECX and open ended questionnaires there are also prospects and outlooks to Ethiopian commodity exchange.

The prospects and outlooks of Ethiopian commodity exchange are:

5.3.1 Policy Rationale

The Ethiopian Rural Development Strategy of 2001 states:

“Our agricultural production can achieve rapid and sustainable growth if it is based on producing more than the producers’ own consumption and supplying the difference to the market. The life of the farmer can be continuously improved if he is able to produce at this level, sell his products and purchase ever-increasing volumes and types of commodities and services.”

A very important emphasis the policy direction is to achieve growth through the expansion of commercial farms. This policy thrust thus constitutes an important push for efforts to establish a commodity exchange which can expand the scope and reach of markets.

5.3.2 Growth of new cooperatives

Another important factor in justifying a push for a commodity exchange is the recent initiative to establish voluntary, market-oriented cooperative unions around the country. If these cooperatives operate with a business orientation, they can stand to greatly benefit from the existence of a well-organized national market. At present, interviews with

certain unions reveal a deep mistrust of the market and a desire to “cut out the middleman” through directly contracting between cooperative unions and processors or exporters. However, the experiences of the last two years have revealed the shortcomings of this orientation to the unions themselves. In attempting to engage in forward contracts without reference to a well-functioning national market in which products are graded and priced in a neutral fashion, the contracts are fraught with enforcement problems, as either party has shown a bias in the grading, or has reneged when the market changed. Interviews with the unions reveal a frustration on their part in not being able to work with the market itself, rather than in alternative single channel arrangements, which ultimately increases, rather than decreases their market vulnerability.

It is also been noted that, with these contractual arrangements, it is not clear how sustainable or scalable this orientation is, with the limited number of processors available. Nor is it clear that they necessarily receive better prices, if one believes the basic maxim that “you can’t beat the market.” On the positive side, the organization of smallholders into market-oriented cooperative societies and unions implies that they have a structure or platform from which to participate in a national commodity exchange. More experienced unions may wish to become members of the exchange and trade directly on the floor, while others may work through brokers. The experience of the Zimbabwe Agricultural Commodity Exchange, ZIMACE, was that the majority of trade on the exchange was directly done by smallholders organized into marketing associations.

5.3.4 Increase in commercial farms

Another positive development is the emergence of large-scale commercial farmers in the grain sector. At present, the commercial farmers association of Ethiopia boasts membership of some 200 farmers who represent some 2 percent of the domestic market. These are actors who would keenly benefit from an organized market where products would be graded and be channeled into domestic or export markets.

5.3.5 Increasing agro-processing linkages

The Ethiopian economy is evolving in the direction of increased domestic and foreign investment in agro-processing industries, particularly private investment. These industries stand to benefit greatly from, and therefore demand, an organized market which can deliver adequate and regular supplies of products at the required quality, which is critical to maximizing the utilization of industrial capacity and product extraction ratios. Thus, the rise of industrial demand is an important prospect on the domestic market.

5.3.6 Emergence of exporter firms

As exports of oilseeds, pulses, and cereals grow, there is increasing demand by exporters facing international markets for an organized domestic market. Thus, export firms are absorbing an increasing share of the domestic market. However, these firms' competitive edge depends on the availability of supply in proper grades and in adequate supply in a timely manner. Export firms can maximize profit and increase market share with "just in time" delivery, minimizing their storage and inventory costs. This is only achievable with an organized domestic market which can provide accurate information on available supplies, and enable them to contract forward at low cost.

5.4 Future Outlooks of Ethiopian Commodity Exchange

5.4.1 The five Year Growth and Transformation Plan

Availability of affordable and quality infrastructural development such as transportation, communication and power supply and their contribution to commodity exchange is vital/crucial. At the side of this Growth and Transformation Plan envisages huge investment in infrastructure to strengthen the foundation for long-term sustained growth and development. Thus, Road, Railway, Energy, Telecommunication, are the major area given by GTP.

Table 11: selected GTP targets

Sector/Indicator	Baseline 2009/10	Plan 2014/15	Target
Infrastructure Development			
Roads:			
Road network	49,000	136,000	
Average Time taken to all-weather road (hours)	3.7	1.7	
Road density (km/1000 km²)	44.5	123.7	
Road density (km/1000 population)	0.64	1.54	
Roads in acceptable condition (%)	81	86.7	
Proportion of Area further than 5 km from all weather roads (%)	64	29	

Rail way		
Rail way network	-	2000
Power:		
Electricity coverage	41	75
Power generating capacity(mg wt)	2,000	8,000
Telecom:		
Mobile density (per 100)	1.5	8.5
Telephone service coverage with in 5km (%)	49.3	90
Fixed telephone subscribers (in millions)	1.2	8.6
Mobile Telephone subscribers (in millions)	7.6	64.4
Internet service subscribers(in millions)	0.20	7.17

Source: Growth and Transformation Plan (GTP), 2010

Road

Based up on the above table, the Road Sector Development Program consists of the following road components: road network will be increase from 49,000 - 136,000, Road density (km/1000 km²) from 44.5 -123.7, Road density (km/1000 population) from 0.64 - 1.54, and finally, 2000 km Railway, which is a very effective, low-cost and time saving mode of transportation which helps to transport produces and inputs in bulk.

Communication

The main strategy in the communication sub-sector includes: mobile density (per 100) will be increase from 1.5-8.5, telephone service coverage within 5km (%) from 49.3 -90, fixed telephone subscribers (in millions) from 1.2 - 8.6, mobile telephone subscribers (in millions) from 7.6 - 64.4 and to end with, internet service subscribers (in millions) will be increase from the current 0.20 - 7.17.

GTP is successfully implemented by the end of the five year plan; Ethiopian commodity exchange will experience Future growth and better outlooks. Large scale roads and communications have positive impact on development of commodity exchange in the economy. At the same time the objectives of the plan were to improve access to road particularly to rural population. By then the small-scale farmers are able to farm sustainably and facilitate agricultural trade in the exchange.

The proposed new strategies for GTP, if implemented, would be expected to increase the efficiency of commodity exchange and enhance national food security with various benefits to farmers and the national and regional economies:

- ❖ Farmers would increase their incomes by selling their produce at fair prices, first because of the effective communication of their produce for quality; second because of better transportation they keep direct access to the Ethiopian commodity exchange trading floor and other services.

- ❖ Farmers, buyers and government policy makers would have access to more reliable market information for better and more informed decision making because of better communication facility.
- ❖ Farmers would have the opportunity to invest in their farm operations by using their higher incomes. As a result, they purchase improved farm inputs, thereby increasing agricultural production and enhancing food security.
- ❖ Commodity traders from world markets would be able to access Ethiopia readily and efficiently, thereby increasing agricultural exports from the countries of the region.
- ❖ ECX would increase the volume of trade through the exchange, and can develop the exchange to further promote and facilitate commodity trade in domestic, regional and world markets.
- ❖ Farmers, Processors and traders would increase their profits through accessing better quality raw materials more cost-effectively.

Chapter Six

6.1 Conclusion and Recommendation

6.1.1 Conclusion

Establishment of commodity exchanges has been considered as a potential market-based mechanism for commodity price risk management. While such initiatives have been successful in some emerging countries like Ethiopia, they have frequently failed or had limited success in Ethiopia. This paper reviewed the prospects and challenges of setting up successful commodity exchanges in Ethiopia. It is clear that the success of commodity exchanges depends on conditions which are absent in Ethiopian contexts. For Ethiopian commodity exchange, the binding constraints to success appear to be small market size compounded by weak infrastructure and underdeveloped financial sectors, and lack of supportive legal and regulatory frameworks.

Financial sectors and government regulations that are favorable to futures trading were almost prerequisites for successful local futures exchanges. Meeting these preconditions, a contract that is significantly different from existing ones or with a large basis risk backed by a large physical market was an essential element for a new exchange to attract a viable level of liquidity. Even with all these set and subset of conditions (sic), a market could fail if well developed financial intermediaries were not present. Financial

intermediaries are the distribution channels of futures markets, and when these channels are blocked, the market extension was hard to accomplish.

Evidence in the literature clearly indicates that the risks of failure are very high if an exchange is launched in a thin market. While a critical minimum is not clearly defined, market sizes in Ethiopia appear to be very small compared to the countries that have active commodity exchanges in Africa. Under-developed financial markets may also make it difficult for hedgers and speculators to actively participate in these exchanges. Within countries, cereal crops have the largest markets, but cereal prices remain politically sensitive and likely targets for government control or other interventions, especially during periods of rapid food price inflation. Commodities that are likely to draw a sufficient scale of trade to insure needed liquidity in a commodity exchange are likely to be the very goods that are subject to political interference or can be traded effectively on existing exchanges abroad. Even when a government is committed to allowing an exchange to function without price controls or interference, a track record of policy reversals and scape-goating private traders for market abnormalities could still inhibit an exchange.

Going further into the Ethiopian reality, the paper has identified major prospects and outlooks an exchange in the specific context of Ethiopia. The major prospects are those to do with the policy context, Growth of new cooperatives, Increase in commercial farms, increasing agro-processing linkages, Emergence of exporter firms. The major future outlooks of Ethiopian commodity exchange are lies in line with growth and

transformation plan. If GTP is successfully implemented by the end of the five year plan; Ethiopian commodity exchange will experience future growth and better outlooks.

In general, the enabling conditions for development of commodity exchanges are also fundamental to market development. Good physical infrastructure reduces transaction costs and promotes trade; a successful market information system can address information asymmetry; establishing warehouse receipts can mitigate liquidity constraints of the farmers and traders; and well-designed farmers organizations can facilitate product aggregation and smallholders' linkage to the market added investment. These investments are now increasingly feasible and could generate large social benefits, irrespective of whether they are part of establishing commodity exchanges.

6.1.2 Recommendation

For Governments:

- ❖ Ensuring an overarching regulatory framework that upholds the transparency and integrity of commodity markets, protects market participants from unscrupulous practices, and effectively manages the risks that arise from market operations;
- ❖ Developing elements of physical infrastructure that support commodity exchange and market development – including information and communications technology, electricity, storage and logistics;
- ❖ Aligning other elements of commodity policy to support the extension of the positive benefits arising from commodity exchanges across agricultural sectors, including to small-scale farmers, for example by integrating an understanding of market functions into smallholder commercialization and corporatization programmes;
- ❖ Promoting the integration of the commodity and financial sectors, by removing undue restrictions on participation by financial institutions in markets and on support for market development;
- ❖ Signaling support for the market, thereby providing confidence for other entities to participate in the exchange. One strong signal could be to channel the Government's own food security policies through exchange mechanisms. Another strong signal could be to mandate State organizations to hedge exposure to price volatility using the exchange's price-risk management mechanisms.

For the private sector:

- ❖ For trading houses, financial institutions and entrepreneurs in general, recognizing the potentially great opportunity – both commercial and developmental – from providing small scale commodity producers with access to exchange-traded instruments, and from developing effective instruments and delivery channels to enable their advantageous usage.

For ECX:

- ❖ Partnering with other entities that are well placed both to deliver exchange services to market users and also to enhance impact on market users, especially rural communities. Such entities may include farmer cooperatives/associations, government agencies, research institutes, extension agencies, financial and microfinance institutions, and civil society organizations;
- ❖ Deepening and broadening the exchange's development impact through the innovative application of products, services, technologies and capacity-building programmes;
- ❖ Sharing experiences and best practices with other commodity exchanges in the commodity exchange in neighboring countries;
- ❖ Supporting further research into the role and the benefits of commodity exchanges.

For farmers' cooperatives/associations in commodity exchange:

- ❖ Exploring the feasibility of intermediating between exchanges and farmers, in particular to aggregate small-scale farmers' requirements and to execute through the exchange;

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Appendix
ADDIS ABABA
COLLEGE OF GRADUATE STUDIES
SCHOOL OF BUSINESS AND PUBLIC ADMINISTRATIONS
MBA PROGRAM IN FINANCE

Survey questionnaire for a Study on prospects and challenges of commodity exchange in Ethiopia. In the case of ECX

To The Respondents:

This questionnaire is prepared to assess the prospects and challenges of commodity exchange particularly in ECX. It intends to look into the current policies and guidelines, actual performance of exchange transaction and its implication towards facilitates exchange. The result of this questionnaire will be used for academic purpose only. It is hoped that the outcome of this research will contribute to the improvement of commodity exchange practice in the country. Therefore, you are kindly requested to provide genuine response to the questions that follow.

Dessalew Zelalem

“Thank you in advance for your Cooperation

Appendix 1

Questionnaires for officers of the ECX

Dear participants:

You are being asked to participate in a survey that intends to assess prospects and challenges of commodity exchange in Ethiopia especially in ECX. The purposes of the study are to: describe commodity exchange practice in Ethiopia, identify the current and future prospects and challenges for either the adoption or treatment and recommendation.

I respectfully request your kind cooperation in answering the questions that follow as clearly and frankly as possible and your response will be highly confidential.

Dessalew Zelalem

Thank you in advance for your kind cooperation

Personal Information questions

Please answer by putting a thick (√) in one of the blank spaces corresponding to each item.

1. Age group (in year):

A. 20-30 ☐

C. 40-50 ☐

B. 30-40 ☐

B. 50+ ☐

2. Sex: Male ☐

Female ☐

3. Level of education:

A. Below 12 grade ☐

D. Bachelor degree ☐

B. Certificate ☐

F. Masters and above ☐

C. Diploma ☐

1. Your status/position in the business _____

2. Year of experience in the specific office/units _____

Survey questions

Select an appropriate answer from the given alternatives and put a tick (✓), for other questions please provide your answers on your own words.

1. Do you think that the introduction of commodity exchange in Ethiopia is necessary?

A) Yes ☐

B) No ☐

C) I have no idea ☐

2. If your answer for Q #1 is yes, what is the rationale behind saying this?

3. Do you think that Ethiopian commodity exchange is successful enough in the commodity exchange process?

A. yes ☐ B. No ☐ C. I have no idea ☐

4. If your answer for **Q # 3** is No, what is /are the principal reason (s) for this?

5. Are there any challenges facing the EXC?

A. Yes ☐ B. NO ☐ C. I have no idea ☐

3. If the answer for **Q #5** is yes, can you mention the existing challenges?

4. If the answer for **Q #5** is yes, do you think the ECX have a responsibility to play in this regard?

A. Yes ☐ B. No ☐ C. I have no idea ☐

5. If the answer for **Q #7** is yes, what do you think the responsibility they have to play?

6. Do you think that the government policy suitable with your company?

A. Yes ☐

B. No ☐

C. I have no idea ☐

7. If your answer for **Q #9** is „A“ or „B“ what do you think of the reasons?

8. Do you think that the current infrastructure development have comparative advantage to ECX?

A. yes ☐

B. NO ☐

C. little ☐

9. If your answer for question **#11** is „B“ or „C“ what do you think of the reasons?

10. Do you think that the current financial environment have relative benefit to ECX?

A. Yes ☐

B. No ☐

C. little ☐

11. Do you think that the current Macroeconomic stability of the country suitable with ECX?

A. Yes ☐

B. No ☐

C. little ☐

12. What major benefits have you recognized from the establishment and operate of ECX?

13. Would you summarize the potential of commodity exchange in Ethiopia?

14. Would you summarize outlook of commodity exchange in Ethiopia?

15. Would you summarize the potential and existing challenges to Ethiopian commodity exchange?

16. Any extra information you want to suggest that will help ECX become a more useful actor in our economy:

Appendix 2

መጠይቅ ለኢትዮጵያ ምርት ገበያ

በአዲስ አበባ ዩንቨርሲቲ

ቢዝነስና ኢኮኖሚክስ ፋክሊቲ

የፋይናንስ ዲፓርትመንት

ይህ መጠይቅ የተዘጋጀው በኢትዮጵያ ምርት ገበያ ስላሉ የወደፊት ተስፋዎችና ችግሮች ለመወቅና ለመረዳት የተዘጋጀ ነው፡፡ በዚህ መጠይቅ የሚሻ መረጃ በግሌ ጠበቁ ለትምህርት የምጠቀምበት መሆኑን ቃል በመግባት ነው፡፡

ስለሆነም በዚህ መጠይቅ ለቀረቡት ጥያቄዎች ተገቢውን ምላሽ በቅንነትና በታማኝነት እንዲሰጡ በትህትና እንጠይቃለን፡፡

እባክዎን ጥያቄዎቹን ለመረዳት ያንብባቸውና ለቀረቡት ጥያቄዎች አጭር መልስ ለመስጠት ለሚገባቸው አጭር ምላሽ ይስጡ፡፡

ማስታወሻ

ይህ መጠይቅ በደረሰዎት በሀላት ቀናት ውስጥ ሞልተው እንዲያጠናቅቁ ከወዲሁ እንይቃለሁ፡፡

የግል ሁኔታ መጠየቅ

1) ዕድሜዎ በየትኛው የእድሜ ክልል ውስጥ ይጠቀሳል፡፡

ሀ) 20-30 ☐

ሐ) 40-50 ☐

ለ) 30-40 ☐

መ) 50 + ☐

2) የታወቁት ወንድ ☐

ሴት ☐

3) የትምህርት ደረጃዎ

ሀ) ያለተመረ ☐

መ) ዲፕሎማ ☐

ለ) ከ12^ኛ ክፍል በታች ☐

ሰ) ዲግሪ ☐

ሐ) ስርተፍኬት ☐

ር) ሀላተኛ ዲግሪና ከዚያ በላይ ☐

ስለምርት ገቢያው መጠየቅ

1) የኢትዮጵያ ምርት ገቢያ መቋቋም ተገቢ ነው ይላሉ?

ሀ. አዎ ☐

ለ. ተገቢ አይደለም ☐

ሐ. አላውቅም ☐

2) እንደ ኢትዮጵያ ምርት ገቢያ አባልነትዎ፣ እርሶዎና የእርሶ ተቋም ከምርት ገቢያው

ህግና ደንብ በደንብ ያወቁታል?

ሀ. አወቃቀለሁ ☐

ለ. አላወቃወም ☐

ሐ. በትንሹ አወቃቀለሁ ☐

3) የምርት ገቢያውን የስራ አፈፃፀም እንዴት ይገመገማል?

ሀ . ተስፋ ሰጭ ☐

ለ . ተስፋ አስቆራጭ ☐

ሐ . መልስ የለኝም ☐

4) በግብይት ወቅት የሚጠየቁ ችግር አለ ይላሉ?

ሀ . አዎ አለ ☐

ለ . የለም ☐

ሐ . መልስ የለኝም ☐

5) ለመጠየቅ ተ.ቁ. 4 መልስዎ አዎ አለ ካሉ እባክዎ ችግሮችን ይጥቀሱልኝ?

6) የመንግስት ፖሊሲ ለኢትዮጵያ ምርት ገቢያ ትስማሚ ነው ይላሉ?

ሀ . አዎ ☐

ሐ . መልስ የለኝም ☐

ለ . አይደለም ☐

7) የኢትዮጵያ ምርት ገቢያ መሰረታዊ ችግር ምንድነው ይላሉ?

8) ለመጠይቅ ተ.ቁ 7 መልስዎ አዎ ከሆነ እንዴት ነው ተስማሚ የሆነ ወ?

9) ወቅታዊ የሀገሪቱ የኢኮኖሚ ሁኔታ ለምርት ገበያው ተፅዕኖ አለው ይላሉ ?

ሀ . አዎ ☐

ሐ . መልስ የለኝም ☐

ለ . አይደለም ☐

10) ለመጠይቅ ተ.ቁ 9 መልስዎ አዎ ከሆነ እባክዎን ተፅዕኖውን ያብራሩልኝ?

11) የሀገሪቱ የመከላከያ ልማት ለምርት ገበያው ተፅዕኖ አለ ይላሉ?

ሀ . አዎ ☐

ሐ . መልስ የለኝም ☐

ለ . አይደለም ☐

12) ለመጠይቅ ተ.ቁ 11 መልስዎ አዎ ከሆነ እባክዎን ተፅዕኖዎን ያብራሩልኝ?

13) አሁን በስራ ያሉ መጋዘኖች በቂ ናቸው ይላሉ

ሀ. አዎ ☐

ሐ. መልስ የለኝም ☐

ለ. አይደለም ☐

14) በፍጥነት መፍትሔ ያሻቸዋል የሚሉት ችግር አለ?

ሀ. አለ ☐

ለ. የለም ☐

ሐ መልስ የለኝም ☐

15) ለመጠለቅ ተ.ቁ.8 መልስዎ አለ ከሆነ እባክዎን ችግሮቹን ያብራሩልኝ

16) ለመጠይቅ ተ.ቁ.8 መልሶ አለ ከሆነ \ የችግሮቹ መፍትሔ ምን ይሆናል?
ይላሉ?

17) የኢትዮጵያ ምርት ገቢያ የወደፊት ዕጣ ፈንታው ምን ይሆናል ይላሉ?

ሀ. ብሩህ ለ. የማይሻሻል ሐ. ውድቀት

18) ለመጣይቅ 11 መጻሕፍት ብሩህ ነዉ ካሉ ለምንድን ነዉ ይህን ያሉት?

19) የወቅቱ የኢትዮጵያ ምርት ገቢያ ጥንካሬ ምንድን ነዉ ይላሉ?

20) የምርት ገቢያዉን ደካማ ጎን ሊጠቅሱልኝ ይችላሉ?

1.

2.

3.

4.

21) በተጨማሪ ስለምርት ገቢያዊ የሚገኙት ነገር ካለ?

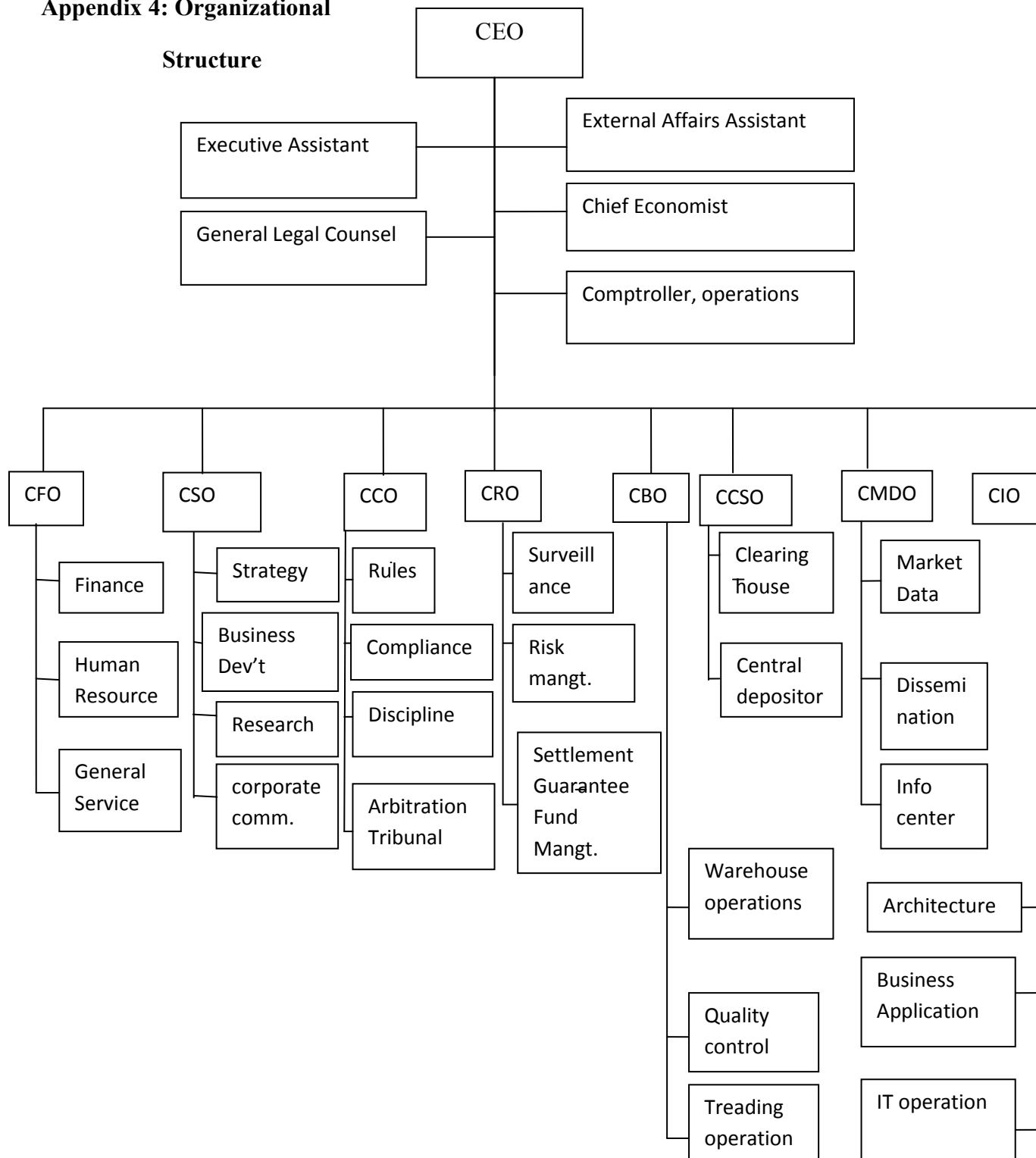
ስለትብብርዎ አመሰግናለሁ!

Appendix 3

Interview Questions for officers of the ECX

1. How many clients do you have under your business in ECX?
2. What special benefits do your clients enjoy while working with your company?
3. How do you define the current infrastructure development which is the foremost point for commodity exchange?
4. What were the major problems ECX encountered in the previous three years of operation?
5. What other challenges that you faced about products?
6. There is a rumor as exporters are in convenient with ECX. How far is this true?
7. What challenges that you faced about infrastructure of commodity exchange?
8. What is the outlook of ECX?

Appendix 4: Organizational Structure



Appendix 5: Selected GTP Targets

Sector/Indicator	Baseline 2009/10	Plan Target 2014/15
The Macro Economy:		
Real GDP growth rate (%)	11	11.2
Per Capita GDP at Current Market Prices(USD)	401	698
Total Consumption Expenditure (PFCE) as % of GDP	90.9	85.0
Gross Domestic Saving as % of GDP	9.4	15.0
Gross Domestic Capital Formation as % of DGP	23.7	30
Export of Goods and Non-Factor Services as % of GDP	10.5	31.2
Imports of Goods and Non-Factor Services as % of GDP	27.3	45.7
Resource Balance as % of GDP	16.8	14.5
Domestic revenue and Grants as % of GDP	16.8	19.7
Domestic revenue as % of GDP	12.9	17.3
Tax revenue as % of GDP	9.7	15.3
Total poverty-oriented expenditure as % of GDP	12.5	15.7
Capital Expenditure as % of GDP	10	13.0
Recurrent Expenditure as % of GDP	8.5	8.6
Overall Balance Including Grants as % of GDP	1.6	2.0

GTP.....con'd		
External (Net) as % of GDP	0.8	0.6
Domestic (Net) as % of GDP	0.7	1.3
Poverty & Welfare		
Total poverty Head Count (%)	29.2	22.2
Food Poverty Head Count (%)	28.2	21.2
Key Sectors:		
Agriculture and allied activities	6.4	7.3
Agriculture value added (in billion Birr)	58.4	86.2
Number of extension service beneficiaries (thousands)	5,090	14,640
Coffee export (Ton)	319,647	600,970
Meat Export (000 Metric Ton)	10	111
Number of household participating productive Safety net program(million)	7.8	1.3
Graduates from Safety net program	730	-
Industry	13.7	21.4
Sugar product(000 ton)	17,712	42,516
Growth Rate of Industry Value Added (%)	13.3	19.1
Textile and garment industry export (in million birr)	21.8	100
Total capacity to produce cement (million ton)	2.7	27

GTP.....con'd		
Metal consumption per capita (kg)	12	34.7
Infrastructure Development		
Roads:		
Road network	49,000	136,000
Average Time taken to all-weather road (hours)	3.7	1.7
Road density (km/1000 km ²)	44.5	123.7
Road density (km/1000 population)	0.64	1.54
Roads in acceptable condition (%)	81	86.7
Proportion of Area further than 5 km from all weather roads (%)	64	29
Rail way		
Rail way network	-	2000
Power:		
Electricity coverage	41	75
Power generating capacity(mg wt)	2000	8000
Water		
Potable water coverage (%)	68.5	98.5
Urban potable water coverage (within 0.5km)	91.5	100
Rural potable water coverage (within 1.5km)	65.8	98

GTP.....con'd		
Developed irrigable land (%)	2.5	15.6
Telecom:		
Mobile density (per 100)	1.5	8.5
Telephone service coverage with in 5km (%)	49.3	90
Fixed telephone subscribers (in millions)	1.2	8.6
Mobile Telephone subscribers (in millions)	7.6	64.4
Internet service subscribers(in millions)	0.20	7.17
Urban Development & Housing		
Reduce urban unemployment rate in towns under integrated housing development (000)	176	400
Provision of housing and basic services (Number of Housing Units)	213,000	700,000
Reduction of slum areas (%)	40(2000)	20
Education		
Gross Primary Enrollment Ratio (1 to 8) (%)	94.2	100
Primary school ratio of girls to boys	0.93:1	1:1
Primary Pupil: text book ratio	1.25:1	1:1
Primary Net enrollment ratio	87.9	97
Secondary school gross enrollment ratio	38.1	75

GTP.....con'd		
Government higher institution intake capacity (under graduate)	185,788	467,000
TVET intake capacity	430,562	1,127,330
Adult literacy rate (%)	36	95
Health		
Primary Health Services Coverage (%)	89(2008/09)	100.0
Under Five Mortality Rate (per 1000	101	67
Maternal mortality rate (per 100,000)	590	267
Contraceptive Prevalence Rate (CPR) (%)	55	80
Proportion of Births Attended by Skilled Health Personnel (%)	25	60
DPT 3 vaccination coverage (%)	81.9	90
Percentage of Households in Malaria Prone Areas with ITNs(%)	100	100

Source: Growth and Transformation Plan (GTP), 2010