The Role of Logistic in Agribusiness Firm in Ethiopia

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Abstract
Agribusiness logistics is defined as the process of planning, implementing and controlling the efficient, effective flow and storage of agricultural products, services and related information from point of origin to point of consumption for the purpose of conforming to customer requirements. The ability to transport goods quickly, safely, economically and reliably (logistics) is seen as vital to success of Agri-businesses, and to a nation’s prosperity and capacity to compete in globalized economy. The objective of the paper is to review the role of logistic in agribusiness and its challenge in Ethiopia for the reference of further improvement by using secondary data and observation. Logistics plays a key role in the economy, and the market volume of logistics has already reached a substantial level in many economies as a result. Companies that are successful worldwide have long recognized the critical role logistics plays in creating added value. In addition, a close focus on the customer is a critical factor for companies working together in a supply chain. The scope of logistics practices has been extended beyond its traditional coverage of transportation and warehousing to include packaging, labeling, assembly, purchasing, distribution, manufacturing, finance, customs clearance, and other forms of customer service. The logistic challenge in manufacturing firm in Ethiopia categorized in to five areas in their logistic operation: Geographical, Demographic, environmental, Legislative, and Technological challenges. Effective and efficient agribusiness logistics management is a key to the success of business firms. Otherwise, poor logistics management can result in higher logistics costs in agribusiness firms.

Keywords: Agribusiness, Logistics, firms

1. INTRODUCTION
In today’s fast paced economic climate, many firms increasingly realize that globalization has made the world smaller and more competitive. A change in one place impacts another quickly. Also, customers seek products that can respond well to their specific needs. As such, firms are now looking at securing cost, quality, technological and other competitive advantages as a strategy to pursue in a globally competitive environment.

One currently popular competitive advantage for firms is to promote and provide value to its customers by practicing logistics more efficiently than competitors. Presently the competitive global market place has high pressure on business activities whether they are local or international. Logistics as the key part of global business shall be considered in particular due to the fact that it links suppliers with customers and it integrates functional entities across a company.

Ethiopia benefits from exceptional climatic conditions that make the production of a wide variety of agricultural products possible. Ethiopia also has a large addressable market for agricultural products. The domestic market alone constitutes 90 million people and the nearby Middle Eastern market represents more than 380 million potential customers. However, many finished food products are imported and opportunities abound for import substitution, with products created by new and growing domestic processing companies. Today, agriculture accounts for more than 50 percent of Ethiopia’s gross domestic product (GDP), more than 80 percent of its export revenue and 85 percent of its jobs. Furthermore, an estimated 65 percent of employed women work in the agricultural sector. The agribusiness sector, thus, represents a tremendous opportunity both from an economic growth and social development perspective.

Given the potential of agriculture and its importance to people’s livelihoods, the government of Ethiopia (GoE) has made agriculture a key priority in the country’s Growth and Transformation Plan (GTP). As part of executing this plan, the government has increased its investments in agriculture by expanding extension systems and large-scale infrastructure. Various literatures in the areas of agricultural business indicate that the notion of Agribusiness first emerged in 1950s across the globe. The term “agribusiness” usually refers to the business of farming; although, it is not often used in correlation with actual farms as it is an agriculturally related business like the supply of farm inputs.

The Business Dictionary defines agribusiness as business that earns most or all of its revenues from agriculture. An agribusiness tends to be a large scale business operation and may dabble in farming, processing and manufacturing and the packaging and distribution of products. Agribusiness is a broad concept that covers input suppliers, agro-processors, traders, exporters and retailers. Agribusiness is also related with the provision of inputs to farmers and the linkage between farmers and consumers through financing, handling, processing, storage, transportation, marketing and distribution of agro-industry products.

Agribusiness in Ethiopia can be seen in four major component levels. The first is agricultural input industry which is related to inputs vital to enhance agricultural productivity. These include agricultural machinery,
equipment and tools; fertilizers, pesticides, insecticides; irrigation systems and related equipment.

The second is agro-industry that is the manufacturing of food and beverages; tobacco products, leather and leather products; textile, footwear and garment; wood and wood products; rubber products; as well as construction industry products based on agricultural materials.

The third is agricultural equipment that play a vital role in agribusiness in the processing of agricultural raw materials. The equipment can include including machinery, tools, storage facilities, cooling technology and spare parts. The fourth are various services related to finance, marketing and distribution firms, including storage, transport, ICT, packaging materials and design for better marketing and distribution are integral part of Agribusiness.

The ability to transport goods quickly, safely, economically and reliably (logistics) is seen as vital to success of Agri-businesses, and to a nation’s prosperity and capacity to compete in globalized economy. Logistics is defined by council of logistics management as the process of planning, implementing and controlling the efficient, effective flow and storage of goods, services and related information from point of origin to point of consumption for the purpose of conforming to customer requirements. The integration of two or more logistics with in a network to create value, enhance efficiency and satisfy customers is called supply chain management.

Agri-food chains and networks play an important role in providing access to markets for producers from developing countries, as well as for local, regional and export markets. Changes in agrifood systems impact the ability of agro-industrial enterprises to compete; small and large alike will have to innovate and reduce costs, while being more responsive to consumer needs. Analyzing and assessing logistics and supply chain practices will help discern important issues such as emerging trends and areas of concern (Srivastava, 2006), which will help in taking remedial measures.

Important barriers to growth of agribusiness enterprises that will not be met by the AII include the development of primary agriculture, a system of cold chain facilities, storage of raw materials, processed products, and transport logistics, as well as investments in reliable energy supply. The AII will also not be involved in developing or amending regulations or policies that may affect the prospects of agribusiness entrepreneurs in Ethiopia (Infodev, 2012).

Logistics practices of Ethiopia was mainly focused on the transportation and customer service practices using general attributes of infrastructure, performance, information system, human resources, business and political environments. Ethiopian logistics system is characterized by poor logistics practices and lack of coordination of goods transport, low level of development of logistics infrastructure and inadequate fleets of freight vehicles in number and age, damage and quality deterioration of goods while handling, transporting and storage (Fekadu, 2013).

Therefore, reviewing the role of logistics and its challenge in Agribusiness firms in Ethiopia is very essential to make improvements on the poor logistics practices and to add information for further research.

2. METHODOLOGY

Review of the role of logistics and its challenge in Agribusiness firm the case of Ethiopia will be made in this review paper from observation and secondary sources.

3. RESULT AND DISCUSSION

3.1. The Role of Logistics in Agribusiness Firm

3.1.1. What is Logistics: Logistics can be defined as the flow of materials, information, and money between consumers and suppliers (Frazelle, 2002). Similarly, Waters (2003, 5) describes logistics as ‘the function responsible for the flow of materials from suppliers into an organization, through operations within an organization, and then out to customers logistics is the planning, implementing and controlling the efficient and effective flow and storage of raw materials, in process goods, final goods and related information from point of origin to point of consumption for the purpose of meeting customer requirements’. Because logistics deals with the flow and storage, one’s attention may be drawn immediately to transportation and warehousing. However, transportation and warehousing is just a portion of business logistics, recall that the definition includes planning, implementing and controlling. Other concerns addressed within a business logistics perspective include (1) design and organization of value chains and supply chains that produce buyer value for the customer and strategic value for the firm(s), (2) coordination between value adding activities, (3) the flow of information needed to coordinate effectively and most efficiently, (4) network modeling to address spatial and temporal demands, and (5) global logistics.

Until more recently, the spot and futures markets were the dominant coordinating mechanisms in food and agriculture, especially for agricultural commodities. Now, the industrialization of agriculture and the information revolution are changing how those supply chains are coordinated.

Logistics is integral to the whole area of supply chain management. Key to supply chain management is the
physical and informational flows to meet consumer requirements and to provide value to the firms involved. Supply chain coordination can be obtained through means other than the spot markets or vertical ownership, such as through long- or short-term contracts. If contracts are used there are issues of monitoring those contracts to safeguard the interests of the principal relative to the performance of the contracted agent. At the same time, the loss of open markets means the loss of valuable management information that must be acquired in another fashion, such as through benchmarking or estimating competitor’s costs.

Information technology, by offering cheaper and more powerful communications and data collection and processing, is rapidly changing the way business is done up and down the supply chain, and it offers new tools to address opportunities once considered infeasible. A simple example is the electronic ear tags for cattle. The ear tag makes it possible to track the husbandry and performance of an animal all the way from birth to slaughter and to share that information back to those who participated in the production of that animal. That makes it possible to reward participants for the value they created. E-commerce for marketing grains and feed ingredients, a separate company to provide online business-to-business marketplace and information for all agricultural commodity traders, regardless of size (Feedstuffs, 2000).

3.1.2. Logistics in Food and Agriculture
Changes affecting the flow and storage of goods and services in food and agribusiness have been in motion for a long time, but the cumulative effects have become most visible, lately. Consider separation and realignment of activities associated with the industrialization of agriculture [Boehlje, 1996].

Highly specialized production units, such as the commercial beef feedlot, the hog integrator or the grain farm, have replaced the traditional general farm that fed homegrown crops to livestock. While separation and realignment has increased the need for transportation services, the cost reductions in transportation and communication have made those realignments more feasible, especially when combined with the economies realized with large scale specialized production.

Accompanying that industrialization has been a systems approach to management, first within the firm, but then to the whole supply chain. Integrators in poultry and pork production realized a total systems management approach by vertically owning virtually all the steps in the supply chain and by exercising control through producer contracts over that which they do not own. By controlling the total supply chain, they are better able to meet consumer specifications of quality, especially product consistency. Elsewhere supply chain management is even when financial vertical ownership is infeasible.

The beef industry in developed country, realizes in that to increase demand it must assure the consumer of a more lean, tasty, consistent product, and that requires coordination from conception to the retail shelf even though it’s infant in our country, Ethiopia. Various groups and firms in the industry are using alliances, contracts, advanced information technology and other supply chain management tool in an effort to provide the product consumers prefer. Because the supply chain for beef is longer than that for chicken or pork, those coordination arrangements are necessarily more complex and difficult to manage and can be expected to continue to evolve significantly in the coming years.

Products of biotechnology are replacing commodities, and as such, must be segregated from the commodity it replaces in order to provide added value to the consumer and to reward the supplier. High oil corn, for example, is better suited for certain applications and in certain markets where animal fats are less available and more expensive. In order to capture that value, the grain must be segregated from other corn—it’s identity must be preserved. This leads to new problems of materials handling, transport and exchange, which raises questions of the value of those new grains. While multinational grain companies, now, are handling identity preserved grains, the problems of efficiently handling such grains are far from being resolved. Furthermore, feed and biotechnology companies continue to explore supply chain arrangements that will allow them to capture more of the value created by their biotechnology.

3.1.3. Agribusiness Logistics
Why agribusiness logistics is just not part of marketing? Supply chain and business logistics issues as sufficiently important and complex to benefit from being considered separate from marketing. Yes, business logistics interfaces with marketing, most especially at the last of the four P of marketing-place or customer service, but marketing is most effective when it focuses on product, price and promotion. While marketing will address place in terms of distribution to the customer, the issues of the efficient, effective flow and storage of physical inputs and products as well as related information along the supply chain benefits from a perspective that differs from that of marketing. That is a perspective that addresses the needed infrastructure, the efficient coordination, the assurance of quality and the assessment of competitive advantage. That can be either at the industry level or at firm the firm level. Agricultural economists regularly study industry level issues such as these, but many such decisions are at the firm level, too. Increasingly, large firms have added a logistics department to address the concerns of coordinating along the supply chain and that department or office’s responsibility is to interfaces with all the other departments in the firm. Because of that, business logistics must provide a systems approach or focus to address those needs.
Transportation and materials management, being major dimensions of logistics, are covered next. Transportation discussion would cover the modes of transportation, government regulation of transportation and its impact on shippers, and contracting arrangements between shippers and carriers including long running concerns of shippers, such as the concerns of grain and feed dealers concerning railroad rules and behavior.

Additionally, the opportunities that have come with transformation of the transportation industry can provide understanding of managing transportation in a changing environment. Materials management, today, is based on the premise of supplying mostly from production not stock. Seasonal production common with agriculture puts limits on that and raises issues of how and where agricultural product could be stored most economically, near production or near use.

Traditionally, coordination has been heavily through the spot market and agricultural producers relished the independence associated with the using the spot market. But the signals from the spot market may fail to coordinate fully. New Agribusiness models to coordinate have come about with new hardware and software to be effective and efficient.

3.1.4. The responsibility of Logistics in Agribusiness firm

Effective and efficient logistics management is a key to the success of Agribusiness firms. Otherwise, poor logistics management can result in higher logistics costs. Logistics plays a key role in the economy, and the market volume of logistics has already reached a substantial level in many economies as a result. Companies that are successful worldwide have long recognized the critical role logistics plays in creating added value. In addition, a close focus on the customer is a critical factor for companies working together in a supply chain.

The significance of logistics, in a global comparison, depends largely on the overall economic power of a country. For instance, logistics has been far advanced in the United States, Japan and Europe for a long time. In other words, logistics significance and capabilities depend largely on the economic power and developmental stage of a country. One critical factor, for instance, is the availability of an intact infrastructure. The range of logistics service providers extends from pure transport functions to modern, complex logistics systems, depending on the conditions of a particular country. Logistics' role is to provide time and place utilities. Time and place Utilities facilitate the creation of global scale and scope economies while enhancing a firm's ability to provide high levels of seamless customer satisfaction (McGrath and Hoole, 1992).

Similarly, Ronald (1997) argues that for many firms throughout the world, logistics become an increasingly important value-adding process for a number of reasons. Concerning logistics practices Lambert & Stock (2001) argues that good logistics practices can create a competitive advantage. More specifically they claim that best logistics practice plays an important role in three critical elements of the marketing concept. These elements are customer satisfaction; integrated effort and company profit (Lambert & Stock, 2001 as cited in Anna and Konrad, 2008).

Generally, the above arguments indicated that good logistics practice is increasingly recognized as the key enabler, which allows Agribusiness Company to gain and maintain its competitive advantage and ensure maximum customer satisfaction.

Cilliers and Nagel (1994) made assessment of status of logistics in South Africa using individual company’s logistics excellence and how companies integrate into and the excellence of a supply chain they are part of. They used data gathered by questionnaire survey from key people in logistics industry. The elements of business logistics are treated well but many important factors such as infrastructure, availability of human resource in the market, customs, etc are not taken in the assessment. Diaz and Perez (2002) carried out empirical and statistical analysis on data obtained by questionnaire survey to identify the key characteristics that resulted in operational, market and state inefficiencies that constrained logistics development in Venezuela. They also basically dealt with business logistics and integration into a supply chain. They considered external factors such as the effects of infrastructure, macroeconomic uncertainty (due to short-term economic policies), human resource scarcity, inefficient customs, presence of foreign competitors and unidentifying foreign markets as threats to logistics development but the variance was low and they concluded that factor analysis has limitations in the explanatory power. Srivastava (2006) carried out study on state of logistics and supply chain practices in India by direct observation, informal discussions and interviews with middle and top managers of companies and information gathered from secondary sources. He also dealt basically with business logistics and supply chain integration. His focus was on a) supply chain collaboration and partnership b) supply chain structure including facilities network design for transport and logistics c)forecasting and demand management to cope with supply chain complexity in a cost-effective and delivery-efficient way and d) use of ICT to facilitate supply chain integration and performance.

Ministry of Industry (2010), as cited by Melkamu (2016) shows that even though the footwear industries(one Agribusiness firm) benefit from duty- free privileges for the importation of machinery and spare parts, it has limited value since the manufacturers are not productive enough. This shows that the footwear manufacturing firms are facing problems beyond finance shortage and lower productivity. Among the major problems contributing for the poor performance of this industry, lack of adequate knowledge and skills in
managing logistics practices is the critical one (LIDI Annual report, 2013).

Most of Ethiopian footwear industries are not able to be competitive in the international market like China, India and Italy shoe markets since there is low quality footwear production due to lack of adequate skill and knowledge, power and financial problems and high logistics related problems (LIDI Annual report, 2014). The report also indicated that a great amount of export orders that are given to different footwear manufacturing firms are not completed on the promised date, and this was mainly due to delays of imported raw materials and transportation problems. LIDI assessment report (2015) mentioned that still the problem is not alleviated and the logistics issue has not got the required concern.

Effective logistics operations can lead to more efficient operations that increase the firm competitiveness and increase customer loyalty where distances are frequently greater and many environmental barriers increase the complexity and uncertainty of worldwide operations (Cilliers and Nagel, 1994 as cited in Mark Goh, 1998).

The study by Fekadu (2013) on logistics practices of Ethiopia was mainly focused on the transportation and customer service practices using general attributes of infrastructure, performance, information system, human resources, business and political environments. The finding indicate that Ethiopian logistics system is characterized by poor logistics practices and lack of coordination of goods transport, low level of development of logistics infrastructure and inadequate fleets of freight vehicles in number and age, damage and quality deterioration of goods while handling, transporting and storage.

The scope of logistics practices has been extended beyond its traditional coverage of transportation and warehousing to include packaging, labeling, assembly, purchasing, distribution, manufacturing, finance, customs clearance, and other forms of customer service (Luchen, Theo noteboom, 2011).

A common way to structure a company, from a logistics perspective, is in three main activities: procurement, operations and distribution (Aronsson, 2004; Christopher, 2005). However, the typical elements of logistic activities, such as customer services, sales forecasting, distribution communications, stock control, materials handling and ordering, amongst others, may give companies competitive advantages, especially when based on the exchange of reliable information between the links in the chain (Bowesox, Closs and Drayer, 2005, as cited in Wescley and Ricardo, 2011).

Similarly, there are thirteen key logistics activities that are involved in the flow of products, from point of origin to point of consumption: these are customer service, demand forecasting, inventory management, logistics communications, material handling, order processing, packaging, parts and service support, plant and warehouse site selection, procurement, reverse logistics, traffic and transportation, warehousing and storage (Lambert & Stock, 2001 as cited in Anna and Konrad, 2008).

A narrow and more traditional view of manufacturing logistics includes the planning, scheduling and control of all activities resulting in the acquisition, processing, movement and storage of inventory (David, Robin, Robert and Louis, 2007). On the other hand, Frazelle (2002) and Kent (2001) states that logistics is comprised of five interdependent activities: these are customer response, inventory planning and management, supply, transportation, and warehousing.

![Interdependent Logistics Activities](source:Frazelle (2002) and Kent (2001))

3.2. Agribusiness Logistics Challenges in Ethiopia

Study by Melkamu(2016) categorized the logistic challenge in manufacturing firm in Ethiopia into five area in their logistic operation:Geographical, Demographic, environmental, Legislative, and Technological challenges. The finding shows that from the geographical challenges of logistics traffic congestion, resistance to change from demographical challenges, climate changes from environmental challenges, foreign currency shortage from
legislative challenges, lack of integrated system from technological challenges, and short product life cycle from other logistics challenges are the most critical challenges of logistics in their category. In addition to the listed logistics challenges complicated LC opening procedures, low cargo service efficiency, supplier loyalty, increasing logistics cost and multimodal system inefficiency are also quoted by respondents as challenges of logistic

According to Tilahun (2014), in Ethiopia, problems in the maritime transport sector have become one of bottlenecks to international trade. Similarly, Fasika, Klaus and Marcus (2014) in their research on the 12 types of problems for achieving competitiveness of shoe firms in Ethiopia. Similarly, Poor trade logistics impose additional costs on the competitiveness of the leather industry in Ethiopia (Dinh, Hinh, 2014). In this regard, the biggest challenge is the long lead time in imports since timely imports of chemicals and other inputs are vital to the smooth running of the production process. In their study a key respondent in the tannery sector stated that imports coming from Italy to Ethiopia, for example, can take one to two months. In order to overcome these types of problems, the recent export promotion regulation has allowed foreign-based chemical and other input producers to utilize the Bonded Supply Warehouse Scheme.

Girum and Florian (2013) in their study indicated that the recently introduced ‘Export Trade Duty Incentive Schemes Proclamation No 768/2012’ has several instruments to minimize the problems of inventory stocking and lead time for establishments that import inputs, such as chemicals, for the production of commodities for the export market. They found that bonded input supplies warehouse scheme is one of such instruments whereby exporters are allowed to store inputs without duty payments under the supervision of the customs authority. It is also indicated that this scheme reduces customs clearing time, overstocking of raw material inventory and lead time.

4. SUMMARY AND CONCLUSIONS

Agribusiness logistics is the key part of national business shall be considered in particular due to the fact that it links suppliers with customers and it integrates functional entities across a company. Effective and efficient agribusiness logistics management is a key to the success of business firms. Otherwise, poor logistics management can result in higher logistics costs. Logistics plays a key role in the economy, and the market volume of logistics has already reached a substantial level in many economies as a result. Companies that are successful worldwide have long recognized the critical role logistics plays in creating added value. In addition, a close focus on the customer is a critical factor for companies working together in a supply chain.

Nevertheless, before producers examine value-added processing and marketing, cost minimization in production must be achieved. Only low cost and efficient producers will be able to survive and compete in production of agriculture by using effective and efficient logistic system. Adding value cannot take the place of reaching the efficiencies of production attainable through technology and economies of scale.

Generally from the review challenge related to logistic were Geographical, Demographic, environmental, Legislative, and Technological challenges identified. The management and policy makers should understand and emphasis the need to overcome logistics challenges for the success of the Agribusiness firm. eventhough there are some study deals with logistic ,there is no Contemporary studies and research points to the logistic in manufacring firm as it is perceived that firm could maximize on their produce and also potentially increase their revenue in the process. Indeed, there is no research carried out in related Agribusiness logistic in Ethiopia .

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### 6. Suggestion for Further Studies

For future research studying the logistics practices and challenges by studying specifically i.e. by studying Agribusiness Logistic along the value chain is recommended. Other logistics category like inbound, outbound activities and shall also be studied in detail.