



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Livestock Marketing, Food Security and Related Issues in Ethiopia*

Mohammad A. Jabbar

International Livestock Research Institute
PO Box 5689, Addis Ababa, Ethiopia

Gezahegn Ayele

Ethiopian Agricultural Research Organisation,
PO Box 2003, Addis Ababa, Ethiopia

Abstract

Ethiopia has a large livestock population that performs multiple functions and contributes to food security both directly and indirectly. However, the contribution of the sector to the economy is much less than its potential due to various reasons, one of the important reason lies in the problems associated with domestic and international marketing of livestock. Current knowledge on livestock market structure, performance and prices is poor and inadequate for designing policies and institutions to overcome perceived problems in the marketing system to address its links with food security. Knowledge on how marketing routes and systems contribute to spread of diseases and the implications of these for national and international trade in livestock is also highly inadequate to design any policy or institutional innovation to improve marketing for the benefit of the poor. Further, exploitation of the export market will require an understanding of the market potential in the importing countries including growth in demand, SPS and other quality requirements, rules and regulations governing the market, Ethiopia's competitiveness in the market in relation to alternative suppliers and ability of the domestic market to respond to the export market opportunities.

1. Introduction

Livestock perform multiple functions in the Ethiopian economy by providing food, input for crop production and soil fertility management, raw material for industry, cash income, saving, fuel, social functions, and employment. Various estimates show that the livestock subsector contributes 12-16% of the total and 30-35% of agricultural GDP respectively (MEDaC, 1998). The sector's contribution to national output is underestimated because traction power and manure for fertilizer are not valued. Contributing 12-15 of total exports earnings, the subsector is the second major source of foreign currency through export of live animals hides and skins (MEDaC, 1998; FAO, 1999). The sector also employs about one-third of the country's rural population. Therefore, livestock can serve as a vehicle for

* In: G Ayele, S W Omamo and E Gabre-madhin (eds) (2004) The State of Food Security and Agricultural Marketing in Ethiopia. Proceedings of a Policy Forum jointly sponsored by EDRI and the East Africa Food Policy Network of IFPRI, Ghion Hotel, Addis Ababa, Ethiopia, 15-16 May 2003. pp.145-165.

improving food security and better livelihood, and contribute significantly to agricultural and rural development.

It is difficult to establish accurate livestock population and its growth trends in the country, especially because of the lack of comprehensive data from the large pastoral areas. According to FAO (1999), there are about 35 million cattle, 39 million sheep and goats, 8.6 million equine, 1 million camels, and 55.4 million chickens in the country. The Ethiopian Central Statistical Authority (CSA) estimated 35.1 million cattle, 12.2 million sheep, and 9.5 million goats in the highlands (1500 m asl) and 3 out of 9 zones in the pastoral lowlands (CSA, 1999). An estimate by ILRI (2003) combining, reconciling and synthesizing data from different published and unpublished sources indicates a total population of 40.5 million cattle, 18.5 million sheep and 14.2 million goats in the whole country. The Somali region, the principal pastoral area, alone accounts for 14.8% of the national herd of cattle and 35.1% each of sheep and goat populations. These population figures, even if not definitive, are indicative of a large livestock resource in the country.

Despite the large number of livestock in the country, its role in the overall economy remains less than its true potential. Problems associated with both domestic and export markets are among the reasons for failing to exploit the potential of this sector. Among livestock exports, skins and hides have the largest share followed by live animals (MEDaC, 1998; FAO, 1999). In recent years, exports of live animals to the Middle Eastern countries, the traditional outlet for Ethiopian animals, have substantially decreased since these countries have imposed ban on imports of live animals from the Horn of Africa due to prevalence of Rift Valley Fever (RVF). Although the ban was triggered by the outbreak of RVF, most likely the ban has been also prompted by a number of other factors, e.g. change in consumer preferences and greater demand for high quality products with adequate guarantees of food safety in the importing countries while supply conditions in Ethiopia remained virtually unchanged to meet the rapidly changing market conditions in those countries. However, adequate understanding of these changing market conditions are not available among the export market stakeholders in Ethiopia and without such an understanding and appropriate response, it may be difficult to develop proper strategies to reenter the lost market.

Some of the issues involved in both domestic and export marketing that have implications for livelihood and food security of the livestock keepers are discussed in this paper. In section 2, highland-lowland differences in livestock production and marketing objectives having implications for food security are briefly discussed. In section 3, livestock market structure and price formation in both domestic and export markets are discussed. Summary and conclusions are presented in section 4.

2. Highland-lowland differences in livestock production and marketing objectives

National statistics show that livestock population is increasing over time in spite of decreasing feed resource base due to human population pressure. However, an extensive sample survey in the highlands covering 85 Peasant Associations (PA) in 36 woredas in the Oromiya region, 49 PAs in the Amhara region and 50 Tabias in Tigray region show a general decline of livestock population between 1991 and 1999. Only in a few communities oxen and donkey populations have slightly increased while population of other types of livestock decreased. For example, in the Oromiya region, human population density in the sample PAs

increased by 37%, livestock density (TLU/ha) decreased by 6% and livestock ownership per household (TLU/household) decreased by 28% due to an increase in the number of households and a decrease in the livestock population. Changes in the number of different types of animals between 1991 and 1999 are shown in Table 1. Also proportion of households owning different types of livestock declined significantly in 1999 compared to 1991 (Table 2). Population density, market access, ecological condition, land redistribution, primary and secondary activity of households, household size, stock of animals in base year, principal and secondary feed resource, terms of trade between crop and livestock, access to credit are some of the most important factors that influenced the changes in livestock ownership between 1991 and 1999 but the set of factors influencing change of ownership were not the same between the three regions, and between different ecological zones within each region (Jabbar et al., 2002).

Table 1: Changes in livestock ownership in sample PAs in Oromiya region, 1991 to 1999

	% change in mean number per PA	% change in mean number per household
Oxen	2.8	-22.4
Cows	-11.1	-33.4
Other Cattle	-10.7	-30.4
Sheep	-16.5	-39.3
Goats	-4.6	-30.1
Donkeys/Mules	22.5	-2.4
Horses	-4.7	-25.7
Chicken	20.8	-5.9
Beehives	-18.5	-35.7

Source : Jabbar et al., 2002

Table 2: Proportion of households in sample PAs that owned different types of livestock in 1991 and change in ownership in 1999 in the highlands of Tigray, Amhara and Oromiya regions

Animal type	Tigray region		Amhara region		Oromiya region	
	% hh owned in 1991	% change in 1999	% hh owned in 1991	% change in 1999	% hh owned in 1991	% change in 1999
Oxen	65	17	73	-19	62	-5
Cows	41	-7	46	-35	65	-11
Other cattle	Na	Na	34	-43	62	-13
Sheep	35	-20	38	-34	43	-28
Goats	40	-30	28	-46	28	-25
Donkeys	42	17	32	13	33	-6
Horses	1	-19	9	-11	20	-25
Poultry	Na	Na	61	-8	53	9
Beehives	13	31	na	na	11	-36

Source: Jabbar et al., 2002

For understanding marketing structure, performance and associated problems in the country, a distinction needs to be made between the production and marketing objectives and strategies of highland and lowland livestock as livestock perform significantly different functions in these two domains and their major market outlets are also different. In the highlands, livestock is an important component of the mixed farming system where draft power, manure and cash income are principal reasons for keeping animals, though other functions are also important. Field studies in different parts of the country in the 1980s showed that livestock account for 37-87% of total farm cash income of farmers, indicating the importance of livestock in rural livelihood, especially as one moves from mixed farming in the highlands to agropastoral systems on the highland-lowland margins (Gryseels, 1988). However, despite the reasonably high share of cash income coming from livestock as a source of smallholders' livelihood, the production system is not adequately market-oriented. There is little strategic production of livestock for marketing except some sales targeted to traditional Ethiopian festivals. Although livestock is an essential component of smallholder mixed farm systems in the highlands, it is not yet a primary livelihood activity or a primary source of cash income for any significant number of communities or households. For example, the community survey in the Oromiya region mentioned above showed that livestock ranked 3 on average out of top five cash income sources in the sample communities, and it appeared as a secondary/tertiary livelihood activity or source of overall income for about 40% of the households in the region. This situation has to be judged against the fact that livestock population and proportion of households owning livestock have also been decreasing over the period. Proportion of households using livestock as primary or secondary form of saving also decreased from about 48% in 1991 to 34% in 1999 and there has been an increase in cash form of saving. This may be an indication of increased monetisation and access to financial infrastructure in the rural economy (Jabbar et al., 2002)

The primary reason for selling livestock in the highlands 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. For example, a survey of weekly terminal (or close to terminal) cattle markets in Addis Ababa, Nazereth, Koka and Guder before, during, and after Easter in 1983-84 revealed that of the cattle sold majority were highland zebu, 96% were castrated oxen, 3% cows and 1% non-castrated oxen; 60% of the sold cattle had full mouth (i.e. had a full set of teeth) and 19% had broken mouth indicating that these were old, culled animals (Kebede and Lambourne, 1985). A survey in 2003 in three markets in the Rift Valley and Nazereth and Addis Ababa terminal markets revealed a similar pattern: most of the animals in the markets came from Bale-Arsi highlands, about 90% of the sold animals were males and 50-70% were sold due to old age that required culling and replacement (EARO, 2003).

On the other hand, pastoral livestock provide food, cash income and a form of saving and wealth. Pastoralists also sell animals at times of cash needs to purchase food and other necessities, so they sell more frequently than highland livestock keepers, and extent of sale may depend on initial wealth (herd size)- more wealthy may sell more (Davies, 2003). Frequency of pastoral livestock sales also generally increase in response to drought, pasture scarcity and weather shocks. Yet low overall off-take rate and apparent high stocking rate are generally considered as major problems of pastoral systems, which aggravate during cyclical drought and famine causing enormous loss of stocks at times. Similarly, good weather conditions and pasture availability may trigger purchases to rebuild stock after a drought

period. This phenomenon was observed during the past eight drought episodes that affected Ethiopian pastoral areas in 1972-74, 1981-84, 1986-87, 1991-92, 1994-95 and 1997-2000. During these occasions, huge stock losses and market price reduction adversely affected the livelihood of pastoralists and they usually needed emergency food and other relief assistance often lasting longer than the drought period to help them rebuild stock and their usual pastoral life pattern (World Bank 2001). Major proportion of marketed livestock from the pastoral regions enters the export market rather than the domestic market. In fact, economic exchanges between the highland and the lowland are rather minimal as livestock export earnings from outside Ethiopia are used for importing consumable and other goods into the pastoral areas. That is why, surplus food production in the highlands may co-exist with extreme food insecurity in the lowlands due to lack of adequate trade links with the highlands, and this situation worsen during drought periods when low purchasing power in the lowlands act as a further barrier to economic links with the highlands. During drought periods, export market outlets may be oversupplied with low quality animals, and in the absence of any market infrastructure to deal with emergency purchases of large numbers of animals as used to be done in Kenya, many animals may remain unsold and price fall drastically. Pastoral livestock development problems are therefore not just problem of drought, water and feed shortages and of low offtake and marketing, but a political, social and economic problem of integrating the pastoral society into the overall national economy and society.

These differing production and marketing objectives and strategies between the highland and the lowland have important implications for the market structure and performance, price formation in the markets, and the livelihood and food security effects of livestock keepers.

3. Livestock market structure and prices

3.1 Domestic market structure and price formation

The structure and performance of live animal markets, both for domestic consumption and for export, are generally perceived to be poor. Lack of market oriented production, lack of adequate information on livestock resources, inadequate permanent animal route and other facilities like water and holding grounds, lack or non provision of transport, ineffective and inadequate infrastructural and institutional set-ups, prevalence of diseases, illegal trade, and inadequate market information (internal and external) are generally mentioned as some of the major reasons for the poor performance of this sector (Hurissa and Eshetu, 2002 ; Aklilu, 2002). However, some of these conclusions are based on outdated and inadequate field research.

Several market structure studies and price analysis of various livestock markets in the country (MOA, 1981; AACMC, 1984a; 1984b; 1984c) identified a four-tier domestic market structure (Figure 1). Main actors of the 1st tier are local farmers and rural traders who transact at farm level with very minimal volume, 1-2 animals per transaction irrespective of species involved. Some traders may specialize in either small or large animals. Those small traders from different corners bring their livestock to the local market (2nd tier). Traders purchase a few large animals or a good number of small animals for selling to the secondary markets. In the secondary market (3rd tier), both smaller and larger traders operate and

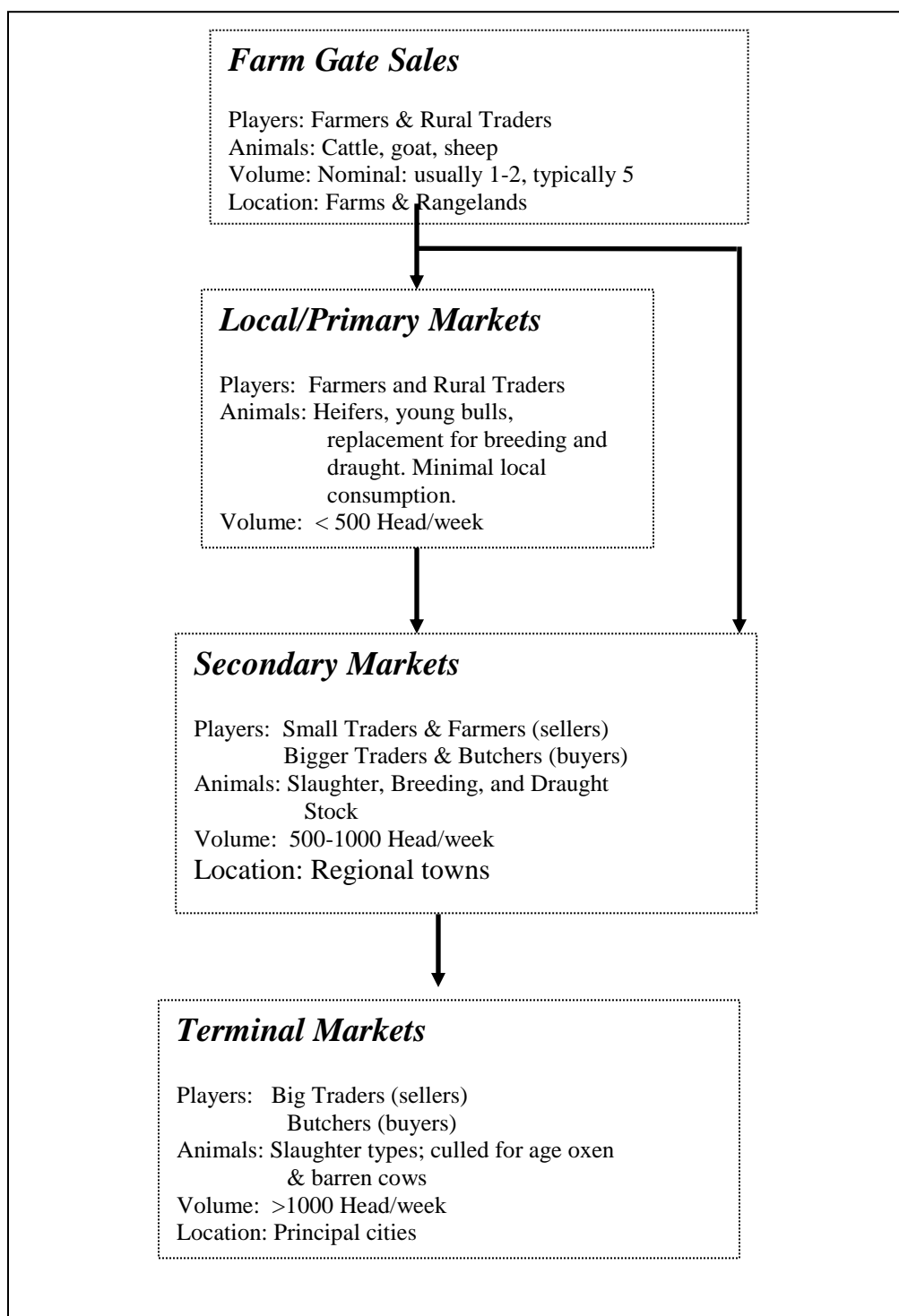
traders and butchers from terminal markets come to buy animals. In the terminal market (4th tire), large traders and butchers transact larger number of mainly slaughter type animals. From the terminal markets and slaughterhouses and slabs, meat reaches consumers through a different channel and a different set of traders/businesses. The channels from Addis Ababa terminal market to consumers in the city are depicted in Figure 2. Consumers get meat through one of the three channels. They may purchase live animals directly from the terminal market and slaughter by themselves or they may get meat from markets, which by-pass the formal procedures through abattoirs; or they may access from butchers who process the meat via abattoirs. In the former two cases, consumers' health may be at risk of zoonotic diseases hazard and the government is also denied revenue from service charge from Abattoirs.

Apart from these general description of the structural relationships between the different layers of markets, little is know about how the different layers actually function, how market actors at different layers gather and exchange information, interact, negotiate and effect transactions, settle disputes, how costly and effective the transactions are and who benefits how much from these transactions. Also what kind of organizational and institutional arrangements support or hinder these transactions are not well known. Yet such understanding is essential for designing policy and institutional support to facilitate market development for the benefit of producers, consumers and intermediaries alike because once trade linkages expand beyond local level across space and time, transaction costs related to monitoring and enforcement increase sharply, and the local social network or relationship needs to be replaced and complemented by formal organizations and institutions enforced by the state (North, 1990).

Livestock markets in the country are generally under the control of local authorities. Livestock market locations in primary and secondary markets are typically not fenced; there are no permanent animal routes and no feed and watering infrastructures. Yet buyers and sellers are subjected to various service charges by the local authority as well as other bodies. For example, service charges for use of terminal markets range between birr 2 -10 for cattle and 0.25 cents to Birr 2 for sheep and goats (depending on the city or municipality), and Birr 2 per head for cattle and one Birr for a sheep or goat are charged for quarantine services. In addition, Inland Revenue collects Birr 5 per head of cattle sold and one Birr per sheep or goat sold (LMA, unpublished data). The Livestock Marketing Authority (LMA) has recently proposed some stock routes based on past knowledge about animal movement. However, closure of the Eritrea ports and ban on imports by the Arabian peninsula in recent years have probably changed the pattern of animal movement, which also need to be recognized in developing new routes to meet evolving domestic and export markets (Ayele et al., 2003).

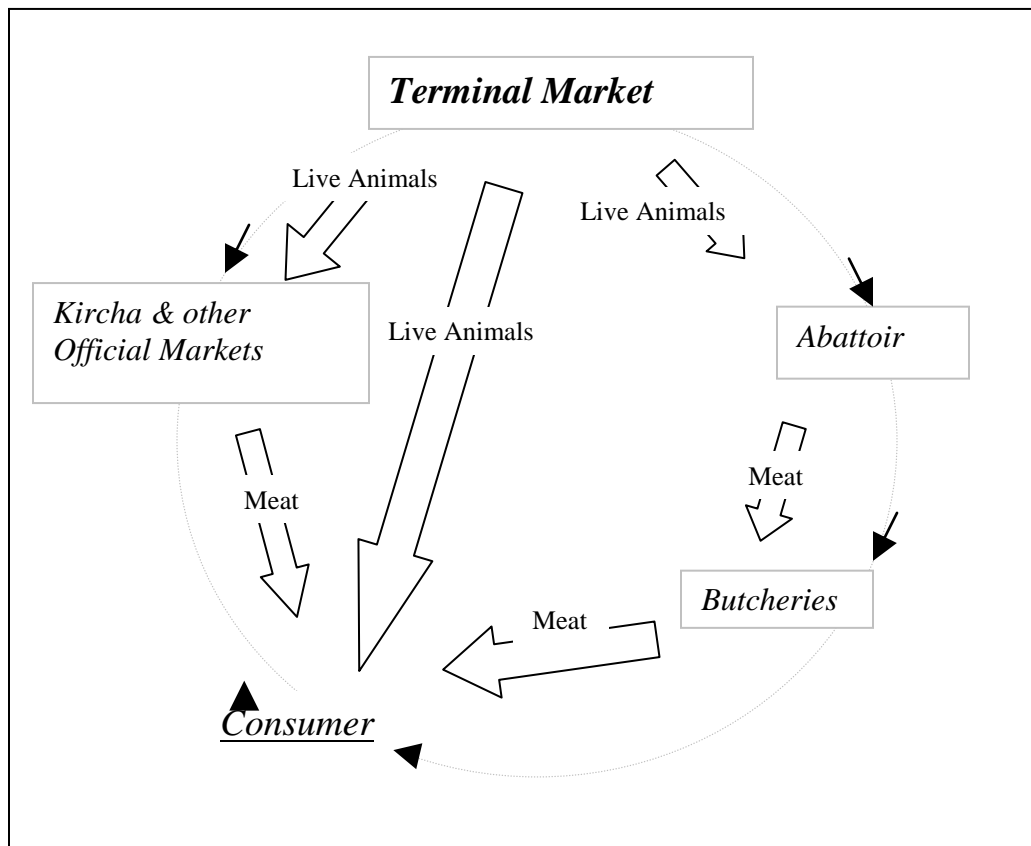
Markets are dispersed with remote markets lacking price information. Generally, the number of animals offered in a market is usually greater than the number demanded, so there is excess supply. This effectively suppresses producer prices since the more mobile trader is better informed on market prices, and better information combined with excess supply place the trader in a better position during price negotiation.

Figure 1: Typical Ethiopian livestock market structure



Source: Kebede *et al.*, 1988; Kebede and Lambourne, 1985.

Figure 2: Flow of livestock and livestock products from the Addis Ababa terminal market to final consumers



Source: Asamenew, 1977.

Livestock are generally traded by ‘eye-ball’ pricing, and weighing livestock is uncommon though auctions used to be practiced in some of the southern (Borena) markets where weighing was also practiced (MOA, 1976). This has been abandoned in recent years. Prices are usually fixed by individual bargaining. Prices depend mainly on supply and demand, which is heavily influenced by the season of the year and the occurrence of religious and cultural festivals on the one hand and occurrence of drought or other weather shocks on the other. For example, Northern Ethiopia’s livestock supply is heavily influenced by the severity of the dry season; supply peaks after the October-January rainy season then drops rapidly. In the South, low sales volume characterize the July-September main rainy season, and the Lent fasting period (February-April), but trade peaks immediately following these periods (Tilahun, 1983).

Yearly price variation may also be triggered by general crop sector performance and weather patterns. It is often argued that in mixed farming systems livestock may serve as a hedge against risk of crop failure as livestock can be sold to derive cash in the absence of crop output and income. However, crop sector performance may act as a double-edged sword for livestock. A bumper crop harvest may reduce crop price in the absence of market

stabilization mechanisms, hence reduce people's real demand for livestock and a crop failure may also have the same effect. A fall in grain price is, however, beneficial for pastoralists because of a more favourable terms of trade. For example, bumper harvest in 2001-2002 led to a serious fall in grain prices in Nazereth market, often considered as the terminal market in central highlands, so many farmers decided to sell livestock to settle fertilizer debts and meet other urgent needs rather than selling grain at harvest time low price. But livestock prices soon fell due to over supply. Then there was a drought in the following season resulting in substantial crop failure, a major rise in crop price but a fall in livestock price as most people had to sell livestock to generate cash but buyers did not have the cash to buy animals.

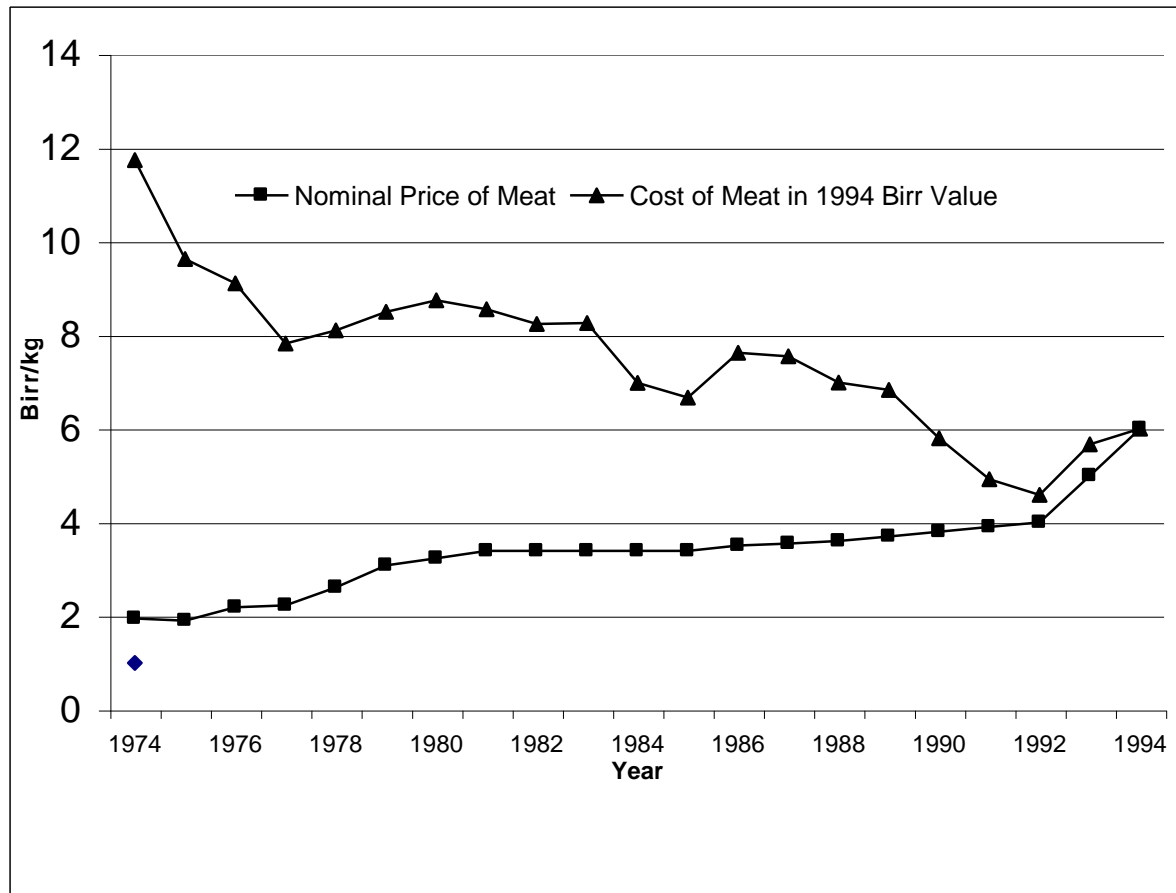
The CSA has been collecting livestock related price information over a long period from a large number of rural and urban markets through a number of channels but the CSA reports only raw or semi-processed data and does not conduct any detailed analysis of price data from these various surveys to discern regional and other sources of price differences and their causes. Such information could benefit producers, traders and consumers to optimise their utility from livestock sales and purchases because livestock price affects producers' income and livelihoods, consumers' expenditure and utility, and traders' margins. Price is also a measure of market performance and efficiency, an indicator of producer incentives and a basis of government revenues from market related services. Therefore, analysis of the large volume of CSA price data could shed light on the current market structure and performance and provide the basis for increasing efficiency in the marketing system at the aggregate level. For example, Figure 3 below shows that the real producer price of meat has fallen drastically in recent years¹. The figure also shows the closing of the gap between nominal and real prices, which may indicate that current prices are reflecting the true price of the commodity. What could have triggered this seeming convergence? One possible explanation may be that there was macro and sectoral economic policies change (after 1992) in relation to price: devaluation of Birr against Dollar, the lifting of price control etc. However, CSA data being both spatial and temporal could provide a good basis for analyzing the reasons for these price trends and their implications for consumers, producers and traders (Ayele et al., 2003).

The analysis of CSA price data could also shed light on the degree of spatial integration of livestock markets in the country, especially among lowland and highland markets. It is generally believed that pastoralists move animals across space in response to pasture and water availability in order to optimise use of scarce pasture resources, and buying and selling of animals is also a part of the spatial movement strategy (Fafchams and Gavian, 1996). Therefore, such movements may have implications for supply, sale and prices in various markets, which may or may not be linked or integrated. If the markets are not integrated, spatial arbitrage may adversely affect the welfare of the pastoralists as in some markets they may be compelled to sell animals at very low prices. When pastoralists start rebuilding stock after a drought, they normally look for young stock but such stock may not be available in the pastoral areas or the limited numbers available may be very expensive. Normally they then look for such stocks from the highlands. Information on supply sources and price at these times may help them decide where to go for new stocks. Combining spatial

¹ Real producer price was calculated by using CPI for Addis Ababa provided by the Central Bank and FAO producer price for 'indigenous cattle meat'.

and temporal price analysis therefore can contribute to flow of information that may help improve the food security and welfare of livestock keepers.

Figure 3: Real and nominal producer price of beef



Source: FAO Statistical Database (producer price data) and Ethiopian Central Bank (consumer price index for Addis Ababa) (quoted in Ayele et al., 2003)

A major problem in livestock marketing is the long distances that need to be trekked from production points to the terminal markets, whether domestic or export point, and associated weight loss of the animals, especially during dry season or when trekking routes do not match with optimal grazing resources. Such trekking also has implications for transactions costs, which may influence in which market an animal will be sold (Davies, 2003). For example, a survey in 1983-84 showed that weight loss of cattle due to trekking from Guder to Addis Ababa was higher by as much as 69% during the dry season compared to the rainy season. Health and weight of the sold animals varied significantly, consequently price varied from Birr 1 to 2.82 per kg (Kebede and Lambourne, 1985). A survey in 2003 in three Rift Valley markets and Nazereth and Addis Ababa terminal markets also revealed cattle price variation from Birr 2.50 to 3.61 due to variation in health and weight. In Nazereth market, meat exporting firms are a major buyer of small ruminants but they usually buy high quality animals and the ones rejected by the exporters then enter the local market and sold at very low price (EARO, 2003). Establishment of slaughterhouses and processing facilities

near major supply areas may reduce these losses as transporting processed meat to export markets may be cheaper than trekking live animals to centralized slaughterhouses.

Andergachew and Brokken (1993) found that sheep price differences between primary, secondary and terminal markets in the highlands could be largely explained by marketing costs indicating that most of the market links operated efficiently. However, even within the efficient marketing chains, weight losses due to trekking long distances may create inter-market and spatial price differences not adequately covered by transportation costs and traders usually factor-in this potential loss in their price offers so producers in rural areas may end up getting a small share of the final price.

3.2 Export market structure and prices

International trade involve transactions between countries irrespective of whether the transactions are effected by the governments, government supported parastatals or private sector actors. Consequently, such transactions need to be directly or indirectly supported, enforced and regulated by the state in order to accurately account for flows of good, services and payments and also to discourage trading parties from following practices that may hamper national interest and reputation. Yet transactions may occur between countries without the knowledge and sanction of their governments. It is generally recognized that livestock exports from Ethiopia take place both officially and unofficially.

3.2.1 Official exports

Livestock and livestock products are the major foreign exchange earners after coffee with hides and skins contributing the most. The share of live animal exports in total livestock and livestock products export earnings is generally small and have declined in recent years due to decreased live animal exports, and an overall increase in the value of all exports (Table 3). Skins and hides exports increased during this period while meat exports remained relatively constant. The share of live animals in actual export earnings is underestimated as a large number of the country's ruminants have been traditionally smuggled to neighboring countries, the earnings from which are not included in official statistics.

Table 3. Composition of Ethiopian exports, 1990-2001

Period	Percentage by source per year						Total
	Coffee	Hides & skins	Chat	Meat	Live animals	Others	
1990	44.7	20.8	3.0	0.1	1.6	30.2	100
1991-1995	62.9	15.3	6.2	0.1	0.3	15.2	100
1996-2000	61.6	9.1	10.1	0.7	0.2	18.3	100
2001	31.7	16.8	12.5	0.3	0.1	31.2	100

Source: National Bank of Ethiopia (the NBE obtained the data from the Ethiopian Customs Authority) Quoted in (ILRI, 2003)

It was hypothesized in the early 1990s that increased domestic demand due to population growth , urbanization and income growth and a stagnant or declining production

might lead to major decrease in official exports (FAO,1993). However, the main reason for recent decline in export was not increased domestic demand but import ban by some importing countries.

The Middle Eastern countries have been a traditional export market for countries in the Horn of Africa including Ethiopia. In 1985, potential and problems of export of livestock from Ethiopia and the other Horn of Africa countries to the Middle East was discussed at an international workshop and the following recommendations were made to increase export (FAO, 1985):

- take actions for achieving improvements in livestock and meat trading systems as well as marketing, market knowledge and commercial infrastructures,
- take actions for achieving improvements in animal health and sanitary regulations,
- take actions for achieving improvements in transportation of livestock and meat.

Although little has been done in respect of these recommendations, the Horn of Africa countries used to export up to 3 million sheep and goats, 100,000 cattle and 50,000 camels per year to the Arabian Peninsula (Stockton, 2001). This export has played a major role in the livelihood and food security and trading behaviour of the people in pastoral regions as they depend on livestock exports for importing food, clothing and other necessities from the Middle Eastern countries. Economic exchanges between the pastoral and highland areas of the country have been traditionally very minimal. Therefore, pastoral livestock development or pastoral economic development is not just a problem of livestock marketing but a problem of social, political and economic integration with the highland communities.

But increasingly stringent health and quality control regulations in the livestock importing countries restricted exports to these countries in recent years. In 1998, imports of live animals by the Middle East from six countries in the Horn of Africa and Nigeria have been banned due to an outbreak of Rift Valley Fever (RVF) transmitted from imported animals. The ban was temporarily lifted but was re-imposed in September 2000 due to a new outbreak of RVF. Although the outbreak of RVF triggered the ban on imports of animals from Ethiopia (and other Horn countries), most likely the ban has been also prompted by a number of other factors. First, the rapid economic growth in the Middle Eastern countries have enabled their consumers to look for high quality products with adequate guarantees of food safety and most likely the governments have responded by formulating and implementing necessary regulations in line with global SPS requirements in food trade. Apart from diseases, the apparent poor state of health of the animals when they arrive after long rough journeys may also reduce their marketability. On the other hand, supply conditions in Ethiopia remained virtually unchanged to meet the rapidly changing market conditions in the importing countries. Second, alternative suppliers who were better prepared and able to meet the market demand and conditions entered the market gradually replacing Ethiopia as a supplier. However, adequate understanding of these changing market conditions are not available among the export market stakeholders in Ethiopia who have little knowledge about the market structure, rules and regulations, consumer tastes and preferences in importing countries. Without such an understanding and appropriate response in terms of new rules and regulations and investments to ensure supply of high quality animals or animal products, it may be difficult to develop proper strategies to reenter the lost market (Ayele et al., 2003). Recently some private meat processors have started exporting high quality goat meat and

tapeworm free Boran veal based on demand from Saudi Arabia but special efforts are needed to procure such animals from the pastoral areas as the existing market and information flow structure is inadequate to transmit the required information to the producers in the distant areas (Getachew Gebru, personal communication). Also these are small initiatives in a sea of multitude of problems facing the export market sector, hence huge efforts will be required to multiply such efforts and prepare the sector to compete in the international market.

3.2.2 Unofficial exports

Traditionally a large number of animals used to be exported illegally to the Middle East and to Kenya. A number of studies have tried to estimate losses from illegal export and generated widely variable estimates. Table 4 shows some of the more recent estimates of the extent of unofficial exports. The bases of these estimates are not very clear.

Table 4: Estimates of number of unofficial livestock exports

Source of data	Reference Period	Cattle (Head)	Sheep/Goat (Head)	Camel (Head)
Concerned Ministries, 1983 ^a	1981/82	225,450	758,200	na
AACMC, 1984	1983/84	55,000	330,000	na
Ministry of Foreign Trade 1987 ^b	1985/86	260,000	1,200,000	na
FAO, 1993	1987/88	150,000	300,000	na
World Bank 1987	C1987	225,000	750,000	100,000
MEDAC, 1998	1998	260,000	1,200,000	Na
Hurissa and Eshetu, 2002	C 2001	325,000	1,150,000	16,000

a. Ethiopian Government Committee of Concerned Ministries, unpublished data, 1983

b. Ministry of Foreign Trade, Unpublished data

Source: Ayele et al., 2003

Illegal sales of livestock take place through Somaliland, Somalia and Kenya, and to a lesser extent, through Sudan and Djibouti. For example, it is estimated that 60-80% of animals exported illegally through the Somaliland originate in the Ethiopian Somali region and the rest from other adjoining pastoral areas and from the highlands (ILRI, 2003). Somali livestock exports through Somaliland are illegal because legal exports are impossible.

Somaliland and its currency are not internationally recognized, so legal international transactions can't be effected for opening Letters of Credit or for getting Certificates of Insurance. Moreover, there are no certifying veterinarians or holding facilities along most existing roads where animals can be examined, vaccinated and certified and most veterinarians do not have proper forms or lab facilities to certify. On the other hand, livestock exporters exporting through Berbera are traditionally paid in a mixture of cash and kind. In 1997, the principal imports at Berbera port were: sugar (39 % of total import volume), rice (27 %) and wheat flour (11%) and others (23%) including building materials, oil, car spare parts, cigarettes, soap, clothes, pasta and dates. This system makes pastoralists willing dealers with illegal traders because they get cash and consumable goods in return (Shank, 1997).

Little (2001) suggested that 50-60% of the 1.4 million small-stock exported out of Berbera port in Somalia originate from eastern Ethiopia. Maize, sorghum, cattle, camels, charcoal and kerosene cross into Somalia. In return, kerosene, pasta, wheat flour, and sugar are imported to Ethiopia. The benefits to eastern Ethiopia is US\$12.6 to US\$15 million as a result of this trade (*ibid*), while Teka et al. (1999) put the average benefit for eastern Ethiopia at US\$ 25 million. In another report, Teka and Azez (2001) documented the illegal livestock trade (through the eastern border to Djibouti) along with coffee, perishables and Ethiopia's second largest export, chat. The other border areas where illegal trade is occurring are the Southwestern Somalia/Northeastern Kenya/Southeastern Ethiopia triangle, and the Central Somalia/ Ethiopia border. For example, out of the total meat production in Kenya in 1997, an estimated 22% came from animals entering the country through cross-border import (unofficial import); this share increased to 26% in 2000. A large share of these unofficial imports come from Ethiopia (Unpublished data, Ministry of Agriculture and Rural Development, Government of Kenya, quoted in Jabbar, 2002). Although these unofficial exports to Kenya give southern Ethiopian pastoralists a market outlet for their animals, they depress the demand and price of the Kenyan animals – both from northern Kenyan pastoral areas and also from the commercial ranches as currently export from ranches is limited due to ban by the European Union.

In general, in different cross-border trade outlets, prices do not move in the same direction, indicating some sort of market failure. Thus, there are no predictable spatial price differences (price ratios) that can be linked to this trade pattern. And there is no market integration, making it difficult to prescribe policy interventions to combat this trade (Teka et al., 1999)

Some of the reasons identified as contributing to illegal exports are excessive regulations involving several ministries and agencies and related fees. Overall transactions costs in dealing with these agencies for export clearance are also apparently high both in terms of time and money. The only government measure to mitigate livestock export losses has been temporary increases in inspections by 'finance police'. According to the LMA, the following charges apply to livestock or meat exports: a meat inspection fee of Birr 10 per certificate payable to the MOA veterinary service; foreign embassies charge Birr 90 for each of three certificates for importing to their respective country; the chamber of commerce charges Birr 40 for a 'certificate of origination'; Birr 162 for each of three certificates goes to the Ministry of Foreign Affairs, birr 35 to the Maritime and Transit services for declaration, and if meat is exported by plane, birr 20 per ton is due to the Ministry of Health (LMA, unpublished data). Teka and Azez (2001) found that illegal coffee exports dropped

dramatically when the government reduced or eliminated exporting costs including export taxes. Therefore, opportunities exist to reduce the number of tax points and the amount of tax in order to potentially encourage more official exports of livestock.

Expectedly, all illegal and legal livestock exports have fallen sharply as a result of the import ban in the secondary Middle Eastern markets. The overall impact of the import ban on the local economy, especially in the pastoral areas, which supply most of the export animals, has been severe adversely affecting producers, traders, consumers and the government. The ban benefits the local food sector due to decreased import and increased market for locally produced food but negatively affects income and livelihood of livestock producers and traders, and may also have negative impact on consumers through increasing prices of non-livestock consumption goods, especially imported ones. The ban has also led to deteriorating terms of trade with animal prices going down and grain prices increasing by up to 60%. Due to reduced cash income and significantly reduced purchasing power, local trade and businesses have been suffering, some closing business altogether. For example, a partial equilibrium analysis of the Somali region using a stylized Social Accounting Matrix and the pre-ban situation as the base, shows that due to the import ban producers in the region lose on a year basis approximately \$92 million while traders/exporters lose \$16 million. Losses in consumer's surplus are estimated as -\$266 million and gains for producers as \$246 million. Producers gaining from the ban are partly from the Somali region and partly from the nearby highland areas who are taking advantage of the vacuum created by the reduced import of cereals and other consumer goods (ILRI, 2003). The ban also led to loss of government revenue as revenues are collected only by "Somaliland" for animals passing through that territory. The losses of producers and traders/exporters have been compensated partially through extensive emergency food and other relief programmes over the years in the pastoral areas.

4. Summary and conclusion

Production and marketing objectives of mixed crop-livestock farmers in the highlands and pastoralists in the lowlands vary widely, though these regions are also inter-connected and dependent on each other. These differences have implications for the role of livestock in livelihood and food security. These differences also need to be recognized in the development of marketing infrastructure and services to improve food security and livelihood of livestock keepers in the two regions. In general existing market structure and performance are perceived to be poor though the available research results for livestock marketing in Ethiopia are outdated and inadequate for designing policies and institutions to overcome perceived problems in the domestic and export marketing systems.

Recent loss of the export market was triggered by import ban by importing countries due to the incidence of Rift Valley Fever. However, regaining the export market may require fulfilling a much wider range of sanitary and phytosanitary conditions and quality requirements, and corresponding investment in infrastructure and services. Understanding importers' perspectives and requirements, competitiveness of Ethiopia in relation to alternative suppliers to the same market and the benefits of required investment to re-enter market need to be assessed. In the domestic market, knowledge on how marketing routes and

systems contribute to spread of diseases and the implications of these for national and international trade in livestock is also highly insufficient to design any policy or institutional innovation to improve domestic and export marketing for the benefit of the poor. In particular, information is required on the incentive structure, spatial and temporal bottlenecks, and price and information structure throughout the marketing chain including the export market. Similarly, livestock price that is spatially conditional could be analysed to relate market characteristics with geographically varying physical and information infrastructure for all levels of the marketing chain including the export market.

The livelihood of smallholders is highly dependent on the cash income derived from livestock and livestock products, so alleviating constraints to marketing, improving market information, and upgrading marketing infrastructures will potentially increase the welfare of smallholder producers and urban consumers and improve the national balance of payments. The more farmers are aware of market demand and price, the higher will be their bargaining power that could improve their income through getting a larger share of the consumer spending. On the other hands, when income of the producers increases through better access to information, market and infrastructure, they could improve production, both in terms of quantity and quality, thereby benefiting consumers.

Acknowledgements: Comments on an earlier draft by Getachew Gebru, Abdulkarim Ahmed Guleid and Yohannes Mekonnen are gratefully acknowledged.

References

- AACMC.1984. Livestock marketing project, Main Report. Prepared by the Australian Agricultural Consulting and Management Company, Adelaide for the Ministry of Agriculture, Government of Ethiopia, Addis Ababa. 11pp.
- AACMC. 1984b. Livestock marketing project, Annexes vol. 1. Prepared by the Australian Agricultural Consulting and Management Company, Adelaide, for the Ministry of Agriculture, Government of Ethiopia. 62pp.
- AACMC.1984c. Livestock marketing project, Annexes vol. 2. Prepared by the Australian Agricultural Consulting and Management Company, Adelaide, for the Ministry of Agriculture, Government of Ethiopia. 36pp.
- Aklilu, Yacob. 2002. Critical issues impacting livestock trade in Kenya, Ethiopia and Sudan. Paper presented at the 10th Annual Conference of Ethiopian Society of Animal Production, 22-24 August, 2002, Addis Ababa, Ethiopia. 18pp.
- Andargachew, K and Brokken R.F. 1993. Intra-annual sheep price patterns and factors underlying price variations in the central highlands of Ethiopia. *Agricultural Economics*. 8 :125-138.
- Asamenew G., 1977. The organization of meat markets in Addis Ababa. ILCA/CIPEA, Addis Ababa, Ethiopia. 59pp.
- Ayele Solomon, Assegid Workalemahu, Jabbar, M A, Ahmed, M M and Belachew Hurissa. 2003. Livestock marketing in Ethiopia: a review of structure, performance and development initiatives. Socio-economics and Policy Research Working paper no 52. ILRI, Nairobi, Kenya. 35pp.
- CSA (Central Statistical Authority). 1999. Agricultural sample survey report on livestock,

- poultry, and beehive populations. Statistical Bulletin No 206. Volume II. CSA, Addis Ababa, Ethiopia. 280pp.
- Davies, J M. 2003. Capitalisation on livestock in pastoral Afar. Unpublished draft. 26pp.
- EARO. 2003. Livestock market survey. Unpublished data.
- Fafchamps, M and Gavian, S. 1996. The spatial integration of livestock markets in Niger. *Journal of African Economies*, 5(3):366-405.
- FAO. 1985. Report of the workshop on Commodity Trade Including Livestock and Meat Between Africa and the Near East, held in Mombasa, Kenya, 28 October-2 November 1985. 32pp.
- FAO. 1993. Ethiopia livestock sector development project. Preparation Report Vol.1. FAO, Rome, Italy. 51pp+ annexes.
- FAO. 1999. FAOSTAT 1999-<http://apps.fao.org/cgi-bin/nph.db.pl>.
- Gryseels G. 1988. The role of livestock in the generation of smallholder farm income in two vertisol areas of the central Ethiopian Highlands. In: Jutji S.C., Haque I., McIntire J., and Stares J.E.S. (eds.). *Management of vertisols in Sub-saharan Africa. Proc. of a conference held at ILCA, Addis Ababa, 31 August-4 September, 1987, Ethiopia*. Pp 345-378
- Hurissa, Belachew and Eshetu, Gemberu 2002. Challenges and opportunities of livestock trade in Ethiopia. Paper presented at the 10th Annual Conference of Ethiopian Society of Animal Production (ESAP), August 22 – 24, 2002, Addis Ababa, Ethiopia. 33pp.
- ILRI (International Livestock Research Institute). 2003. Benefits and Costs of compliance of SPS rules: the Case of Rift Valley Fever in Ethiopia. A draft report submitted to the World Bank. 23pp.
- Jabbar, M A. 2002. Livestock and hides and skins marketing in Kenya: Problems and investment Needs. Working paper submitted to the African Development Bank, Abidjan, Cote d'Ivoire. 9pp.
- Jabbar, M A, Ahmed, M M, Benin, S, Berhanu Gebremedhin and Ehui, S. 2002. Livestock, livelihood and land management in the highlands of Ethiopia. Paper presented at the conference on 'Sustainable land management policies in the East African highlands', United Nations Economic Commission for Africa, Addis Ababa, Ethiopia, 24-26 April. 30pp.
- Kebede, Bayene and Lambourne, L. J. (eds.). 1985. The status of livestock, pasture and forage research and development in Ethiopia. Proceedings of a workshop held in IAR, Addis Ababa, Ethiopia, 8-10 January 1985. Institute of Agricultural Research, Addis Ababa, Ethiopia. 138pp.
- Kebede , Zewdu, Sintayehu, Gebre Mariam, Airey, J.L., Paul, I., and Schildkamp, M.A. 1988. The livestock marketing information service: Its structure, method, goals, and the possibilities it offers the end users. Proceedings of the Second National Livestock Improvement Conference, IAR, Addis Ababa, 24-26 February 1988. pp. 111-114
- Little, P. 2001. Cross-border livestock trade and food security in the Somalia and Northeastern Kenya borderlands. A summary prepared for the OSSREA/BASIS seminar on cross-border trade, Addis Ababa, Ethiopia, 2-3 April, 2001.
- MEDaC (Ministry of Economic Development and Cooperation). 1998. Survey of livestock and fisheries development. MEDaC Agricultural Development Department, Livestock Team, Addis Ababa, Ethiopia. 65pp.
- MOA (Ministry of Agriculture). 1976. Livestock services project. Vol.1 (Credit Application to the IDA). Livestock and Meat Board, Addis Ababa. 31pp.

- MOA. 1981. Livestock marketing information service report (Ethiopia), No. 1. Ministry of Agriculture, Animal Resources Marketing Department, Addis Ababa. 41pp.
- North, D C. 1990. Institutions, institutional change and economic performance. Cambridge University Press, Cambridge, UK.
- Shank, R.1997. Livestock marketing and cross border trade in the Southeast of Ethiopia. UNDP-Emergencies Unit for Ethiopia. Internal Report.
- Stockton, G. 2001. Support to livestock exports – Northern Somali and the sub-region (EXCELEX). Joint Government of Italy-FAO Project Formulation Mission Report, FAO, Rome, Italy. 46pp.
- Teka, Tegegne and Azez, Alemayehu. 2001. Cross-border trade and food security in the Ethiopia-Djibouti and Ethiopia-Somalia borderlands. Paper presented at the OSSREA/BASIS seminar on cross-border trade, Addis Ababa, Ethiopia, 2-3 April, 2001.
- Teka, Tegegne , Azeze, Alemayehu , and Gebremariam., Ayele. 1999. Cross-border livestock trade and food security in the Southern and Southeastern Ethiopia borderlands. Organization for Social Science Research in Eastern and Southern Africa (OSSREA) Development Research Report Series no. 1, Addis Ababa. 74pp.
- Tilahun, Negussie. 1983. Livestock marketing in North-Eastern Ethiopia. Research Report no. 8, Joint ILCA/RDP Ethiopian Pastoral Systems Study Programme, Addis Ababa. 5pp.
- World Bank. 1987. Ethiopian agriculture-A strategy for growth. A Sector Review Vol. 1. The World Bank, Washington DC, USA.
- World Bank. 2001. Pastoral area development in Ethiopia – issues paper and project proposal. Washington, D.C. USA.