

**ST. MARY'S UNIVERSITY**  
**BUSINESS FACULTY DEPARTMENT OF**  
**ACCOUNTING**

**THE PRACTICE OF INVENTORY MANAGEMENT IN**  
**ETHIOPIA COMMODITY EXCHANGE IN CASE OF**  
**HAWASSA & HUMMERA WAREHOUSES**

**BY**  
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**JUNE 2014**  
**ADDIS ABABA**

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HAWASSA & HUMMERA WAREHOUSES**

**A SENIOR RESEARCH SUBMITTED TO THE DEPARTMENT  
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## **Acronyms/Abbreviations**

ECX	Ethiopian commodity exchange
ECEA	Ethiopian commodity exchange Authority
ADLI	Agricultural Development Lead Industrialization
EGTE	Ethiopian Grain Trade Enterprise
CD	Central Deposit
DN	Delivery Notice
GIN	Goods Issue Note
GRN	Goods Received Note
LIC	Lead Inventory Controller
PUN	Pick Up Notice
WHR	Warehouse Receipt
WHO	Warehouse Operations

## **ABSTRACT**

The Ethiopian Commodity Exchange was established to revolutionize Ethiopian agriculture and transform the economy through a dynamic, efficient and transparent marketing system. Hence the overall objective of this study is to assess the practice of Inventory Management system and impact on financial performance of ECX.

The general objective of the study is to assess the practice of inventory management of ECX in case of Hawassa & Hummera warehouses and its impact on financial performance of ECX.

In order to meet these objectives, the study used the total population is eleven and we have been taken the whole data.

The method of data gathering was by using structured interview and telephone Interview, observation and companies report are used for data collection. And the data was analyzed through descriptive analysis. The result shows that Ethiopian commodity exchange is facing commodity shortfall due to moisture loss of commodity and human errors with intention and un intention and the company use the same standard moisture loss adjustment for all type of commodity with out considering commodity type and weather conditions were found to be some of constraints that hinder for the smooth functioning of in the exchange.

# CHAPTER ONE

## INTRODUCTION

### 1.1. Background of the Study

Any stock that a firm keeps to meet its future requirement is called “Inventory”. The basic reason for handling inventory is to keep stock to arrive at the time when they are actually required. (Zipkin, 2000)

Commodity may be spoiled and lost during delivery, storage and distribution. Many of these losses can be reduced through improved handling and storage management practice. Inventory management consists of planning, organizing and control of activities that relate with the flow of commodity and inventory in to the organization. These related activities may include activities such as proper planning of Commodity inventory, better management of Stock associated with inventory system .(Kouvelis, 2002).

ECX has 17 warehouses across the country, Found at Addis Ababa (Saris), Nazareth, Dire Dawa, Bure, Nekempte, Hummera, Hawassa, Jimma, Bedelle, Dilla, Gimbi, Gondar, Metema, Asosa, Sodo, Bonga and Kombolcha. From those warehouses we have selected Hawassa and Hummera because these sites have more inventory problem when comparing to others (ECX profile).

Therefore, this study aims to investigate inventory management practices of Ethiopian Commodity Exchange. The research provides possible solutions for the companies affecting inventory management risk of the Hawassa and Hummera Warehouses.

### **Background of the organization**

The Ethiopia Commodity Exchange (ECX) is 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 the exchange in Addis Ababa, Ethiopia, on April 24, 2007.

Ethiopia Commodity Exchange (ECX) is one of the exchange markets available in developing countries. Currently, Ethiopia is following a development policy of Agricultural Development

Lead Industrialization (ADLI). This policy of the government encourages both farmers and private investors to produce market oriented commodities so as to have industrial development in the long run. However, such a vision can only be achieved when there is an appropriate marketing system, regulations, and policies.

The government has organized Ethiopia Commodity Exchange authority through proclamation in order to eliminate market related problems and to facilitate transparent, efficient, and innovative marketing system to protect the interests of both producers and consumers. ECX's model is the first of its kind in Africa with its end-to-end integrated system of central trading, warehousing, product grade certification, clearing, settlement, delivery, and market information dissemination.

ECX started live trading on April 24, 2008. It provides a market place where buyers and sellers can come together to trade and be assured of quality, delivery, and payment. The exchange is a private-public undertaking with capital investment from its main promoter, Government of Ethiopia, and membership seats privately owned by trading and intermediary members.

The Exchange is jointly governed by a private-public board of directors and managed professionally by an internationally recruited team. Whereas the Exchange has been engaged in warehouse management in its warehouses across the country the Exchange exerts an ongoing effort to address the changes in its warehouse operations and continuous efforts have been made to incorporate changes in the services, technologies, and technical procedures.

ECX warehouses provide the following services:

- Sampling, Grading, weighing and certifying of the grain and coffee coming to each warehouse using equipment provided by ECX according to ECX established standards
- Weighing, receiving and issuing commodities which matches ECX automated system
- Recording system for incoming and outgoing grain and daily stock position reports  
Proper handling of the commodity at the warehouse (store layout stacking, bin no, inventory management)
- The Hawassa warehouse is the Second ECX's branch, located 275km away from Addis Ababa and Hummera Warehouse also located 988 km from Addis. The operation began in Nov, 2009 & March, 2009. The computer facility is directly linked with the central computer of the head office.

ECX receive the following commodity:-

- Coffee
- Sesame
- Pea beans
- Others (optional)

## **1.2. Statement of the Problem**

An efficient system of inventory management will lead to significant reduction in expenses (Zipkin, 2000).

Inventory is one of the most active elements in an operation and it is necessary not only for the firm's business operation but also for customer satisfaction. Inventory management refers to the method and procedure used to provide reasonable assurance regarding the achievement of objectives in the following categories: safe guarding assets, ensuring validity of financial records and reports, promoting adherence to policy, procedures, regulations and laws, and promoting effectiveness and efficiency of operations (Handley and Within, 1979).

The inventory management requires latest and relevant inventory management systems and techniques for each company (Zipkin, 2000). As we identified from annual report of ECX Company, the financial performance is declining starting from the beginning year of Operation (2008).The ECX Company made a compensation payment to ECX Members/Commodity Buyers/ every year due to shortage of commodity in the warehouses; this leads the company to loss. Due to this research team was initiated to evaluate the inventory management system of ECX in order to identify the real cause of commodity losses and its impact on financial performance from the beginning period (2008) of the company.

## **1.3. Research Questions**

In order to identify the main causes of the research problem the following possible questions were raised and solved.

1. How is the Firm controlling its Inventory?
2. How is the firm managing expected losses from its inventory nature?
3. To what extent are the firm's policies and procedures over inventory management system strong and convenient?
4. How is the firm staffing its departments which have inventory related functions?

5. What seems the impact of the inventory management problem on the firm's financial performance?

## **1.4. Objective of the study**

### **1.4.1. General Objective**

The general objective of the study was to assess the practice of inventory management system and its impact on financial performance of ECX.

### **1.4.2. Specific objectives**

In order to achieve the general objective, the research was conducted based on the following specific objective

1. To identify how the firm is controlling its inventory
2. To identify the methods of a firm is implementing to manage the expected losses of its inventory.
3. To evaluate how strong and convenient are the firm's policies and procedure over inventory management system.
4. To examine the availability of skilled and experienced employees in inventory related function of the firm.
5. To identify the impact of inventory management problem on the firm's financial performance.

## **1.5. Delimitation of the Study**

Even if there are regional sites in the country, the study is bounded to Hummera and Hawassa since it is difficult to include all sites of the regional due to time and financial constraints. the scope of the research will be delimited to these sites because these sites have more inventory shortage problem when compare to others.

## **1.6. Significance of the study**

The study will assess on the Inventory practice and inventory management challenges of the Ethiopia commodity exchange that hindered the smooth functioning of the exchange.

Hence, such studies are important for the success of lately emerged Ethiopia commodity exchange. Policy makers and planners can also draw lessons on the issue under consideration

for better success in the field. Besides adding a brick to the body of knowledge on the subject, the output of the study could also be informative for development practitioners and donors. The research will be used to establish a framework for subsequent studies that can work with more comprehensive data sets. Furthermore it can stimulate further research, thus keeping sustained interest in the area of the practices of inventory management system.

## **1.7. Research Design and Methodology**

### **1.7.1. Research Design**

While conducting the proposed research, descriptive research has been performed, these methods are selected because in order to get background knowledge and better understand, and also explain the reason of some facts.

#### **Sources of data**

The source of data for this study comprises both primary and secondary data sources.

#### **Sources of Primary data**

Primary data have been gathered through structured interviews with concerned staff of the ECX and through observation.

#### **Sources of Secondary data**

In order to support the reliability of the data collection, supplement data have been acquired from referring the company's website, procedural manuals and companies yearly report..

### **1.7.2. Population and sampling design**

Because of the details study and small number of staff on the areas, target population have been ECX's Warehouse Operation Manager (1), Finance Manager (1), And Lead Inventory Controllers (12). This takes all censuses (14), of the specified population as a target for the research.

### **1.7.3. Method of Data Collection**

The method of data collection used was face to face interview with open ended questions, conducted with Operation and finance managers at the head office (at head office there is Warehouse Operation department which control all sites across the country) but for lead inventory controllers at Hawassa and Hummera site have been taken through telephone because of the remoteness of the area. To assure the quality of the data, direct observation was



conducted at Saris Warehouse, because ECX has the same inventory management policy and procedure for all branches.

#### **1.7.4. Data Analysis Method**

After all the necessary data are collected, classified, summarized & analyzed by using descriptive analysis. Such collected data are presented in table form; frequency and percentage distribution form of descriptive analysis are used to describe the existing facts of the firm's inventory management practice.

### **1.8. Organization of the Study**

The research paper has been organized into four chapters. The first chapter provided a general introduction, statement of the problem, the research objective, scope and limitation of the study, research design and methodology, source of data, sample, sample size, sampling technique, data collection instruments and data analysis. The second chapter deals with review of literature to the research. The third chapter covered data presentation and analysis while the fourth chapter has the Summary, conclusion and recommendation.

# **CHAPTER TWO**

## **REVIEW OF RELATED LITERATURE**

### **2.1. Theoretical Literature**

#### **2.1.2. Definition and Concepts of Commodity Exchange**

Commodity exchange is defined as a market in which multiple buyers and sellers trade commodity-linked contracts on the basis of rules and procedures laid down by the exchange. And in an increasing number of developing countries, such exchanges typically act as a platform for trade in Spot or futures contracts, or for standardized contracts for future delivery. (Celeste Aida M.F. 2010)

(Chicago Mercantile exchange, 2011) defined as an auction market where contracts on commodities are available for purchase or sale at an agreed price and for delivery on a specified date. Or it is an association or a company or any other body corporate organizing futures trading in commodities for which license has been granted by regulating authority.

#### **2.1.3. Contracts of Commodity Exchange**

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 (such as wheat, barley, sugar, maize, cotton, cocoa, coffee, milk products, pork bellies, oil, metals) and contracts based on them. These contracts can include spots, forwards, futures and options on futures.

Commodity exchanges usually trade futures contracts on commodities, such as trading contracts to receive something and it protects the farmer (seller) from price drops and the buyer from price rises. Speculators also buy and sell the futures contracts to make a profit and provide liquidity to the system. (Bose, S. 2009)

### **2.1.3.1. Spot Contract**

A spot contract is an agreement between a buyer and a seller at time zero, when the seller of the asset agrees to deliver it immediately for cash and the buyer agrees to pay in cash for that asset. Thus, the unique feature of a spot contract is the immediate and simultaneous exchange of cash for securities, or what is often called delivery versus payment..

### **2.1.3.2. Forward Contract**

A forward contract is a legally binding agreement between two parties calling for the sale of an asset or product in the future at a price agreed upon today. The terms of the contract call for one party to deliver the goods to the other on a certain date in the future, called the settlement date. The other party pays the previously agreed-upon forward price and takes the goods. Forward contracts can be bought and sold.

The buyer of a forward contract has the obligation to take delivery and pay for the goods; the seller has the obligation to make delivery and accept payment. The buyer of a forward contract benefits if prices increase because the buyer will have locked in a lower price. Similarly, the seller wins if prices fall because a higher selling price has been locked in. Note that one party to a forward contract can win only at the expense of the other, so a forward contract is a zero-sum game.

### **2.1.3.3. Future Trading Contract**

Futures contracts are an improved variant of forward contracts. They are agreements to purchase or sell a given quantity of a commodity at a predetermined price, with settlement expected to take place at a future date. The futures contracts as against forwards are standardized in terms of quality and quantity, and place and date of delivery of the commodity.

Exchange are largely used as risk management or hedging mechanism on either physical commodity itself or open positions in commodity stock. This purchase or sale of commodities must be made through a broker or trading member who must be a member of the exchange and the trade should be done under the terms and conditions of the exchanges.

Due to the bulky nature of the underlying assets, physical settlement in commodity derivatives creates the need for warehousing, the quality of the asset underlying a contract can vary largely and this becomes an important issue to be managed. Participants of a commodities exchange are not free from risk.

In futures contracts, inexperienced investors may face price risk as all futures prices respond to many factors. Such factors may include unexpected high inflation, general strikes, natural calamities, reports on economic forecasts, politics and even on rumors and many other internal and external matters. The factors that can influence commodities prices may occur any time. (Bose, S. 2009)

#### **2.1.4. Functions of Commodity Exchange**

The purpose of a commodity exchange is to provide an organized marketplace in which members can freely buy and sell various commodities in which they have an interest. The exchange itself does not operate for profit. It merely provides the facilities and ground rules for its members to trade in commodity futures and spots and for non-members also to trade by dealing through a member broker and paying a brokerage commission.

In addition commodity exchange reduces transaction costs by offering services at lower cost than that which participants in the commodity sectors would incur if they were acting outside an institutional framework. These can include – but are not limited to – the costs associated with finding a suitable buyer or seller, negotiating the terms and conditions of a contract, securing finance to fund the transaction, managing credit, cash and product transfers, and arbitrating disputes between contractual counterparties. Therefore, by reducing the costs incurred by the parties to a potential transaction, a commodity exchange can stimulate trade.

Moreover, properly functioning commodity exchanges can promote more efficient production, storage, marketing and agro-processing operations, and improved overall agriculture sector performance. Commodity exchanges can be an important part of interventions to address the identified constraints because of the following economic benefits:

- A. Exchange trading generally saves time and cost of transacting as well as reduces risks faced by counterparties, who are assured of a fair deal (arising from competitive trading), guaranteed payment for what is sold and delivery of what is paid for.
- B. The system creates a means by which sellers and buyers are brought together to trade on the basis of reliable information on the quality, quantity and location of commodities to be traded. This reduces the cost of sourcing produce for traders and processors, while lowering the cost of accessing markets for farmers, especially for premium quality produce. It avoids the high-cost and time-intensive process of physical sampling of goods before purchase, which is predominant in the informal agricultural trade in the country. This is because the quality and quantity of the traded

product is assured, thus making „sight-unseen“ trade possible, implying sellers can sell to buyers in a wider geographical area than their immediate location.

- C. Guarantee of delivery by the exchange, based on the guarantee by warehouse operators, reduces the risk of non-performance of trade contracts. Sellers are also assured of payment for the commodity sold, with systems being in place to minimize the risk of default by buyers, especially when the market moves against them. The greater security in trade transactions provided, leads to significantly lower cost (including time lost) associated with contract enforcement, especially where litigation is time consuming and expensive.
- D. Increased availability of inventory finance is also likely to improve non-traditional exports by reducing uncertainty regarding contract performance faced by importers. This will be through enabling exporters to stockpile using inventory finance, thereby assuring more regular supply and to guarantee delivery on schedule of commodities of known quality and quantity.
- E. Exchange trading improves collection and distribution of market information to all players. Prices on the exchange, discovered through a transparent process, are widely disseminated. Brokers, who are expected to facilitate trade and provide market advice to their clients, receive and analyses price-sensitive market information, thereby assisting buyers and sellers in making trade decisions.
- F. The exchange represents a transparent and often reliable means by which lenders can liquidate collateralized commodities in the event of default by the borrower. Therefore it facilitates access to commodity finance.

As the exchange matures from a spot market into offering various risk management instruments, including futures and options contracts, lenders will use such instruments to hedge price risks. By so doing, they will reduce credit risks, leading to lower cost of borrowing. The formal market in commodities will also attract investors intending to profit from price movements. Their involvement will bring added liquidity to the market to the benefit of all players. (Valeria Morua Hernandez.2009)

### **2.1.5. Trading System of Commodity Exchanges**

A movement towards electronic trading has taken place in recent years. This has been driven by technological advances and by the advantages in speed, cost, transparency and functionality that such trade typically offers over the established “open outcry” form of trading, which brings traders together on a trading floor. And in addition Computer

technology has the potential to increase the efficiency, transparency, and liquidity of the commodity markets by increasing the speed of transactions and lowering transaction costs. Electronic trading typically brings a number of other potential advantages. These include limiting informational asymmetries between trading interests, allowing potentially longer trading hours, and increasing access to markets regardless of one's geographical location.

It was also explained by (Alemu D. & M. Gedion, 2012). That trading on a commodity exchange is like a continuous two-way auction, in which offers 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.

#### **2.1.5.1. Clearing and Settlement of Services**

A clearing and settlement system that assures payment to sellers as well as minimizes overexposure of counterparties is essential. Financial institutions which are members of the exchange usually offer clearing services. Reliable and timely dissemination of such market information as would ensure informed decisions by various parties, local and regional, who intend to trade. Informed decisions are critical to market efficiency.

Clearing is the process of determination of obligations, after which the obligations are discharged by settlement. Settlement is a two-way process that involves legal transfer of the title to funds and securities/other assets on the settlement date. The clearing bank services are a highly time critical activity as delays directly impact the members/exchange. Banks can play an important role in settlement of obligations in the overall ecosystem including exchanges, members, clients, custodians, etc. This is highly transactional nature of the business. Dedicated infrastructure, trained manpower, and use of technology are the key parameters to doing this business

And the banking settlement system plays a crucial role in the overall risk management of the exchange mechanism, wherein daily settlement of trades/obligations, ability to manage fund flows in volatile days, coordination with exchanges and members, etc. contribute towards effective functioning of the exchange mechanism. Apart from clearing services, banks also provide fund and non-fund based facilities to the members of the exchange for managing their working capital requirements and, thus, earn revenues through float funds, interest earned on overdrafts/loans, commission income, etc.

All members of an exchange are required to clear their trades through the clearing house at the end of each trading session, and to deposit with the clearing house a sum of money (based on clearinghouse margin requirements) sufficient to cover the members debit balance (Alemu D. & M. Gedion, 2012).

### **2.1.5.2. Price Determination**

Prices of commodity exchange are determined solely by the interaction of 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. Buy and sell orders, which originate from all sources and are channeled to the exchange trading floor for execution, are actually what determine prices. These orders to buy and sell are translated into actual purchases and sales on the exchange trading floor, and according to regulation this must be done by public outcry across the trading ring or pit and not by private negotiation. The prices at which transactions are made are recorded and immediately released for distribution over a vast telecommunications network (Bose, S. 2009).

As cited in Chicago Mercantile Commodity Exchange trading futures contracts, it is essential that you know how to make a reasonable estimate of what will happen to prices in the future. Of course, no one can know for certain what prices will be, but it pays to have an educated opinion as to whether prices will rise or fall (Chicago Mercantile exchange, 2012).

### **2.1.5.3. Market Information System**

According to (Alemu D & Gedion (2012) the core attributes of an exchange is to enhance 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, commodity exchange does not require an external market information system as a pre-requisite to its proper functioning.

A market information system is a service that involves the collection on a regular basis of information on prices and, in some cases, quantities of widely traded agricultural products from rural assembly markets, wholesale and retail markets, as appropriate, and dissemination of this information on a timely and regular basis through various media to farmers, traders, government officials, policy-makers and others including consumers.

Market information helps potential buyers and sellers to make market decisions and gives them the assurance that the market is transparent and can handle their market needs. Once the market is established, market information is disseminated by word of mouth, as market user's travel to and from the market to other locations. As the market evolves, market information is also often carried by newspapers that are distributed within the market's catchment area; today such information can also be disseminated by radio, TV telephone links and via the web.

#### **2.1.5.4. Warehouse and Quality Grading System**

Warehouse can be defined as a place in which goods or merchandise are stored; a storehouse. And the development of warehousing has positive knock-on effects up and down the supply chain. The warehouse receipt system (WRS) provides a platform for the introduction of other institutional innovations, notably grading, contracting and exchange trading. It facilitates public procurement as national and international agencies can simplify their activities by dealing in paper such as warehouse receipts, rather than trade directly in physical commodities.

WRS is also a valuable instrument for financing agricultural commodity chains, especially in countries where the shortage of alternative forms of collateral constitutes one of the most important obstacles in access to finance. Warehouse receipts are issued by warehouse operators as evidence that specified commodities of stated quantity and quality have been deposited at particular locations by named depositors. The warehouse operator holds the stored commodity by way of safe custody; implying he is legally liable to make good any value lost through theft or damage by fire and other catastrophes but has no legal or beneficial interest in it.

The quality of warehouse and storage management skills tends to be highly variable in most developing countries. Improving professional skills in the warehousing industry is necessary if storage losses are to be kept at a minimum. Similar training and capacity building is required to enable traders and processing companies to utilize the WRS in cost-effectively managing their inventories

According to (Alemu D & Gedion (2012) 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 and the functioning of the exchange. (Alemu D. &M Gedion. 2012)

## **2.2. Inventory**

Inventory is one of the most significant items for many companies. It can be defined as tangible asset that is intended for sale in the ordinary course of business for sale. Inventory is reported on the balance sheet as current Asset because it will be converted to cash (sold) or consumed within one year or the operation cycle, whichever is longer.

For most companies the expenses associated with financial and maintain inventory are substantial part of the cost of day to day business. Inventories are Assets held for daily business. It includes finished good supplies, raw materials, work in process and other types of goods. For various reasons, management is vitally interested on inventory planning and control. An accurate accounting system with up to date records is essential. It unsalable items have accumulated in the inventory a potential loss exist sales and desired style quality and quantity. Also business must monitor inventory levels carefully to limit the financing cost of large inventory. (PoulH.Zipkin, 2000)

## **2.3. Inventory Policy**

Inventory policy consists of guidelines concerning what to purchase, manufacturing, any other business when to take action and in what quantity. It also included decision regarding inventory position and placement at plants and distribution centers. For example some firms may decide to postpone inventory positing by maintaining stock at plant. The development of sound inventory policy is the most difficult issue within over all inventory management. The second inventory policy element concerns inventory at each distribution center independently. The other extreme considers inventory interdependent across distribution sits by managing inventory centrally. (PoulH.Zipkin, 2000)

## **2.4. Inventory Procedures**

Two methods may be employed to ascertain the inventory quantities on hand the periodic system and the perpetual system. Both systems may be employed simultaneously for various inventories.

The periodic inventory system relies on physical count of goods on hand as the basis for control, management decision and financial Accounting. Although this procedure may give accurate results on a specific date, there is no continuing recorded of inventory.

The perpetual inventory system requires a continues record of all receipts and withdrawal of each item of inventory .The perpetual records sometimes is kept in terms of quantities only . This procedure provides a better basis for control than is obtained under the periodic system. When the perpetual system is used, a physical count of the good owned by the business enterprise must be made periodically to verify the accuracy of inventory reported in the accounting records. Any discrepancies discovered must be corrected so that the perpetual inventory records are in agreement with physical count. (PoulH.Zipkin, 2000)

## **2.5. Inventory Management**

Inventory management is primarily about specifying the shape and percentage of stocked goods. It is required at different locations within a facility or within many location of supply network to precede the regular and planned course of production and stock of commodity.

The scope of inventory management concerns fine line between replenishment, lead time, carrying cost of inventory asset management, inventory forecasting, inventory valuation, inventory feasibility and future inventory price forecasting. Physical inventory is available physical space for inventory, quality management, replenishment, return and defective goods forecasting. Balancing the scope requirements leads to optimal inventory levels which is an ongoing process as the business needs shift and react to the wider environment (PoulH.Zipkin, 2000)

## **2.6. Objectives of Inventory Management**

A fundamental objective of a good system of inventory control is to be able to place an order at the right time from the right resource to acquire the right quantity and the right quality. Inventory management have many objectives, it is used to ensure adequate stock and end over is made by inventory control to see that any department will get the commodity or other necessary item as and when required. Hence an effective system of receiving, storage and maintenance is effectively arranged so that enough stock is available on hand, to minimize inventories on hand; the next objective of inventory control is to minimize inventory on hand. It has to be ensured that kept and unnecessary capital is not locked up, but it must be consistent with adequate stock, so that production is not disrupted, To maintain continuity in production; the supplies of commodity, consumables stores etc. must be stocked to be optimal

level, so that continuity of operation is maintained. The inventory control ensures that making is completed as per schedule. Maximum use of storage capacity; one of the objective of inventory control is to make maximum use of storage capacity available. Proper storage of commodity, inventory control function includes supervision and control it is necessary that commodity of a particular type is required is immediately available. Efficient storage is made possible due to inventory control. (PoulH.Zipkin, 2000)

## **2.7. The Benefits of Inventory Management**

Inventory management increases profitability- Forecasting, controlling & managing inventory increases productivity, while reducing costs, resulting in greater profitability .Accuracy improvements & time savings, in addition to the reduction of fixing costly mistakes, can result in considerable cost savings across an organization.

Inventory management improves decision-making Rapid, accurate data collection enables access to real-time business intelligence across all areas of your company Issue, event and project management tracking integrated with an inventory management system enables all associates to proactively identify & solve business issues. It increases customer satisfaction Responding to trends, seasonality, promotions & changing marketing conditions results in having the right products in stock for customers Properly identified products available to load enables customers to order & receive the correct Commodity quickly Customer service tools integrated within an inventory managements equips the entire company to deliver consistent, personalized care for your customers. (PoulH.Zipkin, 2000)

### **Top 10 Benefits of Great Inventory Management**

Inventory management helps businesses be successful. That's as much of an understatement as saying the sun's surface is warm. Inventory management is a crucial part of any business' success.

1. **Inventory Balance.** Good inventory management helps you figure out exactly how much inventory you have. This makes it easier to prevent product shortages and keep just enough inventories on hand without having too much.
2. **Accurate Planning.** Using smart inventory management, you can stay ahead of the demand curve, keep the right amount of products on hand and plan ahead for seasonal changes. This goes back to keeping your customers happy all year long.
3. **Employee Efficiency.** You can empower your employees to help you manage inventory. Training employees to use barcode scanners, inventory management

software and other tools helps them make better use of their time, and it helps your business make better use of its resources, both human and technological.

4. **Inventory Tracking.** If you have multiple locations, then inventory management becomes even more important because you need to coordinate your supplies at each location depending on differences in demand and other factors.
5. **Time Saving.** Inventory management is a great time-saving tool. By keeping track of all the products you have on hand; you can save yourself the hassle of doing inventory recounts to make sure your records are accurate. This once again requires inventory management software. (PanosKouvelis, 2002)

## **2.8. Inventory Control**

Inventory Control is the supervision of supply, storage and accessibility of Commodity in order to ensure an adequate supply without excessive oversupply.

It can also be referred as internal control - an accounting procedure or system designed to promote efficiency or assure the implementation of a policy or safeguard assets or avoid fraud and error etc.

Inventory control not only looks into the physical balance of various commodities, but looks into aspect of minimizing the inventory cost.

Avoiding shortages, avoidance excessive stocking and, increasing inventory turnover are some of the main issues concerning inventory control. (PanosKouvelis, 2002)

### **2.8.1 Inventory Control Model**

The inventory level moves up and down between two set points, the 'minimum level' and the 'maximum level'. Inventory should not exceed the maximum level and should not below the minimum level. The inventory crossing the maximum level means over stocking and when it goes below the minimum level, it could result in stock out. In between two set points, that is, the maximum and the minimum level of inventory, reorder point is set. (G.Handley and T.M Within, 1979)

### **2.8.2 Elements of Inventory Control Model**

#### **❖ Minimum stock level**

The minimum level is the level below which the inventory level is not allowed to fall. In case, for any reason, the stock goes below the minimum level, the matter is reported immediately

and action is taken to ensure that the commodity is received at the earliest with the extra efforts.

#### ❖ **Maximum stock level**

Maximum level is a control point to avoid any extra stock. An attempt is made to avoid excessive receiving that may result in crossing the maximum level. Crossing of maximum reflects inadequate inventory control and should not be allowed without proper analysis of overall benefits. Failure to control maximum level results in non-moving or slow moving Commodity and obsolescence. Inventory turnover would be adversely affected in maximum level is not controlled. The maximum level is fixed by taking into consideration the lead time for the Commodity. (PanosKouvelis, 2002)

### **2.8.3 Inventory Control technique**

There are a number of techniques which play an impotent role in the inventory control program. These techniques are very help full in rationalization of inventory control approach and in formulation of the inventory control policies programs. (G.Handley and T.M Within, 1979)

#### **A. Overhead charges on storage space**

Different types of space are required for storing of various commodities. For example certain Commodity is required to be stored air-conditioned space, and others are part of the overhead cost.

#### **B. Cost of handling facilities**

Store operations involve handing of bulk Commodity, which includes loading and unloading, internal transportation, and shifting. Normally warehouse is equipped wheel-barrows are used in the warehouse for the handing commodity. Equipment requires regular maintenance.

#### **C. Cost of manpower in stores division**

The cost of man power in the stores division depends upon the centralized or decentralized operation of the warehouse more man power is required to manage various activities of receiving commodity, issues of commodity and inventory check if there are number of warehouse or sub-stores. The warehouse location, layout area/size and number influence the inventory carrying cost. If proper attention is not paid to these aspects, the inventory carrying cost will be very high.

## **2.9. Safeguarding Inventory**

Inventory can be one of business most valuable assets, making inventory security crucial in a wide range of industries. inventory can be protected in a number of ways and with a number of tools, including technology, manpower and simple common sense, reviewing a few examples of safeguarding inventory can shed light on common inventory security methodologies, helps to implement the ideal inventory safeguards for business. (J.P saxena, Newdelhiviles. 2003)

### **2.9.1. Security Technology**

Technology can be used to protect inventory from internal and external threats security alarms on doors and windows can alert local policies authorities in the case of a break-in. Advanced locks on doors protecting storage areas can reduce incidents of internal theft as well as break-ins. Security cameras can record theft in progress, helping to identify thieves for local authorities. Cameras can also discourage employees from even attempting to steal inventory in the first place. Advances in technology continue to provide new security options. Smart phones provide new opportunities to monitor security alarms and surveillance systems from anywhere in the world at any time (J.P saxena, New delhiviles. 2003).

### **2.9.2. Inventory Audits**

Inventory audits systematically count inventory on hand and compare it with internal inventory records, receive records and Deliver records to spots incidents of theft, spoilage or other forms of shrinkage. Internal audits can act as a powerful psychological deterrent to internal theft, if employees know that there is random inventory counting they may be discouraged from even think about stealing. (PanosKouvelis. 2002)

## **2.10. Physical Inventory**

Physical inventory is a process where a business physically counts its entire inventory may be mandated by financial accounting rules or the tax regulation. Business may need to count inventory so component parts or Commodity can be restocked. Business may use several different tactics to minimize the disruption caused by physical inventory, Among this tactics inventory control system software is the one, it is a software which can speed up the physical inventory process and the other is perpetual inventory, may be less disruptive-many companies start using cycle count where by certain areas or products are counted on a rotating basis, Doing cycle counts eliminate the need to do a complete inventory count at the end of the year.

Taking a physical inventory count at least once throughout fiscal year is a critical part of internal control procedures. An inventory count can confirm the quantity of inventory for financial statement purposes and can identify source of shrinkage and theft.

There are general guide lines for conducting a physical inventory count; the first is identifying what areas to count, many businesses have a multiple ware houses and indeed multiple areas within the same warehouse. Second establish a count date, if counting is going to verify quantities for financial statement purpose the count date should be close to year end date as possible. Counting is time consuming so doing a count on a busy day is not advisable, pick a day and time of relative calm. Third is deciding who will count usually company staffs are responsible for counting and a supervisor should check counts conducted, to know whether there is discrepancies or not. (PoulH.Zipkin, 2000).

## **2.11. Inventory Turnover**

Inventory turnover is known as inventory turns, stock turn and stock turnover; It is used to measure the inventory management efficiency of a business. In general, a higher value of inventory turnover indicates better performance and lower value means inefficiency in controlling inventory levels. A lower inventory turnover ratio may be an indication of over stoking which may pose risk of obsolescence and increased inventory holding cost. However, a very high value of this ratio may be accompanied by loss of Deliver due to inventory shortage. (J.P saxena, Newdelhiviles. 2003)

## **2.12. Method of pricing inventory at cost**

- **First-In, First-Out(FIFO)**

The FIFO method assumes that goods in which they are received. In other words, it assumes that the first goods received, are the first goods to deliver. The inventory remaining must therefore represent the most recent receives. Another of the FIFO method is that the ending inventory is closer to current cost. Because the first goods in are the first goods out, the ending inventory amount will be composed of the most recent receives. This is particularly true where the inventory turnover is rapid. This approach generally provides a responsible approximation of replacement cost on the balance sheet when price changed have not occurred since the most recent receive. (Weygand,j.j.kieso,d.e and kell, w.g, 1996)

- **Last-in, first-out/ LIFO**

The LIFO method first matches up against revenue and the cost of the last good received. If a periodic inventory is used, then it would be assumed that the cost of the total quantity sold issued during the month would have come from the most recently received. The ending inventory would be priced by using the total units as a basis of computation and disregarding the exact dates involved. (Weygand,j.j.kieso,d.e and kell, w.g, 1996)

## **2.13. Storage of Goods**

The function of storage of goods is performed by the store-keeper. The main functions of store-keeper are receipt, storage and issue of goods. Efficient store keeping of goods requires the consideration of the following points. (Weygand,j.j.kieso,d.e and kell, w.g, 1996)

- i. Checking of goods :- Accepting the goods only after proper checking
- ii. Proper storage system:- a proper system of classification and codification is necessary to prevent mixing of goods

## **2. 14. Maintain of proper Records of Goods**

One of the functions of the store-keeper is to maintain store records entering there in the receipt, issue and balance of the different items of stores. These records are basically for purposes of control and are physical units only. Bin cards and store ledgers are the two important store records. (Weygand,j.j.kieso,d.e and kell, w.g, 1996)

### **2.14.1. Periodic Inventory System**

Under this system inventory is ascertained by physical counting the stock at the end of the year. All the items of inventory are weighted measured or count then listed and priced so as to get the valuation of inventory on that date.

### **2.14.2. Perpetual Inventory System**

This system is defined as the system of recording inventory after each receipt and issue. Under this system, stock registers are regularly maintained. Stock registers given the balances of inventory at any time desired. This system aims at providing a running record of inventories in hand. In this System, stock verification takes place as and when there is a receipt or issue of materials.



## 2.15. Tools of Perpetual inventory system

- ❖ **Bin card:** Bin means a container rack space or shelf where goods are stored by the store keeper. To each bin, a card is attached to show the stock position of the bin.
- ❖ **Continuous stock taking:** - Continuous stock taking is a process of physical verification of each and every item of stores a number of times of each year. The items of store are verified by counting, weight, or measuring and compared with bin card balances. The differences between stock balances as shown by the bin card and stock taking may due to the following reasons. (Weygand,j.j.kieso,d.e and kell, w.g , 1996)
  - Wastage of goods due to improper handling and storage
  - Putting the goods in wrong bins
  - Short or over issue of goods
  - Wrong posting in bins

## CHAPTER THREE

### DATA PRESENTATION AND ANALYSIS

This chapter presents the data collected through researcher's personal interview, observation and from procedure manual. The analysis made on such data through descriptive and explanatory Analysis technique, interpretation is made on the result of analysis to spot out the major findings on the research area. To collect enough data, Interview which contained 16 questions was held, each to be responded by the workers from two departments which are Warehouse Operations and Finance according to their responsibility, 11 respondents was responded successfully and the rest 3 were not able to reach on telephone.

#### 3.1. Analysis of characteristics of respondent

**Table 3.1.1. Respondent Characteristics**

No	Characteristics	Respondent	
<b>1</b>	<b>Sex Group</b>	<b>In number</b>	<b>Percent</b>
	A. Male	10	91
	B. Female	1	9
	<b>Total</b>	<b>11</b>	<b>100</b>
<b>2</b>	<b>Age Group</b>	<b>In number</b>	<b>Percent</b>
	25 – 35	7	64
	36 – 40	3	27
	>41	1	9
	<b>Total</b>	<b>11</b>	<b>100</b>
<b>3</b>	<b>Educational background</b>	<b>In number</b>	<b>Percent</b>
	A. Master	2	18
	B. Degree	9	82
	C. Diploma	0	0
	D. Certificate	0	0
	<b>Total</b>	<b>11</b>	<b>100</b>

<b>4</b>	<b>Work Experience</b>	<b>In number</b>	<b>Percent</b>
	6-4	7	64
	3-2	2	18
	≤ 1	2	18
	<b>Total</b>	<b>11</b>	<b>100</b>

From the above table, item 1 reveals that from the total respondents, 91% were males and the rest 9% were females. These data shows that the representation of female employees was found to be less compared to males. Thus the majority of the people who were in charge are males.

The second item in the above table illustrates respondents' age composition. The majority of respondents, 64% were found to be the first group 25-35 and about 27% of respondents were found to be in the second group of 36-40 years of age. This shows that the majority of respondents were found within the age range of 25-35, this show that the majority of the staff of ECX is dominated by younger.

Item 3 of the above table represents respondents' educational background. The above table shows that the majority of the respondents hold bachelor's degrees 82%. 18% of the participants hold master degrees. The majority of the participants in the sector categories hold a university bachelor's degree in various area of specialization this show that the company has well educated staff.

Item 4 of the above table shows that total work experience; 64% of the participants had more than 4 years work experience. However, people who were in charge of ECX had more work experience.

Generally, respondents profile can show a considerable issue for the study to provide valuable information for the study.

### **3.2. Analysis of finding of the study**

To this study we have been organized data's that are collected in the form of interviewee (both face to face and on phone), from targeted ECX workers. These are: Warehouse Operation Manager, Finance Manager and Lead Inventory controller. Attempts have been made on this study to find answers for question from ECX.

### **3.2.1. Inventory controlling system of ECX**

#### **3.2.1.1. Criteria to receive commodity?**

Concerning criteria to receive commodity, the Warehouse operations manager and Finance Manager responded as, in order to transact in this Exchange buyers or sellers must be member of ECX.

ECX works on the basis of membership seat that is a permanent and transferable right to trade on the exchange. Only members can trade on the exchange which means that non members use the services by negotiation with members of ECX to conduct trading.

Members purchase permanent and freely transferable trading rights known as seats. By owning a seat, members become core stake holders maintaining the integrity of the commodity exchange market place. Together they safeguard the interest of the marketing system. They also bear the liability for all transactions that they conduct on ECX.

As we observe from the Exchange's document also, there are three types of membership in the trading system these are trading member, Intermediary member, and Limited trading member. A Trading Member shall only trade on his own account; An Intermediary Member may trade either on his own account or on behalf of Clients and a Limited Trading Member shall trade on his own account as a Buy-only or as a Sell only.

The advantage to members is enhancing revenue potential through expanding their client base on the network of their associates.

#### **Criteria for Membership**

In order to be a member in Ethiopian commodity exchange one has to fulfill requirements. As to the financial requirements, audited financial statement by an authority-approved auditor, net worth of 500,000.00 Ethiopian Birr (ETB) and 1,000,000.00ETB for trading and intermediate members respectively, able to pay membership seat price of 50,000.00 ETB and 5,000.00ETB annual membership maintenance fee after one year. In addition, provision of refundable security deposit of 200,000ETB for trading, 300,000 ETB for intermediate, 50,000 ETB for limited trading and 100,000 ETB for limited members in ECX Settlement Guarantee Fund for the duration of membership. Limited member are expected to pay annual fee of

5,000 ETB. The other requirements are recognition by the Ethiopian Commodity Exchange Authority as an exchange actor.

To sell agricultural products through ECX, sellers are required to deposit their goods in the ECX warehouses and must be providing a minimum of 1 lot (30 Bags for Coffee and 50 Bags for Sesame) and Maximum order size depend on maximum number of contracts that a Member may transact in a single transaction.

### **3.2.1.2. Information to be recorded on the Goods Received Note?**

As Warehouse operations manager replied: - Arrival of commodities to the warehouse must provide issued voucher from Woreda administrative (which means ECX has 17 Branch across the country and every depositor or seller must deposit their commodity in their near branch, otherwise it is treated as contraband). After verifying the eligibility of the commodity, the voucher information registered in to the data base system, ECX operates an integrated physical delivery management system in which commodities are sampled, graded according to a standardized set of measurements, weighed Weigh commodities and issue Scale Ticket. After checking of the detail information by Lead Inventory controller, commodities are offloaded from trucks to floors of warehouses and then placed according to their stacks.

Once the grading process is completed, the sellers who deposited the commodities are issued an electronic Goods Received Note (GRN) which contain Owner name, Commodity type, Grade of Commodity, number of bags, Kg, lot no, and Stack no is electronically transmitted to the ECX central depository. The Electronic Goods Received Notes are not negotiable, transferable or represent legal title to the deposited commodity. The depositor has to get Electronic Warehouse Receipt issued by the ECX Central Depository in order to establish legal title to the deposited commodity. After creation of Warehouse receipts it can be provided for sell.

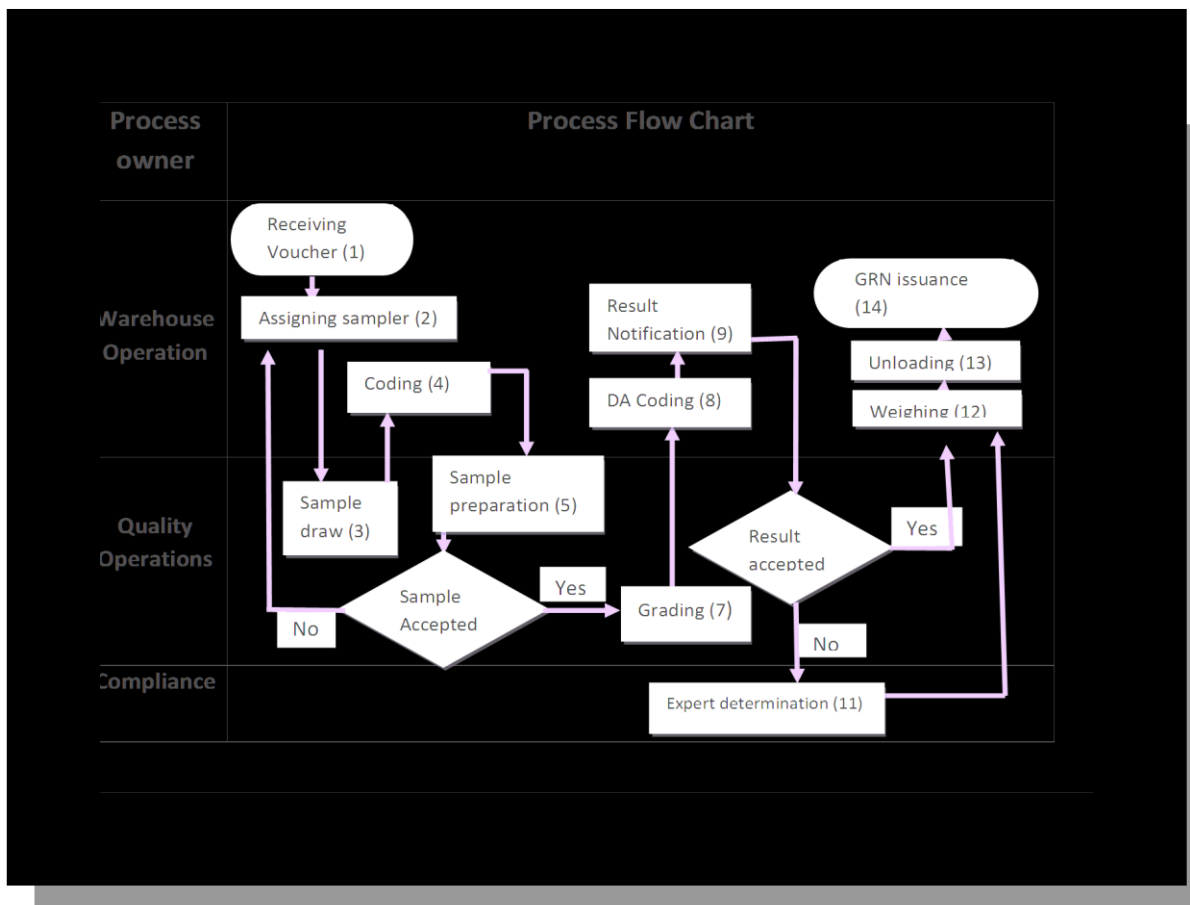


Figure: shows process flow chart Source:- from companies procedure manual

### 3.2.1.3. Issuance of commodity to the buyer

Moreover, interview response from Finance & Warehouse operation managers, At sale the ECX central depository debits the seller's account and automatically transfers title of the commodity to the buyer and issues a delivery notice, on the basis of this commodity can be released to the buyer by preparing delivery notice for the buyer in order to pick the commodity as evidence and prepare pickup notice attached with delivery based on Goods Receive Notice information where the commodity is deposited. Based on First In First Out principle, the specified quantity of commodity is delivered to the buyer. After delivery, Goods Issuance Note will be prepared and signed by the person who receives the commodity.

### 3.2.1.4. How to reconcile the remaining commodity after issuance?

According to lead inventory controllers response In order to ensure the balance of deposited and delivered commodities to manage the remaining amount, shortage and excess commodities, Lead Inventory controller maintain record on bin card that indicates the quantity received and quantity issued. The bin cards consists of dates, commodity grade, number of

bags, Goods Receiving Note number, Goods Issuance Notice number, kilo gram, number of bags, and remaining balance.

To maintain in kind inventory auditing, ensured perpetual based on stack and report the result in stack/grade shortfall or excess of commodities and periodical inventory system based on physical counting and weighing the commodities.

### **3.2.2. How is the firm managing expected losses from its inventory nature?**

#### **3.2.2.1. The major causes of inventory related losses.**

Lead Inventory controllers replied that most of commodity loss occurrence is by moisture loss but the warehouse operation manager agreed that the major cause of shortfall is due to moisture content of the commodity because, Agricultural products can deteriorate for several reasons. These modes of deterioration are affected by both intrinsic or(within) the product and extrinsic environmental or (outside) the product and also Human error with intention, over deliver, poor inventory management, negligence and unintentional (calculated type error), Spillage, and theft.

**Table 3.1.2. Factor of Moisture Losses**

<b>Intrinsic factor</b>	<b>Extrinsic Factors</b>
Moisture or water content	Storage Temperature
Salt and Mineral content	atmosphere
Physical state	Light Exposure

#### **3.2.2.2. Practices of mitigating inventory losses**

An interview response from warehouse operations and finance manager, the first key challenges of Ethiopian commodity exchange is shortfall of commodity.

The firm uses moisture loss adjustment techniques to manage expected loss, during the storage period for seller 0.1376% of kg and for buyer 0.0344% of kg will deduct from the total amount.

Commodity/inventory should not be stored for a long period of time (more than 20 days after deposit and 10 days after sells), avoiding spillage, proper weighing during loading and unloading, regular calibration of weighing equipment.

Weekly base physical count, stack balance register check up and orienting employees for their knowledge gap and externalizing those intentionally malpractice bodies to accountability.

The firm also set penalties for late pick up and deposit more that fixed date

➤ **Expiration Period for Storage**

Exchange set and determine appropriate warehouse receipt expiration period of each type of commodity. Every depositor is expected to sell the commodity within (20 days) of specified period of time.

If the deposited commodity is not sold by the expiration date, the Warehouse Operator will impose an expiration penalty, of 3.5% per day calculated on the current tradable value of the commodity by the exchange.

➤ **Penalties for Late or No Pick-Up**

If the buyer does not take delivery within the delivery period (10 days) specified in the contract, the Central Depository will impose a late pick-up penalty of 1% of the transaction value per day. The late pick-up penalty will continue up to the termination of the expiration period for the warehouse receipt.

If the expiration period is reached and the deposited commodity has not been picked up, the Warehouse will re-grade the deposited commodity and continue to collect late pick up charges. The Buyer will only take receipt of the late pick-up after settling accumulated penalty charges through wire transfer to the Central Depository, according to its prescribed procedures.

**3.2.2.3. Controlling mechanisms for Qualitative and Quantitative losses**

Based on interview responses from Warehouse operation manager of ECX, Warehouse is free from any non-commodity material that can affect quality, careful inventory management by labeling stack, according to their grade, processing type, production year by using well ventilated Ware House to avoid moisture loss and by fumigation.

At the point of receiving, strict follow up about the standard of commodity moisture content to minimize weight loss by moisture.



Quantity loss is checked as per weekly and monthly inventory reconciliation.

Timely calibration of weight bridge and moisture tester machine is performed.

### **3.2.3. Extent to which ECX inventory management policy and procedures strong and convenient.**

#### **3.2.3.1. Does the firm have policy and procedure for inventory management?**

As we get from company's document, warehouse management is likely the most difficult and certainly the most risky of all ECX operations. In this regard the researchers gathered the following data relating to internal control over inventory.

According to ECX Warehouse Operation manual the company has policy for inventory management that is:-

Commodities in a warehouse will not be stored by identity of the depositor but only on the basis of identical grades and date of deposit.

The storage and issuance of the commodities is based on the first -in - first – out (FIFO) principle of stock rotation of inventory management practice based on the possibility nature of the commodity managed at the company & by taking serious follow up during unloading and loading. In addition to this there is a periodic count and check of inventory in the entire warehouse i.e. Lead inventory controller, this count is performed at the beginning of each week.

Every warehouse display in a conspicuous place and accessible to the public a copy of its most current rules and schedule of charges for the storage of commodities. Any bagged commodities stored in an orderly manner so as to permit easy access to all lots(2m between walls and 1m between stacks) and to facilitate inspection, sampling, counting, fumigation and identification of each stored commodity.

The physical inventory also conducted monthly by an employee not involved with handling of the commodity and not employed in the warehouse or under its supervisory. The physical inventory should be taken by stacks, by commodity and by warehouse and compared with the stack card and the book balance. Any differences should be investigated.

Physical counts are essential to be able to reconcile with inventory ledgers and stack cards, as the actual balance from physical counts is considered the Real Balance. The Stack Cards and the Physical Inventory Form provide good support documentation for information entered in

the warehouse inventory ledgers. A warehouse manager do not store above the standard capacity of the warehouse.

Maintaining an accurate record of goods received and goods Issuance.

Maintaining an accurate record of commodity stocks by keeping stack cards and warehouse ledgers or stock ledgers.

Information management on a regular basis, e.g. daily, weekly, monthly.

### Storage Specification

The amount of space necessary in a warehouse depends upon the total volume of commodity to be stored and on the number of different commodities grade. Each grade should be stacked separately. Separate stacks require more usable volume than one large stack.

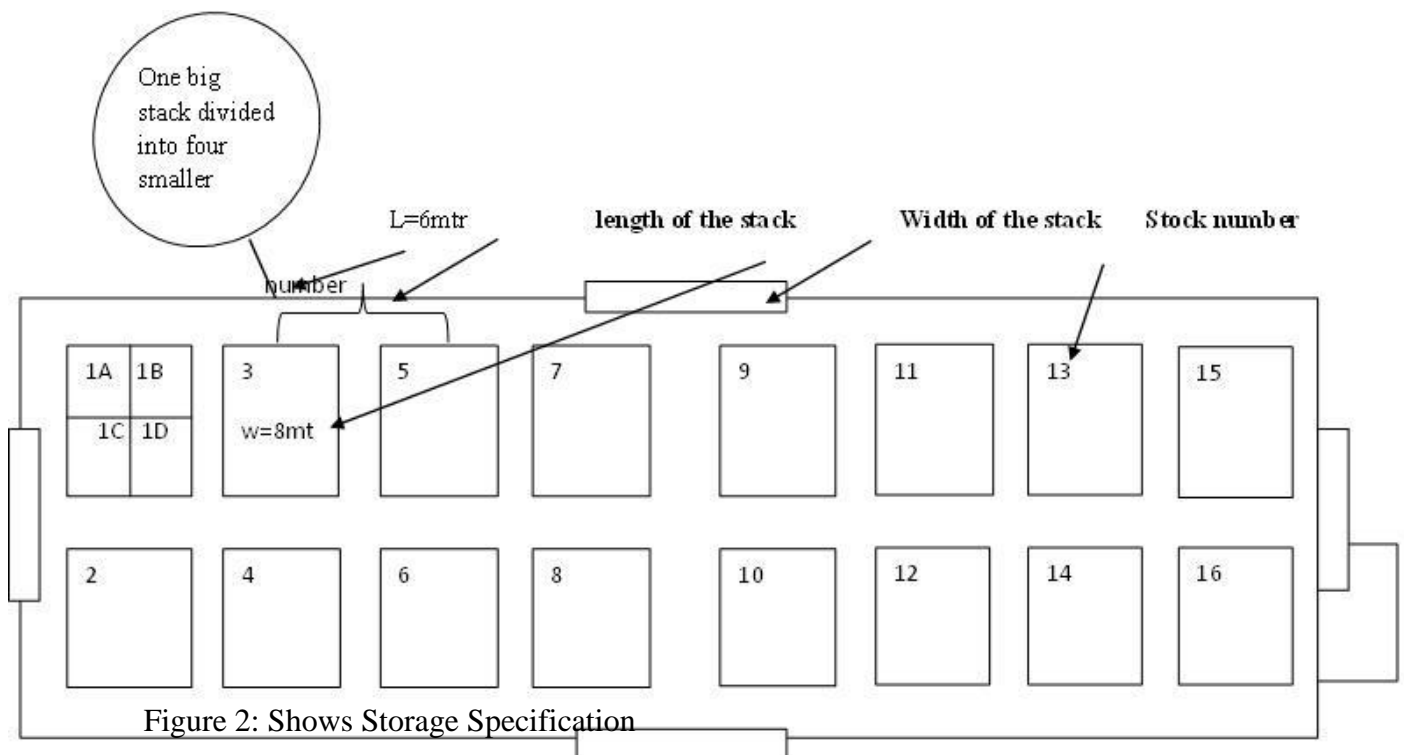


Figure 2: Shows Storage Specification

Source:- from companies procedure manual.

### 3.2.3.2. The firm manage inventory during deposit and delivery is :-

As lead inventory controller in the warehouse replied the firm manages its inventory during deposit by counting and weighing the incoming commodities, the overall loadings were weighed by using Weigh Bridge, and depositing different grades in different stack, recording daily deposit in stack card, master register card.

During delivery the Lead Inventory Controller calculate the actual weight of Pick Up Notice and load quantity.

### **3.2.4. Staff of inventory controller in the warehouse**

#### **3.2.4.1. The firm set job requirements related to inventory**

Interview response from warehouse operation manager of the ECX explained that Handling of commodities that may differ from usual inventory practice & should be assigned to qualified staff within a designated part of the warehouse department because of this the firm set job requirement for inventory related staff such as lead Inventory controller and Inventory controller a minimum of 5 years work experience and educational skill /First Degree/ to resume the position and operate as commodity inventory Manage and is responsible for receiving and issuing commodities from the particular warehouse under his/her custody.

Training should start when new comers join an organization regardless of their past experience. As each organization has its own unique internal environment, newcomers have to be formally oriented. Orientation programs shall, therefore, be arranged in such a way that all important issues are properly addressed with active participation and involvement of concerned bodies

- Responsible for the overall record and inventory management and any weight loss in the warehouse; management of receiving/issuing commodities and supervision of the daily activities of a particular warehouse under custody and supervision of Inventory Controllers and daily laborers;
- Ensure that all inventory transactions are properly recorded, accurately completed, updated & documented; submit the quantity loaded/unloaded using deposit ticket/loading ticket to the Warehouse Check there are no double submissions of Delivery Notice and validate that the Goods Receiving Note related to the Pick Up Notice.
- Display the highest ethical and professional behavior towards the customers/clients and perform other related tasks as assigned by the immediate supervisor.

#### **3.2.4.2. Related training to staff under inventory?**

Most of the respondents (Lead inventory controllers) replied that they have taken job training which is conducted on the job to develop the skills twice a year. The training given by the

ECX to its employees has positive impact on improving their job performance; the few respondents' feels that they do not see any significant positive change on their performance due to the training given for them is lack of sharing experience with international exchange company. Any ways, the majority of the respondents have positive attitude towards the training given by the ECX since it helps them to update either knowledge or skills that results in improvement of their job performance which is a clue for the ECX.

### **3.2.4.3. Number of staff members for the work load at each site**

Regarding the number of staff, the warehouse operation manager said that the firm does a standard manpower requirement for each warehouse so that it does sufficient no of staff for this work at all work site. Hawassa and Hummera have 4 and 8 warehouses each and for each warehouse there are 1 Lead inventory controller and 2 inventory controller including daily laborer.

## **3.2.5. Impact of the inventory management problem on the firm's financial performance**

### **3.2.5.1. Transaction Record**

According to the key informant interview with finance manager and secondary data analysis result, The particular aim of ECX is the market system, and it's operating in the middle part of regulating the way in which seller and buyer interact with each other with spot contract, sellers are usually the producers and dealers, where as the buyers are usually processors and exporters, futures trade, cannot be developed because ECX 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.

ECX does not have ownership right on the commodity but be assured of quantity, quality, delivery and payment by the Warehouse Receipt, which is backed by commodities held in ECX, operated warehouses. By law, ECX trading is based on the Electronic Warehouse Receipts for which ECX guarantees of the commodity.

The central depository possess a central automated registry of warehouse receipts of all depositors after delivery of GRN, Like a bank account balance, the Central Depository maintains a warehouse receipt balance similar to any asset-holding account, which can be

debited in decrements when sales are made on the ECX trading floor. This system avoids the risk of fraud or loss of paper receipts, provides flexibility in selling partial amounts of the deposited commodity, and increases the efficiency of physical delivery.

At sale, the ECX central depository debits the seller's account and automatically transfers title of the commodity to the buyer and issues a delivery notice, on the basis of which the commodity can be released to the buyer.

In order to eliminate risks of contract defaults, all payments have been cleared and settled in the market through ECX internal clearing house. This is to mean that it takes the role of receiving payments for all transactions from buyers and transferring these funds to all sellers of commodities after deduction of Exchange transaction fee, Handling and production certification fee and warehouse storage charge from both side, and receiving all Warehouse Receipts from all sellers of commodities and transferring them to all buyers.

The ECX Clearing House works closely with the central depository and with ECX approved settlement banks. ECX requires that all members maintain both a pay-in and a pay-out account in these banks where ECX also maintains a settlement account. At the end of every trading day, the ECX Clearing House calculates the net obligations of all its active members to determine whether funds need to be transferred from the members' pay-in account to the ECX settlement account or vice versa to the members' pay-out account. All pay-in transfers to ECX are made on the same day as the transaction and all pay out transfers are made on the following morning. Similarly, all transfers of warehouse receipt to the buyer are made by the central depository the following day after pay-in has been made to the seller.

### **3.2.5.2. Record and Report of commodity shortfall in the warehouse**

As indicated from its Name the Commodities that are traded through the exchange are Subject to Natural Moisture loss due to different reasons. In connection with this, based on the expertise moisture loss adjustment determination the exchange paid loss of shortfall on commodity based on historical cost.

The recording and reporting of delivery shortfall is shown as operational expenditure of the company under a category of "Delivery Shortfall". Since, the Exchange is an intermediary body for both sellers and buyers; it is part of the operational activity it has to be reflected at the income statement as an expenses.

### 3.2.5.3. Percentage range of the quantity received in usually in shortage or overage

**Table3. Commodity Deposited and Shortfall amount at Hummera and Hawassa sites.**

Site	Year	Deposited Kg	Delivered Kg	Shortfall Kg	%
Hummera /Sesame/	2000-1	80,456,845	80,365,986	90,859	0.11
Hummera /Sesame/	2002	91,401,492	91,286,492	115,000	0.13
Hummera /Sesame/	2003	92,348,890	92,132,966	215,924	0.23
Hummera /Sesame/	2004	102,096,714	101,916,167	180,547	0.18
<b>S/Total</b>		<b>366,303,941</b>	<b>365,701,611</b>	<b>602,330</b>	
Hawassa /coffee/	2000-1	44,376,536	44,309,971	66,565	0.15
Hawassa /coffee/	2003	54,615,398	54,522,552	92,846	0.17
Hawassa /coffee/	2004	58,451,879	58,375,892	75,987	0.13
Hawassa /coffee/	2005	66,348,898	66,229,470	119,428	0.18
<b>S/Total</b>		<b>223,792,711</b>	<b>223,437,885</b>	<b>354,826</b>	

Based on interview with managers and secondary data, the amount of received commodity is increasing from year to year and also the average shortfall amount also increased even if the company management system is good. This shows that the staff on inventory area should not only be knowledgeable but should also be committed on handling, and also some techniques for mitigating inventory loss are not efficient.

According to Finance manager response currently, the Exchange is trying to study the scientific reasons to reduce the amount of delivery shortfall with the possible manner by consulting with advanced commodity exchanges may have better expertise experience in the area.

### **3.2.5.4. Significance of financial loss due to inventory shortfall and related practice**

Moreover, interview responses from finance manager, ECX is the only market established to facilitate central trade market, the volume of transaction traded is increasing from time to time and its' related financial loss also increased. The financial impact of delivery shortfall is highly affected by different factors for different commodity type.

When we come to the financial impact of delivery shortfall from 2008 to 2013, the total amount of transactions reached over 1 Billion Birr for all commodities traded within the exchange. Thus, the amount of delivery shortfall is directly related to the volume of commodity traded under the floor of the exchange, it also amounted 35 Million birr within the last five years .And, since it is part of the operational cost for the exchange it also recorded and shown as one cost line item within the company financial statements (Books of Accounts).

And we are attached in the appendix for three years income statement of the company, even if we mentioned from 2008, the finance manager is unable to reach the rests data.

## **CHAPTER FOUR**

### **SUMMARY, CONCLUSION AND SUGGESTION**

#### **Summary**

This chapter presents the finding that the researchers filtered out in an attempt of answering the basic research objective aimed to assess the practice of inventory management under Ethiopia Commodity Exchange.

In such endeavor the researcher gathered primary and secondary data and analyzed using descriptive and explanatory method. Based on this the researcher conclusion and recommendation are presented here under.

The researchers assess all the research question that raised in chapter one, the method applied for the research was qualitative with interview, observation and company document.

#### **From the respondent's answer & data analysis the major findings are:**

- ECX has documented policy and procedure for inventory handling system.
- Based on our data collection, we understand that the Exchange is facing commodity shortfall problem due to natural and human error.
- From companies data we realized that, the way of mitigating inventory loss seems good but it is not effective.
- Even though Spot market is applied, the physical delivery takes more than transaction date.
- Even though shortfall of commodity occurs every year, the company is going to expand new branch in the regional country.
- Shortfall is occurring every year but the management or regulatory body (Authority) didn't take any extra adjustment on the past five year.
- In the inventory receiving and issuing process, the company use online internet system and when the net work is going down there is a long queues of truck in the warehouse.



- From physical observation the warehouse structure is not appropriate for commodity storage.
- Since Commodity Exchange is new for Ethiopian trend, the warehouse personnels are lacking on sharing experience with advanced commodity exchange.

## **Conclusion**

To conclude this paper, the data which are collected, have been analyzed and interpreted with in the boundary of constraints, so the issued and addressed in this study are shortly concluded in the following presentation:-

- The main objective of this study is to find out the major causes of inventory loss is moisture loss and human error with intention and unintentional.
- The company does not effective on the mitigation system on inventory loss.
- The companies use the equivalent moisture loss adjustment rate for with out considering the weather condition.
- There is a time gap between the transaction date and physical delivery date.
- The company is expanding new sites with out amendment of policies.
- Warehouse structure is lacking of ventilation system.
- The warehouse personnel are lacking on sharing experience with advanced commodity exchange.

## **Recommendations**

Based on the finding of the paper we would like to put forward the following recommendation to the company managers and regulatory bodies.

- The company should re-consider and set the moisture and related inventory losses standards based on research for each type of commodity and weather conditions of each area where warehouses are available.
- Periodical calibration of measuring equipment including weighbridge and moisture tester should be strictly followed in order to minimize weight loss.
- The exchange should construct its warehouse which can fulfill the required facility standards in order to prevent from poor inventory management.
- There should be strong coordination and integration among the departments under ECX which have direct or indirect influence on inventory management.

- There should be a strict follow-up and warehouse management with clients (suppliers and Exporters) to sell as per the contract deposit standard and pickup period.
- The exchange should have trained man powers warehouse operators, and it should give training to the operators and participants in handling commodities and capacity building in order to keep storage losses at minimum.
- And finally supporting further research into the role and the benefits of commodity exchanges.

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**DECLARATION**  
**ADVISEES DECLARATION**

We, the undersigned, declare that this senior essay is our original work, prepared under the guidance of W/ro Yeserash Alemu. All sources of materials used to the manuscript have been dully acknowledged.

Name: .....

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Place of submission: St. Mary's University

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**ADVISOR'S DECLARATION**

This senior essay has been submitted for examination with my approval as an advisor.

Name: \_\_\_\_\_

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