

## Review

# Review on challenges and opportunities of beef cattle production and marketing in Ethiopia

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Ethiopia is one of the countries that have largest livestock populations in Africa. Livestock in Ethiopia provides drought power, income for farming communities, means of savings and investment as well as an important source of foreign exchange earnings to the nation. Beef cattle production is an integral part of livestock sector which is undertaken with the main purpose of beef production and consumption. It is also important in Ethiopian economy. The annual contribution of cattle to meat production in Ethiopia is estimated at over 3.2 million tones, representing over 72 % of the total meat production. The annual potential for export is estimated to be 72,000 tone of meat with an equivalent value of 136 million USD. However, current knowledge on challenges and opportunities of livestock production (breeds and breeding, feeds and feeding, housing and sanitation, disease and parasite control) and marketing conditions (market structure, demand, supply, price and market performance) are inadequate for designing policies and establishing responsible institutions for overcoming the prevailing beef cattle production and marketing problems and for exploiting the existing beef production and utilization potential.

**Key words:** beef, Ethiopia, challenge, opportunity, production, marketing

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## INTRODUCTION

The agricultural sector plays an important role in the overall development of the economy of Ethiopia. The sector play major role in the national economy and it is the source of income and employment for the rural population [1].The sector account for 46% of the grows domestic (GDP) and livestock contribution 30% to the agriculture GDP and 19% to the export earnings [2]. Meat production and consumption is important in Ethiopian economy. Knowledge on how marketing route and system could contribute to the spread of diseases and the implications of these for national and international trade in livestock is also highly in adequate to design any policy or institutional innovation to improve marketing for benefit of the poor [3],further regaining the export market will require on understanding of the market potential in the importing countries including growth in demand,

sanitary and phyto-sanitary and other quality requirements , rules and regulations governing the market .

The live stocks marketing authority [4] estimated annual human population growth rate of 2.4%. According to this rate the present 77.4 million Ethiopia's human population will increase to about 149.3 million by the year 2020[5]. The rural to urban ratio will also continue to change and is expects to increase in favor of urban population in the coming 25 years. According to [6] projection by the year 2020 the rural and urban distribution of 84.7 % and 15.3% will gradually reach 80.1 % and 19.9%. Thus, the demand for animal products is expected to increase substantially with the projected growth in human population, rapid urbanization and growth in per capital income.

## **Challenges of beef cattle production and marketing in Ethiopia**

### **Challenges related to beef animal exporting routes and ports.**

Ethiopia is exporting meat and live animals to different countries. United Arab emirates is the largest importer of meat buying 50% of the total meat followed the kingdom of Saudi Arabia with 30%, Sudan and Somalia stood first and second importers of live animals.(primarily for export to the other countries) with each buying lot 656 and 100, 278 head of animals[7]. Ethiopian livestock are trucked from Ethiopian quarantine stations to the Djibouti quarantine facility, or trucked across the border into Somali land and shipped from the ports of berbera and Bossaso to Djibouti to the Middle East [8]. This escorted to the animals to be stressed and to reduce their body weight as well as reduction in quality of meat when the animals slaughtered the informal live animals' trade from eastern Ethiopia/ Somalia region to Somalia land represents the largest share of cross border trade interims of volume and value.

### **Challenges related to beef animal for export.**

It has been observed that the live animal throughout is inadequate. As a result, the existing meat processing facilities operate at less than 50%of their operational capacities. This is apparently due to inadequate supply of the required quality live animals for meat processing by the export abattoirs. The export abattoirs are competing for the domestic supply of live cattle with the demand for live animals for domestic consumption and for formal and informal (cross-border) trade [9]. The legal export of both live animal and processed meat is thus constrained do to shortage of legal system created by the illicit export. According to [10], the reported factors contributing to large volumes of informal livestock trade and exports are onerous procedures required to export formally including export license, quarantine, banking clearance for remitting foreign exchange, minimum weight restrictions and informal minimum price requirements.

### **Challenges related to beef cattle breeding program.**

Meat production characteristics differ in relation to economic importance, especially when considering different phases of production system. In meat and live animal export, the operation such as raising breeds, reproduction and slaughter (feed lot) operations are important. However, the first two operations are not yet fully implemented In Ethiopia. Poor management of replacement heifer and cow herds has also led to the failure of achieving optimum reproduction performance in

beef cow herd. Therefore, the major aim should be directed in attaining a high rate of calf crop (90-95%) with (70-80%) of the calves dropped in 21 a day period. this goal can only be achieved by proper feeding of the herd during critical periods. Minimizing calf losses of birth through adequate super vision proper super vision of mating during the breeding period so, that every cow gets breed to a fertile bull and has the maximum opportunity for pregnancy to ensure.

### **Challenges related to beef cattle production system.**

According to the fourth livestock development project [11]. There are three types of cattle fattening systems in Ethiopia. There are traditional by product based fattening and the Hararghe type of fattening. In the traditional system, oxen are usually sold after the ploughing season while they are poor body condition. Meat yields are low; the beef is of poor quality and returns to farmer are often even to buy a replacement ox. Cattle in the low lands are rarely fattened and are often sold in poor body condition and of low price.The byproduct based fattening system is a type on which agro-industrial by-products such as molasses, cereal milling by product and oilseed meals are the main source of feed. In Hararghe fattening system farmer by young oxen from the adjacent low lands pastoral areas, used them for ploughing for several years and they fatten and sell them before they become old and emaciated. The systems are largely based on cut and carry feeding of individually tethered animals.

Fattening enterprises in western part of the country typically take immature feeder animals and bring them to market weight for sale to slaughter. Cattle fattening is also a traditional occupation in some region in Ethiopia, e.g in Hararghe zone of the Oromia region where locally named Harar beef is produced. Fattening activity in the Amhara region, however differs substantially from the above mentioned enter prices. Small holder farmer commonly fatten mature and therefore much older animals (5 to 7 years old) for short duration (usually three month). Ordinarily, farmers fatten their draught oxen so that they can fetch better price when brought to market. On the other hand some farmers, purchase oxen specifically to fatten and sell them so as to get high price per weight margins on each fattened animal. In such case, animals are purchase based on their large skeletal frames and body conformation. In any case, whether purchase or own animals are used for fattening purposes they have already their full skeletal size [10]

### **Actors of fattened cattle**

According to [12] farmers in the east Ethiopia fed oxen for more than one year, which is also significantly exceeds the average fattening length in southern parts of Ethiopia. Majority of farmers in the region marketed their

fattened cattle during the main holidays. This is an agreement with the reports indicated by [13] to report that cattle fattening is a seasonal operation in Walayta with a peak from June to September and this is governed by seasonality pattern of feed availability and main holidays. None of the farmers used scientific measurements to weight the live weight of animals while purchasing and selling wills in good agreement with the findings of [14] who reported that marketing of livestock is not determined on the basis of weight and which is unfavorable marketing system and discourages price on the producer's side.

The market price of fattened cattle was highest from September to April. Reasons for this might be due to the availability of the main holidays in September (Meskel), December (x-mass) and in April (Easter). However the high income level of farmer in that season increases meat consumption which directly influence on the price of fattened animals. As contrary to this reports the market price of fattened animals is highest from May to September in Amhara region of Ethiopia [15].

Among the marketing actors brokers have a crucial role in bargaining for traders as well as farmer producers by getting about 100.00 birr per fattened cattle on average from both sides. This is significantly different from brokers free in Bale livestock market of the some country which ETB 101 head of cattle [11]. In the region, so far there is no well-organized cooperatives that perform fattening and marketing have not been generally administered [16].

### **Challenges related to feeds and feeding system of beef cattle**

Major feed resource used as a basal diet for fattening cattle were crop residues and natural pasture which is in line with the findings of [13] in southern region and [15] in Amhara region of Ethiopia. Consistent to [13] supplementary feeds for fattening cattle were whole parts of false banana, sweet potato vein and tuber sugar cane, mineral soil and residuals of coffee and beverages. In the present study farmers supplement fattening cattle with improved forage especially desho grass (*brachiariabrizantha*), Napier grass (*pennisetumpureum*) and concentrate feed specially wheat bran which is not in agreement with [13] which might be due to the renewed interest of farmers to introduced improved forages and feeds in various parts of the country [16].

Farmers in southern Ethiopia provide both basal and supplementary feed in as tall feeding system which is in close agreement with fourth livestock development project [11] which indicate that hararghe fattening system is rarely based cut and carry feeding of individual tethered animals and grazing is rare. The present study indicated that pair to actual fattening period, farmers having enough private grazing land keep their fattening cattle on good and enclosed pasture land for a short time

per day for exercising herbage consumption purpose, burn cleaning, to animal in better condition while draught and to reduce the feed cost and are in agreement with [13]. In agreement with the present study, [15] reported that shortage of capital was the first constraints to cattle fattening in Amhara region of Ethiopia. Credit provision was crucial problem to animal fatteners in the region which might be due to source of financing, generally involving subsidized, low interest credit; not to allow small holder to borrow money unless they are organized in group or through cooperative agreement [16].

[11] Reported that feed quality and quantity is the main limitation to animal production in Ethiopia which is in agreement with present findings. In the line with the present study, the central southern region is highly population with maximum of about 670 persons per km<sup>2</sup> and therefore intensification is probably a better path for this area since there is no possibility for further land expansion [17].

### **Disease problems**

Disease and parasite are one of the major constraints that contribute to the low production and productivity of beef cattle in Ethiopia. The disease and parasite infection is highly damaging the animal during drought season and at the time of feed shortage. Animals starved and under nutrition are not able to tolerate the effect of disease and parasites so that easily damaged and died during drought periods. The prevalence of disease and parasites usually reduce the meat yield, carcass weight, growth and productive the animal in general and finally lead to death of animals.

Relatively high disease and parasites infestation of animals is common in kolla agro-ecology compared to Woinadega agro-ecology. This seems to be due to the presence of more forest and fallow-grazing lands and unsuitable and rugged topography in kolla agro-ecology, which makes difficult for veterinary services and movement of animals is also common from place to place in this area [18] and [19].

### **Challenges related to infrastructure.**

The source of cattle for export is pastoral areas that are far from the center. The afar and Somali regions, parts of Borena in Oromia are lowland areas forming internal boundary to neighboring countries. Further the pastoral cattle producers are scattered through large expanse of lowland and semi-arid areas. For efficient marketing adequate cattle market, stock routes, resting places, quarantine stations need to be developed to allow easy access to traders for assembling and transporting cattle however, these infrastructures are poorly developed in the pastoral areas. Further, export standard slaughter

houses are located in the central areas far from surplus producing areas. In addition transport facilities that allow adequate flow of cattle and meat are adequately employed. [16].

## **Opportunities of beef cattle production and marketing in Ethiopia**

### **General opportunities**

Ethiopia has some of the important opportunities influencing the meat and live animals industry, particularly the export sector [20]. The country has large livestock population with diverse and adequate genotype; diverse agro-ecologies for production of different types of livestock government interested and support to livestock industry, increasing number export abattoir and live animal exporter; the expansion of agro-industries and the increase of by-product feedstuffs allowing for enhanced productivity; proximity to middle east countries and adaptation of importing demand for meat and live animal including the domestic market. There is a large potential to expand Ethiopian exports to the Middle East if the value chain actors in Ethiopia meet export market standards. The domestic demands for beef in Ethiopia has been rising due to the factors of population growth, urbanization, income growth, demographics and a preference for eating meat including beef. The total consumption of beef is estimated of 298,000 Mt in 2002. Consumption growth at a rate of 2.6% per year from 1993 to 2000. More recently consumption has been increasing at around 2.25 per year.

### **Market opportunity**

Global consumption of livestock product is growing rapidly. Population and economic growth in developing countries are increasing the demand for food. The international food policy research institute (IFPRI) projects that annual meat demand will increase by 6 to 23 kg with this strong demand, the IFPRI projects that livestock populations will also increase rapidly. It estimated that between 2000 and 2050 the global cattle population will increase from 1.5 billion to 2.6 billion. The expected growth in demand and supply will also mean profound changes from livestock production systems. Expanded market activity and rise in exports of livestock and livestock products will increase the global demand for animal feed.

### **Large domestic livestock population**

Ethiopia, considering its large livestock resources based can potentially take advantage of livestock growth

opportunities in the global market place. Ethiopia is the first in Africa and the tenth largest livestock producers in the world comprising about 52 million cattle. The livestock subsector place important roles in the economy small holder farmers and the national economy. It contributes an estimated 12% of the total national GDP, over 45% of the agricultural GDP and about 16% of the total export s. In Tigray regional state has considerable livestock resource with 3,539,395 head of cattle in 2012. In this year Tigray accounts for 6.4% of cattle in Ethiopia [21]. About 8.4% of the country livestock found in this region.

### **Availability of feed resource and suitable agro-ecology**

Ethiopia is known to be a home for many indigenous fodder species under different agro-climatic zone, such fodder species are namely Rhodes grass, Napier grass, Desho grass and Alfalfa etc. Rhodes grass is more productive in the central and north western high lands of the country are beneficial to increase feed production. Rhodes grass was preferred by farmers as it performs better and alleviates farmers feed shortage problem. Napier grass was found more productive in the central high lands of Ethiopia. There is enough grazing (communal as well as individual) land that is not utilized by food crops in kola agro-ecology. If this grazing land is properly managed it could be a good source of quality feed. Forest areas (Closure Mountains and hills) are also good source of natural pasture and browse trees (indigenous) for animal feeding. Farmers usually in these areas collect the natural pasture within the forest and shrubs and feed as green and/ or conserve for drought time and dry seasons, [22].

Ethiopia has varied agro-ecological zones that put the country at an advantageous position in possessing relatively huge number of different livestock species as compared to other African countries. Ethiopia's low land cattle breed is highly demanded in neighboring countries as well as strategic livestock market of the Middle East. The country's agro-ecological zone is roughly divided in to two major parts. The high land with an altitude of over 1500 meters above sea level and low lands with an altitude of less than 1500 meters of the country. To earn substantial benefit from this resource the government of Ethiopia has been under taking various livestock development process to increase productivity and enhance the wellbeing of the community.

## **CONCLUSION**

Generally live animals make a considerable contribution to the economy in terms of export earnings, a great number of the country's cattle's have been traditionally smuggled to neighboring countries. The

challenges related to exporting channels are shortage of live animal due to shortage of animal feeds and lack of well-established reproduction. This review showed that age of fattening oxen was very old and most of the feed resource was locally available. The use of improved forage and concentrate feeds for cattle fattening is not the most common but growing practice.

Lower initial capital, limitation in credit provision, lack of awareness, disease prevalence, lower feed availability and quality were the main constraining factors that hinder cattle fattening in the country. Ethiopia has some of the important opportunities influencing the meat and live animals industry, particularly the export sector.

The country has large livestock population with diverse and adequate genotype; diverse agro-ecologies for production of different types of livestock government interested and support to livestock industry, increasing number export abattoir and live animal exporter; the expansion of agro-industries and the increase of by-product feedstuffs allowing for enhanced productivity; proximity to middle east countries and adaptation of importing demand for meat and live animal including the domestic market. There is a large potential to expand Ethiopian exports to the Middle East if the value chain actors in Ethiopia meet export market standards.

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