



## Review Article

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## Review on live animal and meat export marketing system in Ethiopia: challenges and opportunities

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### Abstract

Livestock production systems in Ethiopia are generally subsistence oriented and productivity is very low. Hence this paper is aimed to assemble the subsisting information on live animal and meat market source and structure, to compile existing information on the opportunities and challenges of live animal and meat marketing, and to provide a highlight on the livestock production system of Ethiopia. Accordingly, low productivity of the animals and the absence of market-oriented production systems are described as the main constraints of livestock production in the country. In Ethiopian, for the demand of live animal and meat, there are different opportunities like domestic consumption, official exports and high demand of animals by the export abattoirs. However, various internal and external factors are described under the challenges of live animal and meat marketing system in Ethiopia and it includes: absence of effective grading system, absence of market information system, absence of promotional activities, supply problems, prevalence of diseases, traditional production system, and illegal export trade, inadequacy of infrastructure, competition, repeated bans and inadequate port facilities. From this review it has been recommended that major disease should be controlled, legal channels, market infrastructure and service facilities along borders and implementation of strategies with neighboring countries for legalizing trade should be developed. Livestock transportation facilities, improved slaughter house, livestock resting sites, and storage and quarantine facilities at required sites should be present. In addition, the government should be actively involved for the control of illegal trade of live animals across the borders.

**Keywords:** Challenges, Livestock marketing, Meat marketing, Opportunities.

### INTRODUCTION

Livestock production systems in Ethiopia are generally subsistence oriented and productivity is very low<sup>[1]</sup>. The supply originates in small numbers from highly dispersed small producers that supply non-homogenous products to local markets. Due to the low productivity of the animals and the absence of market-oriented production systems, the volume of marketed surplus is very low. In addition, the different live animals supplied to the market by pastoralist and farmers do not meet the quality attributes required by diverse markets. This is because of poor link of producers and other actors in the chain to the critical support services. Some of the problems related to the support services include; absence of commercial animal health services, non-existence of appropriate trucking equipment, lack of sufficient air-cargo capacity, underdeveloped feed industry, and lack of commercial fattening and holding facilities<sup>[2]</sup>.

However, various alternative options are initiated by different actors (private sector, governments and international organization). These initiatives are often regional encompassing more than one country in east Africa and attempt to find sound solutions to overcome barriers to trade so that Ethiopia and other countries could effectively use their rich livestock resources for the improvement of the live hood of their populations<sup>[3]</sup>. Ethiopia is exporting livestock to Middle East countries mainly Yemen, Egypt and Jordan. Even though the complete data are found the Adama-Modjo quarantine stations, there is no well documented on the prevalence of the diseases at country level especially in academic area. The prevalence of the major infectious animal diseases hinders the Livestock Export Enterprises and estimates the financial losses at Adama-Modjo Quarantine Stations<sup>[4]</sup>.

Formal live animal exports are predominantly cattle (70%). Meat exports are almost entirely from sheep and goats, and hides and skins are primarily from cattle. Trends over the last 10-20 years show meat and live animals becoming increasingly important to livestock exports relative to hides and skins <sup>[5]</sup>.

The country lacked a strong regulatory body to serve as the Competent Authority for SPS-related issues. Efforts to improve Ethiopia's SPS image through the development of disease-free zones requiring ring vaccination were being considered, but high costs and difficulty of implementation made such initiatives appear unrealistic. Animal health laws, regulations and certification capabilities did not meet requirements for international trade. The federal veterinary laboratory was focused on research rather than service provision for the livestock sector. Together, these constraints impeded Ethiopia's efforts to meet international SPS requirements <sup>[6]</sup>.

The USAID-funded Ethiopia Sanitary and Phytosanitary Standards and Livestock and Meat Marketing (SPS-LMM) program worked in close collaboration with public institutions and private operators to dramatically increase meat and live animal exports from Ethiopia between 2005 and 2011. From a base of \$27 million in formal live animal exports and \$18.5 million in meat exports in 2005/06, the program helped the country reach \$148 million in live animal exports and \$63 million in meat exports in 2010/11. These increases—241% in the value of meat exports and 442% in the value of live animal exports—reflect an increase in volumes exported (a doubling of meat exports and near-tripling of live animal exports), an increase in the value per MT of meat and head of livestock, and, in the case of live animals, an increased formalization of the livestock trade. Meat exports more than doubled (from 7,917 MT to 16,877 MT), while official live animal exports nearly tripled (from 163,375 head to 472,045 head) between 2005/06 and 2010/11<sup>[7]</sup>. The objectives of this review paper are to assemble the subsisting information on live animal and meat market source and structure, on the opportunities and challenges of live animal and meat marketing in Ethiopia and to provide a highlight on the livestock production system of Ethiopia.

## LIVESTOCK PRODUCTION AND MARKETING SYSTEM

### Livestock Production System and Marketing Sources

Based on integration of livestock with crop production, level of input and intensity of production, agro-ecology and market orientation, livestock production system in Ethiopia is categorized as pastoral, agro-pastoral, mixed crop-livestock farming, urban and peri-urban farming and specialized intensive farming systems <sup>[8]</sup>. However, the livestock production systems are predominately categorized as agro-pastoral system in the lowland and the mixed crop-livestock system in the highlands. Traditionally, fattening of animal in both systems concentrates on male animal and female which are either infertile or have finished their reproductive cycle. In the lowland agro-pastoral system, grazing is the most common source of feed, with limited use of crop residue, whereas in the highland system, crop residues are the most important source of animal feed. During the wet season, when crop residues are scarce in the highlands, male animals are taken to the lowland areas for grazing <sup>[9]</sup>.

Livestock system represents a potential pathway out of poverty for many smallholders in the developing world. The majority the world's rural poor, and a significant proportion of the urban poor, keep livestock and use them in a variety of ways that extend beyond income generation. In many cases, livestock are central component of smallholder risk management strategies <sup>[10]</sup>. The economic contribution

of the livestock sub-sector in Ethiopia is also about 12% of the total and 33% of agriculture Gross Domestic Product (GDP) and provides livelihood for 65% of the population <sup>[11]</sup>.

### Livestock Market Structure

Field studies in different parts of the highland of Ethiopia show that livestock account for 37–87% of total farm cash income of farmers, indicating the importance of livestock in rural livelihood. Despite the contribution of livestock to the economy and to smallholders' livelihood, the production system is not adequately market-oriented. There is little evidence of strategic production of livestock for marketing except some sales targeted to traditional Ethiopian festivals. The primary reason for selling livestock is to generate income to meet unforeseen expenses. Sales of live animals are taken as a last resort and large ruminants are generally sold when they are old, culled, or barren. In the highlands, large numbers of cattle are kept to supply draft power for crop production whereas prestige and social security are the predominant factors in the lowland pastoral <sup>[12, 13]</sup>.

The export market is relatively old but highly variable depending on production condition of the country, change in consumer preferences and greater demand for high quality products with adequate guarantees of food safety. The livestock market is structured so that the marketable livestock from the major producing areas reaches to the final consumer or end user passing through complex channels along the supply chains involving various actors' including producers, traders, live animal and meat exporters <sup>[11]</sup>.

### Live Animal and Meat Marketing System and the main Actors

Livestock marketing operations are generally small-scale family businesses. The livestock producers supply to the market is not based on market demand, rather buyers must choose from whatever is available in the market. The live animals are either transported in trucks or herded over long distances to feedlot operators, export abattoirs, or major markets. These final market destinations are far away from supply sources, and the transportation costs associated with getting live animals to markets can result in significant weight loss and even death; stock routes are characterized by lack of adequate feed, water, and resting places. It can be argued that the long supply channels lead to high costs and reduce the competitiveness of live animal or meat exports. The spot market transaction dominates livestock marketing activities. In some cases repeat transactions are possible. However, there are no binding contractual arrangements among different market actors. Price is determined through bargaining at the market; livestock producers are usually less informed about price, supply, and demand situations. Suppliers (producers) are highly fragmented, while there is a concentration of major livestock buyers, a situation which might lead to noncompetitive pricing and marketing behavior <sup>[14]</sup>.

Formerly, Ethiopia exports approximately 200,000 livestock annually <sup>[15]</sup>. This is significantly higher than the annual official exports of cattle (12,934 head), sheep (13,554 head) and goats (1,247 head) between 1998 and 2007 <sup>[16]</sup>.

There are several marketing channels through which cattle, sheep, and goats flow to final consumers in both the domestic and export markets. In general, the cattle, sheep, and goat marketing channels are lengthy, without significant value-added activities. The livestock marketing channels, which start with the smallholder livestock producers from the mixed crop-livestock farming system, mainly cater to the domestic market. The marketing channel starting with the pastoralists is for both domestic and export markets. The market actors may be involved in

cattle only, sheep and goats only, or cattle, sheep, and goat transactions [17].

In Ethiopia, both legal and illegal marketing systems are operating at different magnitudes. Small farmer exporters and traders are the major actors in the illegal livestock marketing system while medium- to larger scales licensed exporters are dominantly operating in the system. Most livestock sales are related to farm households, cash needs and commercial orientation. However, cattle sales are also induced by fear of theft and insecurity.

The rapid growth in demand for meat products in the world represents a great opportunity for livestock resource-rich countries. For Ethiopia, opportunities to export meat to Middle Eastern countries and other African countries have been growing. Clearly, Ethiopia has comparative advantage in terms of geographic proximity to the Middle Eastern markets, with the potential for the quickest delivery time of fresh meat or meat products. Ethiopia's lowland cattle, sheep, goat, and camel breeds are also highly demanded in the Middle East due to their better taste and the organic nature of their production. In addition to the growing opportunity to export live animals and meat, there will also be an increase in domestic demand due to urbanization and economic growth. Therefore, in order to exploit emerging market opportunity there is a need to improve both the quality and quantity of livestock and livestock product under the different production systems [18].

In general, many actors are involved in livestock product marketing, broadly classified as: livestock producers, traders, processors, retailers, food service providers, and consumers. Private and public livestock inputs and service providers are other important market actors [19].

## **CHALLENGES AND OPPORTUNITIES OF MARKETING SYSTEM AND LIVESTOCK PRODUCTION**

### **Challenges and Opportunities of Livestock Production**

Climate change was affecting and challenging the life of farmers. The pasture production potential was declining because of climate change. Livestock's were largely reared in extensive system and fully dependent on rain-fed pasture and this is in agreement with [20].

The major challenges to Livestock production in Ethiopia were severe feed shortage, high disease prevalence, high predatory, poor market, genetically less productive breed, severe water shortage and high shortage of laborer [21].

Livestock production can significantly benefit the owners or producers since they can be used for milk and meat for home consumption. In addition to production for milk and meat for home consumption Livestock was also used as major source of cash income. It was also used as insurance for crop production. Farmers in all the selected study areas were willing and eager to use modern technologies because they were quite sure that improved management will improve production and productivity of their animals. Improved environment improves the genetic potential with the result of improved productivity. There are also many Non-Governmental Organizations (NGO) that are working on improving living and livelihood through improving the production and productivity of their animals. Government is also working to solve the challenges [22].

### **Challenges and Opportunities for Livestock Production and Value Chain**

A series of constraints span the livestock value chain in production, fattening and trading, and commercialization [23].

**Production:** lowland and highland livestock systems have low reproductive performance and off-take, due to: (i) input constraints of feed and water to pastoral herd size and reproduction; (ii) reluctance of pastoralists to commercialize livestock because of social importance and lack of alternative assets; (iii) limited and periodic access to appropriate animal health services; and (iv) competition of draught power with meat for young males lead to aged and low-quality off-take in highlands [24].

**Fattening and trading:** formal trading is constrained by irregular and variable quality in supply of livestock because: (i) livestock are not effective in delivering value added to their members; (ii) a large proportion of sales are on credit and incur late payment; (iii) limited transparency on quality, health, and weight; (iv) the feedlot industry faces severe constraints for feed, water, land, financing, and markets; and (v) formal trade competes with substantial informal cross-border trade due to weak highland-lowland linkages and incentives offered by the informal market [25].

Opportunities for Livestock production value chain includes population growth, urbanization, rise in income in growing urban centers of developing countries, international influences (globalization and more liberal international trade), and technological changes in the production, communication, and transport sectors. The rapid growth in demand for meat products in the world represents a great opportunity for livestock resource-rich countries [26, 27].

### **Challenges and opportunities for livestock marketing**

#### *Opportunities*

#### **I. Domestic consumption:-**

The domestic meat demand is believed to increase with increasing literacy and family income. Meat consumption is often an indicator of economic status of a country or an individual. People with a higher social or economic status demand a greater amount of high-quality meat products. The per capita consumption of meat in developed/industrialized countries is much higher than in developing countries. Countries whose population consumes the least amount of meat are located in Africa and Asia. Developed countries consumed a consistent level of 77 kg of meat per capita annually, while developing countries struggled to maintain a diet with only 25 kg of meat per capita annually. Ethiopians remained slightly below the meat intake of all low-income countries and consuming 9 kg per capita annually [28].

#### **II. Official exports:-**

There are few legal exporters engaged in the export of live animals and meat in the country. These exporters secure livestock from pastoral areas by themselves or through agents for export in live or meat form (Chilled mutton, goat meat and beef), the annual potential for export at 72,000 metric tons of meat, identified the Middle East and North African countries which are considered important for the country's export in LLP to Saudi Arabia, United Arab Emirates, Bahrain, Yemen, Jordan, Kuwait, Oman, Qatar, Iran, Syria and Egypt (NEPAD-CAADP, 2005). The annual demand of these countries is estimated to be 206,846 tons of meat and 12 million heads of live animals (Cattle, sheep and goats) [29], the estimated national off take rates of 10% for cattle, pastoral areas of the country alone, could produce 734 000 heads of beef cattle per annum [30].

### III. High demand of animals by the export abattoirs in Ethiopia:-

The export abattoirs are required to ensure a consistent and continuous supply of meat in order to meet the demand of the customers in the importing countries. Thus, there is an urgent need for export abattoirs to devise alternative strategies to ensure adequate market supply of quality live animals to meet their processing needs in order to improve their efficiency and competitiveness. There were seven abattoirs in Ethiopia which processed canned meat products mainly for the army, domestic market and some exports. These abattoirs are located in Addis Ababa, MelgeWondo, Dire Dawa, Kombolcha, Gondar and Debre-Zeit. Of these plants, MelgeWondo was to some extent preparing frozen beef and that of Debre-Zeit abattoir produced chilled beef, sheep and goat meat for both domestic and export markets <sup>[31]</sup>.

#### *Challenges*

##### I. Absence of effective grading System:-

Livestock marketing is based on quality standards. Animal's selection is purely based on eye-appraisals and exchange takes place on bargaining <sup>[32]</sup>.

##### II. Absence of market information system:-

There is no reliable source of information neither on export demand nor on domestic supply situations. Thus, producers, traders, exporters and support giving institutions are constrained by shortage of market information to rely on for enhancing production, marketing and exports <sup>[33]</sup>.

##### III. Absence of promotional activities:-

Effective export requires knowledge of the client's requirement, producing according to needs and creation of awareness on availability of products to the clients. So far, little effort has been undertaken to strengthen demand in the clients' countries and creating segments in other countries, by publicizing the special features of our products <sup>[32]</sup>.

#### **Main Challenges for Export of Live Animal and Meat**

Although Ethiopia has ample potential to export its livestock and livestock products to the Middle East and make further improvement to enter other markets, there are challenges that should be dealt with in order to realize these benefits. These challenges can be roughly grouped into internal and external challenges <sup>[34]</sup>.

#### *Internal Challenges*

The internal challenges are many and inter connected. Their major cause is under development and lack of market oriented production approach and entrepreneurial capacity by the stakeholders. These internal problems can be grouped into four depending upon the specific area to which they fall <sup>[35]</sup>.

##### I. Supply Problems:-

The country's livestock number, annual off-take, productivity, and consumption levels are not adequately known. This creates problems in planning and designing of policies to enhance the sector's development <sup>[36]</sup>.

##### II. Prevalence of diseases:-

In Ethiopia, there are many livestock diseases that create frequent livestock mortalities. The presence of livestock diseases apart from affecting the efficiency of production hampers export market development as a result of frequent bans by importing countries. Over the past few years, the country has lost a substantial market share and foreign exchange earnings due to frequent bans by the Middle East countries due to the Rift Valley and FMD outbreaks respectively in the Republic of Yemen and U.K <sup>[37]</sup>.

##### III. Traditional production system:-

Pastoralists consider their livestock as means of saving or capital accumulation. Livestock are sold when need arises for cash income or when shortage of feed and water occurs. There is no effort to strategically produce for the market by adjusting and planning production to market needs. Production planning in terms of time, type and quality of supply to maximize income is nonexistent due to lack of entrepreneurial awareness (traditional handling system). Further, the private sector has not yet proved its adequacy in promoting production through additional investment and creation of marketable surplus <sup>[38]</sup>.

##### IV. Illegal export trade:

Annual outflow of livestock through borders (illegally) at 325,800 cattle, 1.15 million shoats and 16,000 camels. The sources of this illegal export are Afar and Somali Regions, Borena and East Hararghe Zones in Oromia and South Omo, SNNP. The immediate destinations for such exports are Djibouti, Somalia and Kenya. The livestock are mostly for re-export to the Middle East Countries from Somalia. The Djibouti's and Kenyans' re-export after meeting their domestic consumption. This loss of exportable surplus has affected the country through loss of foreign exchange; income taxes and its impact on legal livestock trade <sup>[39]</sup>.

##### V. Inadequacy of infrastructure:-

The sources of livestock for export are pastoral areas that are far from the center. The Afar and Somali Regions, parts of Borena in Oromiya are lowland areas forming internal boundary to neighboring countries. Further, the pastoral livestock producers are scattered through large expanse of lowland and semi-arid areas. For efficient marketing, adequate livestock markets, stock routes, resting places, quarantine stations need to be developed to allow easy access to traders for assembling and transporting livestock. However, these infrastructures are poorly developed in the pastoral areas. Further, export standard slaughterhouses are located in central areas far from surplus producing areas. In addition, transport facilities that allow adequate flow of livestock and meat are not adequately employed <sup>[38]</sup>.

#### *External Challenges*

##### I. Competition:-

Many countries compete for livestock and products markets in the Middle East. The main competition for Ethiopia comes from Somalia, Sudan, South America, Australia, Newzealand, Eastern Europe and the European Union. Available information indicates that Somalia exports up to 2 million heads of sheep and goats and 10,000 heads of cattle a year. Its major source of supply is believed to be the Ethiopian Somali Region, Eastern Hararghe and parts of Bale zones of Oromia <sup>[39]</sup>.

##### II. Repeated bans:-

Importing countries frequently ban imports of meat and livestock from the horn as a result of outbreaks of livestock diseases. Thus, concerned

institutions should work closely to detect an outbreak of Major diseases and make necessary precautions <sup>[32]</sup>.

### III. Inadequate port facilities:-

The Djibouti port is the only port for exporting livestock to the Middle East countries. However, the port is ill-equipped for handling large number of livestock. The livestock-resting place is too small. It has no sufficient fencing and there is no compartment for handling different categories of livestock and isolation of sick animals <sup>[40]</sup>.

### SANITARY REGULATIONS ON LIVESTOCK EXPORT TRADE

The exposure of livestock trade to disease epidemics is undermining investment in a potentially valuable economic activity that would increase employment in rural areas, raise rural incomes and assist in alleviating poverty. The diseases responsible for the risks effectively prevent the entry of the countries into world trade in livestock. Furthermore, world trade is now becoming more competitive and the requirements more stringent, which definitely make the export trade more challenging. The world livestock and livestock products trade is influenced significantly by sanitary and health restrictions imposed by importing countries. The establishment of the World Trade Organization (WTO) and the coming into force of the Agreement on the application of Sanitary and Phytosanitary Measures (SPS Agreement) has a significant impact on international trade in livestock and livestock products. The ultimate sanction is to impose a partial or total ban on imports from countries that fail to meet the required SPS standards <sup>[41]</sup>.

SPS policies are guided by international standards, such as those recommended by the Office International des Epizooties (OIE). Generally the health and hygiene standards adopted by organizations like the OIE are substantially higher than those of the developing countries. Although such controls in the importing countries may reflect legitimate concerns regarding food quality and safety, and protection of animal and human health, the high costs of compliance may prove prohibitive for countries like Ethiopia <sup>[42]</sup>.

In the short term the case of raising SPS standards, in Ethiopia, must depend largely upon the domestic benefits of improving public and animal health, securing the traditional livestock export market in the Arabian Peninsula and promoting intra-regional trade through regional trading blocs. Gains from increased trade in meat or live animals with developed countries will be small or non-existent in the short term. Developing countries, trading among themselves, might benefit from harmonizing SPS measures, although at a lower level than the recommended by international standards <sup>[43]</sup>.

### CONCLUSION AND RECOMMENDATIONS

Livestock production system in Ethiopia is categorized as pastoral, agro-pastoral, mixed crop-livestock farming, urban and peri-urban farming and specialized intensive farming systems. The economic contribution of livestock sub-sector in Ethiopia is about 12% of the total and 33% of agriculture GDP and provides livelihood for 65% of the population. Despite the contribution of livestock to the economy and to smallholders' livelihood, the production system is not adequately market-oriented. Moreover, both legal and illegal marketing systems are operating at different magnitudes. Domestic consumption, official exports and high demand of animals by the export abattoirs are among the major opportunities for the demand of live animal and meat. Although, there are the aforementioned opportunities various like absence of effective grading system, absence of market information system, absence of promotional activities, supply problems, prevalence

of diseases, traditional production system, illegal export trade, inadequacy of infrastructure, competition, repeated bans and inadequate port facilities are described under the challenges of live animal and meat marketing system.

Based on the above conclusion the following recommendations are forwarded:

- ✓ Major disease should be controlled by strengthen the present veterinary service through vaccination and availing veterinary drugs.
- ✓ Conducive legal channels need to be developed.
- ✓ Market infrastructure and service facilities along borders, and implementation of strategies with neighboring countries for legalizing trade should be developed.
- ✓ Major infrastructure for livestock marketing like livestock transportation facilities, improved slaughter house, livestock resting sites, and storage and quarantine facilities at required sites should be present.

The government should be actively involved for the control of illegal trade of live animals across the borders.

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