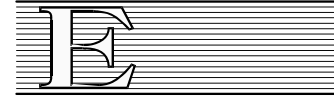




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**REPORT ON LIVESTOCK VALUE CHAINS IN EASTERN AND
SOUTHERN AFRICA: A REGIONAL PERSPECTIVE**

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ACRONYMS

ACTESA	Alliance for Commodity Trade in Eastern and Southern Africa
ADP	Animal Draught Power
BMC	Botswana Meat Commission
CAADP	Comprehensive African Agricultural Development Programme
CBPP	Contagious Bovine Pleuro pneumonia
CDW	Cold Dressed Weight
COMESA	Common Market for Eastern and Southern Africa
DM	Dry Matter
DRC	Democratic Republic of the Congo
ECF	East Coast Fever
ECOWAS	Economic Community of West African States
EU	European Union
FAO	Food and Agriculture Organization
FMD	Foot and Mouth Disease
GDP	Gross Domestic Product
HAACP	Hazard Analysis and Critical Control Points
IGAD	Intergovernmental Authority for Development
ILRI	International Livestock Research Institute
LSD	Lumpy Skin Disease
RVF	Rift Valley Fever
SADC	Southern African Development Community
SPS	Sanitary and Phytosanitary
TBD	Tick Borne Disease
TTBD	Ticks and Tick Borne Disease
UNECA	United Nations Economic Commission for Africa
USD	United States Dollar

I. INTRODUCTION

1. The livestock value chain in the Economic Community of Eastern and Southern Africa/Southern African Development Community (COMESA/SADC) is a multi-billion dollar business, which is yet to benefit the 70-80 per cent of the people living in rural areas. The livestock value chain is grossly underdeveloped in most countries and its contribution on the world market is largely insignificant.

2. Despite the huge livestock resource base, the COMESA and SADC subregions exhibit high poverty levels. Yet, this resource base has incredible potential to contribute to income generation, employment creation, food security and nutrition, social security and poverty reduction. Currently, more than 70 per cent of the people, including the livestock keepers, are poor and survive on \$1.00 per day (Thornton, and others, 2002).

3. This report presents the results of a stocktaking exercise carried out with a regional perspective of the livestock value chains in Botswana and Ethiopia and the linkages in the agricultural and agro-based sector in the COMESA and SADC subregions. The report is a synthesis of two country reports on livestock value chains undertaken in order to: (a) determine and establish the current livestock production potential, the demand for livestock products/by-products and market access to both regional and international markets; (b) identify commodity flows and stakeholders, including their interaction across the value chain; (c) identify major challenges and opportunities across the value chain; and (d) indicate the relevance and significance of livestock in the livelihoods of smallholder farmers and agro-pastoralists/pastoralists, including those across the COMESA/SADC subregions.

II. SOCIO-ECONOMIC IMPORTANCE OF LIVESTOCK IN BOTSWANA, ETHIOPIA AND COMESA

A. An overview

4. COMESA has a total of 135,198,782 cattle, 201,570,703 sheep/goats and 7,600,900 camels, representing 39 per cent, 59 per cent and 2 per cent of the total livestock population, respectively, and this illustrates the significance of sheep and goats in the subregion. Although COMESA/SADC member States have a large livestock pool, the livestock sectors in most of the member States have stagnated for a long time, with national herds not growing and not benefitting from the economies of scale. The livestock sectors in most countries in the subregion have attracted little investment, with regard to cattle and small ruminant production, including value added. Unlike the Horn of Africa and East Africa where livestock/agriculture provides a strong base for diversification and major source of livelihoods for most people, the Central and Southern African peoples have their economies dependent on non-renewable resources, especially minerals, but are struggling to diversify their economies into agriculture/livestock with minimum resource allocation to the sector.

5. About 76 million poor livestock producers are in COMESA (Dawit Abebe, 2009), suggesting that its livestock sector is still subsistence oriented. In order to tap into the emerging opportunities in the Far East and Europe, there is a need to upgrade the sector to commercial

production and intensification. Commercially oriented animal production systems are more likely to respond to demand and price signals, thus allocating scarce resources more efficiently. Commercial orientation is also likely to have more sustainable and ripple effects on increasing incomes and employment opportunities; improving nutrition and food security; and overall poverty reduction in the subregion.

6. Botswana and Ethiopia together have a huge livestock genetic resource base, comprising cattle, sheep, goats and camels. However, Ethiopia is superior in terms of livestock numbers by species and exhibits more diversification and resilience than Botswana. Furthermore, Ethiopia is currently considered the tenth largest livestock producer and biggest exporter of livestock in Africa. At the regional level, Ethiopia is the largest livestock producer in COMESA and SADC with cattle accounting for 32 per cent of the total cattle in the subregions, seconded by the Sudan with cattle accounting for 30 per cent.

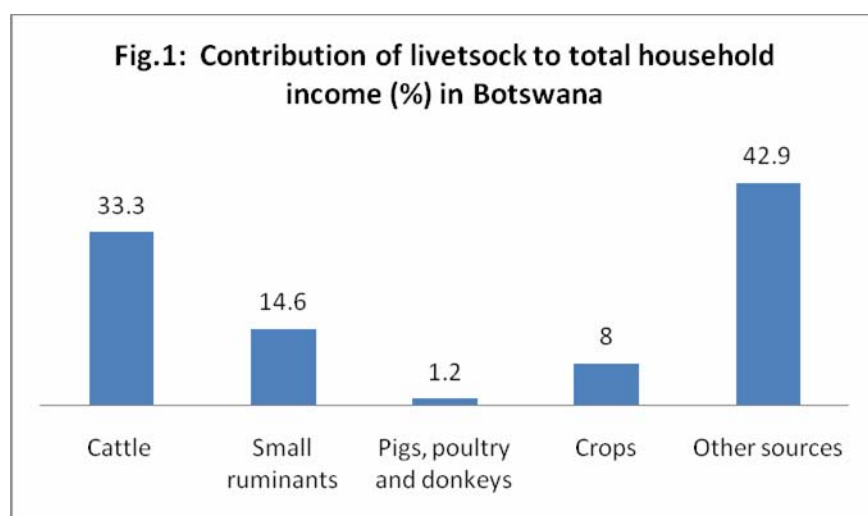
7. Botswana is more biased towards cattle production than Ethiopia, with cattle accounting for 73 per cent, seconded by goats with 22 per cent and sheep with 5 per cent of the total livestock population. This trend is common in Central and Southern Africa where cattle is a dominant species. On the other hand, Ethiopia's sheep and goats together account for 58 per cent and cattle for 42 per cent of the total livestock numbers, giving a strong impression that small ruminants play a special role in supporting the livelihoods of pastoral communities. This trend is also common in the Horn of Africa and East Africa where small ruminants occupy a special role in the livelihoods of communities. Overall, Ethiopia's livestock production is more diversified and resilient than that of Botswana and Central/Southern Africa.

B. Contribution of livestock to household income, food and social security

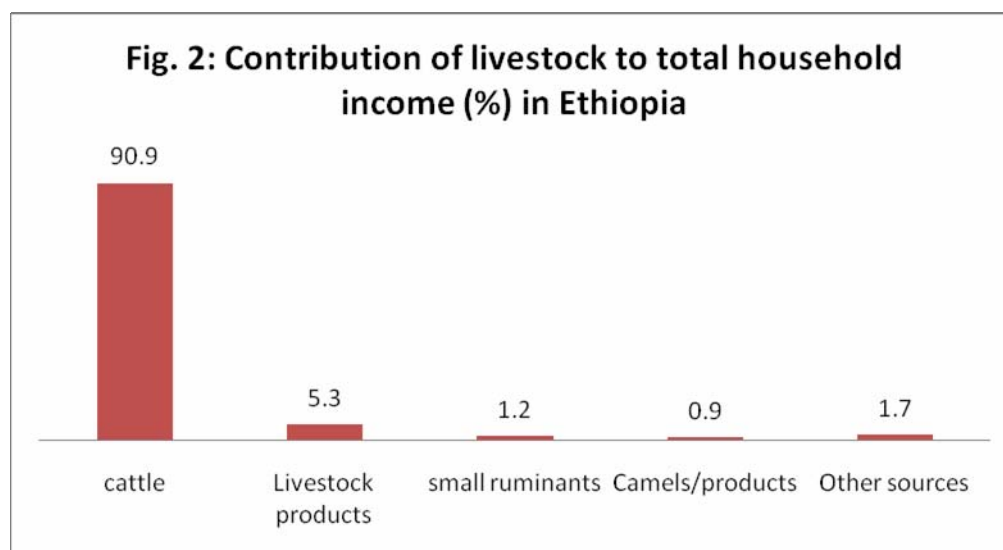
8. Livestock production performs several functions primarily as source of household incomes, food and animal drought power for livestock producers in Botswana, Ethiopia and the entire COMESA/SADC subregions. Livestock is also an anchor for economic diversification and sustainable rural development, although most of the agricultural policies are biased towards crops for food-security purposes.

9. Because of the low potential for crop production, including absence of/or limited irrigation technologies in Botswana, Ethiopia and most countries in COMESA, livestock remains a major source of income and food for the majority of rural people in the traditional and agro-pastoral/pastoral farming systems. In this respect, livestock ownership, in terms of both quantity and quality, is an important asset because of its multiple social, economic and cultural uses. Some studies by Gryseels (1988) and the International Livestock Research Institute (ILRI, 1995) show that livestock alone accounts for 37-87 per cent of the total cash income of agro-pastoralists/pastoralists in Ethiopia. Studies in Botswana (Keith Jefferis, 2007; Davis Marumo and Milly Monkhel, 2011) indicate that income from cattle provides a greater proportion (62 per cent) of total income for poorer households. Other studies (FAO, Corporate report, 2006) indicate that livestock in Botswana provides 49 per cent (33.3 per cent from cattle, 14.6 per cent small ruminants, 1.2 per cent from pigs, poultry and donkeys) of total household income and 51 per cent comes from other sources other than livestock, while in Ethiopia, especially in arid/semi-arid areas, livestock provides almost 100 per cent of household income (90.0 per cent from cattle; 5.3

per cent from milk, butter and hides/skins; 1.2 per cent from small ruminants, 0.9 per cent from camels and their products and 1.7 per cent from other sources (figures 1 and 2), whereas income from crops is practically zero. According to Adugna Eneyew (2012), Ethiopia's share of livestock income at community level falls into three brackets, namely less than 25 per cent, between 26-75 per cent, and more than 76 per cent, considered as highly, moderately and less diversified households in terms of income source. This suggests that livestock remains the single most important source of livelihoods in Ethiopia and other countries in the Horn of Africa/East Africa.



Source: ECA's calculations based on data from ACTESA (2011).



Source: ECA's calculations based on data from ACTESA (2011).

10. The sizeable contribution of livestock to household income in Ethiopia has important implications. For instance, high mortality rates as a result of livestock disease outbreaks and starvation as consequence of droughts. These result in scarce grazing and water for livestock,

threatening the livelihoods of agro-pastoralists/pastoralists and smallholder farmers who depend on livestock as source of income. However, Botswana is moderately diversified but the livelihoods of smallholder farmers are still threatened in case of market failures, disease outbreaks and droughts which are likely to reduce incomes from livestock.

11. Studies by ILRI (2008) showed that food-secure households were associated with high livestock asset ownership, indicating that increased cash incomes primarily came from livestock, through the sale of live animals, milk, meat, hides and skins. For example, milk constituted 80 per cent of the diet in the rainy season among the pastoralists, whereas sheep and goats were a major source of meat (FAO, 3 Traditional Ruminant Production Systems). The income accrued from sale of livestock and livestock products/by-products (hides and skins) was judiciously used to finance the purchase of household commodities such as grains, salt, coffee, tea, salt, cooking oil, sugar, etc. (Guido Gryseels and Frank M. Anderson, 1983) as well as meeting health expenses (ILRI, 2008). This demonstrated the importance of livestock production as a crucial livelihood strategy and as an important component of household income in COMESA/SADC.

12. It was shown how livestock in the Horn of Africa/East Africa and Central/Southern Africa and cutting across COMESA/SADC are integrated into the social, cultural and spiritual values of agro-pastoralists/pastoralists and smallholder farmers. Livestock, especially cattle, is a legal tender among livestock keepers and therefore, are used as payment for dowry, to settle disputes and as gifts to relatives. Livestock are also used and slaughtered during cultural and spiritual/religious ceremonies. For lack of investment opportunities and banking facilities in the remote parts of most countries in COMESA/SADC, livestock remains the only investment and "bank on the hoof" and source of wealth, prestige and social security among the smallholder farmers and agro-pastoralists/pastoralists. Prosperity is measured according to the number of livestock, especially cattle, that one has. The more animals one has the more prosperous one becomes and the more respect and recognition one commands in the society.

C. Livestock for sustainable employment

13. About 1.6 million traditional farmers in Botswana and 21.6 million agro-pastoralists/pastoralists in Ethiopia, and many more in the Horn of Africa, East Africa, central and Southern Africa depend on livestock as a major economic activity and for their livelihoods. The livestock sectors in these countries also support and sustain enterprises and interest groups which are linked and associated with the livestock value chains such as the livestock traders, transporters, slaughter facilities/processors, feed manufacturers, government (veterinary/animal husbandry departments), local authorities, veterinary drug suppliers, etc. who also generate employment opportunities. Livestock, therefore, is a major source of sustainable employment for the majority of people and supports rural development initiatives along the value chain. Table 1 shows that value added, especially meat processing, has a higher employment factor. This strongly suggests that value added creates higher employment opportunities along the value chain than dealing in raw form.

Table 1: Employment multipliers for the livestock industry

Stage in the value chain	Employment multiplier
Meat products	11.7
Livestock feeds	10.0
Dairy products	8.24
Livestock (meat animals)	1.92
Milk	1.57
Poultry	1.48
Animal fibre	- 1.17

Source: Livestock Development Strategy, 2006: South Africa.

14. Meat processing has a multiplier effect of 11.7, suggesting that value added and processing of beef into assorted meat products creates more jobs, followed by livestock feeds and dairy products. Livestock farmers in the rural areas are currently operating at the bottom of the value chain where value added or processing initiatives are non-existent, as they are involved in selling raw materials. For example, in 2010, Ethiopia experienced illegal cross-border trade of more than 6.8 million live animals (24.51 per cent cattle, 31.93 per cent sheep, 35.31 per cent goats and 62.25 per cent camels), 4,925,000 raw hides and 10,870,000 raw skins to neighbouring countries (ACTESA/COMESA 2011), a trend which still continues.

15. The implications are that lack of value added actually promotes joblessness and poverty. This strongly suggests that a well-developed livestock value chain would be in a position to contribute significantly to attainment of the Millennium Development Goal (MDG) of halving extreme poverty by 2015 with job creation and income generation through improved value added. However, lack of value added weakens the contribution of livestock to economic growth, employment and income generation.

III. LIVESTOCK PRODUCTION IN BOTSWANA AND ETHIOPIA

A. Livestock production systems

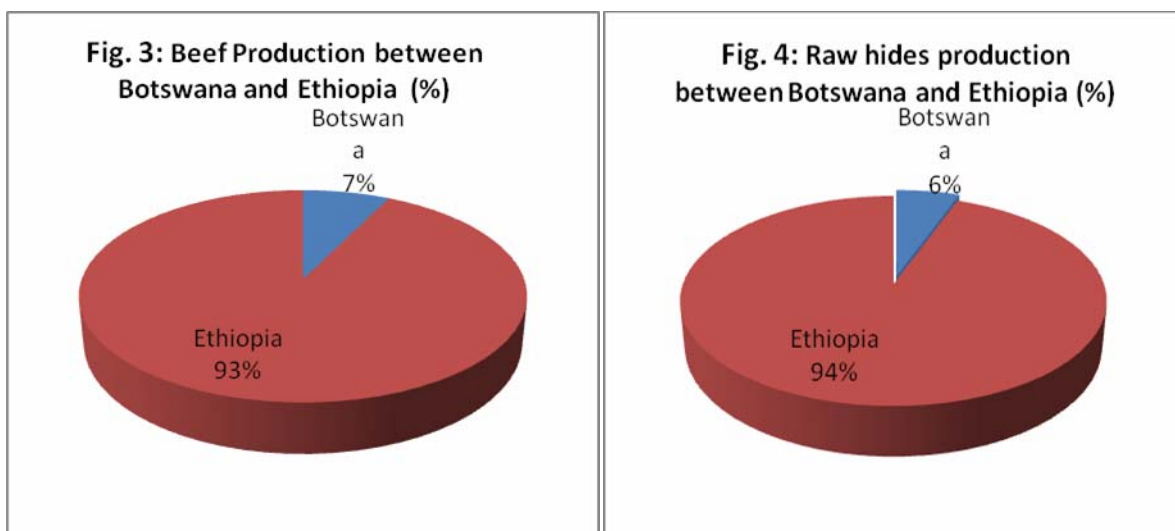
16. Botswana has a livestock population of 3.36 million ruminants (cattle, sheep and goats) out of which 15 per cent falls under a well-developed commercial farming system, comprising cattle ranching and feedlots coexists with a large number (85 per cent) of ruminants under the traditional or communal grazing system (unfenced ranges) comprising small farms. The traditional livestock farming system is subdivided into two: (a) the traditional livestock farming system based on small herds or so-called cattle posts; and (b) the traditional livestock farming system, under the Tribal Grazing Land Policy (TGLP) of 1975 based on relatively large cattle herds being managed under the communal grazing system, but operating on a commercial basis. The commercial cattle production system, comprising fenced ranches and feedlots, is highly specialized, employing modern animal husbandry practices and strategic feeding to produce high-value beef animals.

17. On the other hand, Ethiopia's livestock production system is characterized by (a) pastoralism; (b) agro-pastoralism; (c) urban and peri-urban farming; and (d) specialized intensive farming systems (Mohammed and others, 2004; Yitay, 2007). However, pastoralism and agro-pastoralism are the dominant livestock production-based, land-use systems in the arid agro-ecologies of Ethiopia and account for 50 per cent of the total 114 million livestock numbers, out of which 40 per cent are cattle, 52 per cent sheep, 56 per cent goats and 100 per cent camels (ACTESA, 2011).

18. Both the traditional and pastoralism production systems in Botswana and Ethiopia, respectively, utilize unfenced rangeland grasses as a major source of feed or grazing, with limited usage of crop residues. These two systems have common approaches to livestock production techniques by employing low management levels using zero or minimum inputs, thereby continuously subjecting animals to communal grazing and risks of drought, disease, theft and predators. The natural resources such as land, water and forage/grass are communally shared and therefore, no one claims ownership and responsibility. A group of farmers have access to common grazing land and water their cattle at a central watering point. Cattle are trekked long distances in search of good grazing and water, which are scarce most of the time, especially during the dry season.

B. Livestock productivity

19. Beef production figures suggest that Ethiopia produces almost 13 times or 93 per cent more beef than Botswana (figure 3) and 94 per cent more raw hides (figure 4). However, the increased meat production which may be observed in Ethiopia has been largely attributed to increased livestock numbers, rather than improved productivity.



Source: ECA's calculations based on data from ACTESA (2011).

20. Based on cold dressed weights (CDW) for livestock slaughtered in abattoirs, Ethiopia has been classified as one of the lowest in the world, with carcass weights averaging 108 kg/head for

cattle, 10 kg/head for sheep and 8 kg/head for goats, all of which are below the average productivity of all least developed countries (International Food Policy Research Institute and Ethiopian Development Research Institute, 2011; ESSP II, Working Paper 26). Although Botswana has fewer beef animals (2,451,365) than Ethiopia (43,124,582), it produces superior carcasses in terms of carcass weights and quality, averaging 190 kg CDW for traditional cattle and 230 kg CDW for commercial and feedlot cattle. Moreover, Botswana, Namibia and South Africa are known to produce competitive beef in COMESA/SADC and Economic Community of West African States (ECOWAS) in terms of the quality much admired in the European market.

21. Inferior carcasses from the agro-pastoral and pastoral system in Ethiopia can be attributed to many important factors, including and not limited to the following: (a) low genetic potential for indigenous cattle; (b) prolonged nutritional stress in terms of both quantity and quality of range lands pastures, as a consequence of frequent droughts, and low and erratic rainfall; (c) overstocking which results in overgrazing and overall rangeland degradation; (d) inadequate dry season supplementation when rangelands cannot provide sufficient feed; and (e) heavy parasite burdens, especially ticks, intestinal worms and liver flukes as a result of inadequate animal husbandry and veterinary practices.

22. The superiority of Botswana feedlot and ranch cattle carcasses over those from Ethiopia can be attributed to the use of cross-bred animals for meat production, as well as improved nutrition and animal husbandry practices, rather than the use of local animals/indigenous animals which depend 100 per cent on poor-quality rangeland pastures as feed. Smallholder farmers in Botswana practice minimum supplementary feeding during the dry season and this may also help to explain why the carcass weights are higher than those of Ethiopia.

C. Challenges in livestock production under smallholder and pastoral systems in Botswana and Ethiopia

23. As indicated earlier, both the traditional livestock keepers in Botswana and pastoralists in Ethiopia lack strategic approaches to produce livestock products for the market. However, livestock production still remains a survival strategy and source of livelihoods for more than 80 per cent of the people in Botswana and 26 million agro-pastoralists/pastoralists in Ethiopia. Both pastoralism in Ethiopia and the traditional livestock production system in Botswana are low input – low output systems characterized by poor animal husbandry practices, and extreme subjection to feed deficiencies (in terms of both quality and quantity), as well as drought risks and livestock diseases. Consequently, there is low livestock productivity. Low livestock productivity refers to the low ability of the animals grown to produce economic outputs such as livestock products and by-products of good quality (meat, milk, animal draft power, manure, hides, skins and wool).

24. The aftermaths of Contagious Bovine Pleuro Pneumonia (CBPP), Foot and Mouth Disease (FMD) and (Tick Borne Diseases (TBDs) outbreaks or infections are felt across the value chain, at household, national and regional levels but losses more often affect food sources and draft power, leading to significant hardships at the household level in the traditional and

pastoralist areas. Prevention of diseases and adequate feeding of animals are critical in the initial production phase of the value chain because addressing the aftermath of disease outbreaks, droughts and dry-season effects is costly. For example, restocking sheep and goats would cost 6.5 times more than supplementary feeding while it would cost 14 times more to restock cattle than supplementary feeding (Feinstein Internal Centre, 2007). It is important to recognize that diseases and nutrition are closely linked. Low levels of nutrition, as observed in Botswana and Ethiopia, may predispose animals to diseases and diseases can affect feed intake. Because of this close interaction, it is important that both nutrition and disease are treated with equal force. The challenges encountered by pastoralists and traditional cattle keepers are summarized as follows:

(a) Inadequate rangeland pastures and water for livestock (quality and quantity) as a consequence of low/erratic rainfall, frequent droughts and overgrazing, which further result in rangeland degradation and bush encroachment;

(b) Poor animal husbandry practices as manifested by failure to control/prevent intestinal worms/liver flukes infestation and ticks and tick borne diseases (TTBDs); lack of supplementation with protein sources during the long dry season; and indiscriminate inbreeding. Frequent livestock disease outbreaks especially TADs which are associated with illegal livestock movements, poor campaign programmes and vaccination coverage; failure to develop and maintain cold chains for FMD and CBPP vaccines and other important animal vaccines;

(c) Inadequate veterinary and livestock extension support services.

IV. LIVESTOCK MARKETING AND TRADING IN BOTSWANA AND ETHIOPIA

A. The Botswana and Ethiopia livestock supply chains

25. There is a huge difference between Botswana and Ethiopia in the manner in which livestock are marketed and traded. Ethiopia's livestock supply chain portrays a three-tier system whereby animals are bought by traders/agents from agro-pastoralists/pastoralists and are trekked to primary and secondary market centres at district and regional level, respectively. This means animals are trekked for long distances, (for a period of 1-3 days) without adequate resting/shading, watering and feeding facilities along the supply chain. The trekked animals, therefore, are prone to predators; deaths of up to 5-10 per cent and 10-15 per cent sickness from stress; and 8-13 per cent body weight losses. These animals more often are sick, dehydrated and emaciated resulting in some being condemned at ante-mortem/post-mortem inspection and generally poor carcass quality.

26. Most of the markets are open air, without fences and watering/feeding facilities. Most were constructed on unsuitable sites and have remained difficult to use, dilapidated and linked by poor road infrastructure. This has promoted increased informal/illegal live animal cross-border trade from Ethiopia to neighbouring countries.

27. The entire supply chain in Ethiopia is further characterized by numerous intermediaries /actors namely: brokers, collectors; agents; animal trekkers, small, medium and big traders; wholesalers; abattoirs; butcheries; exporters; local authority and Department of Veterinary

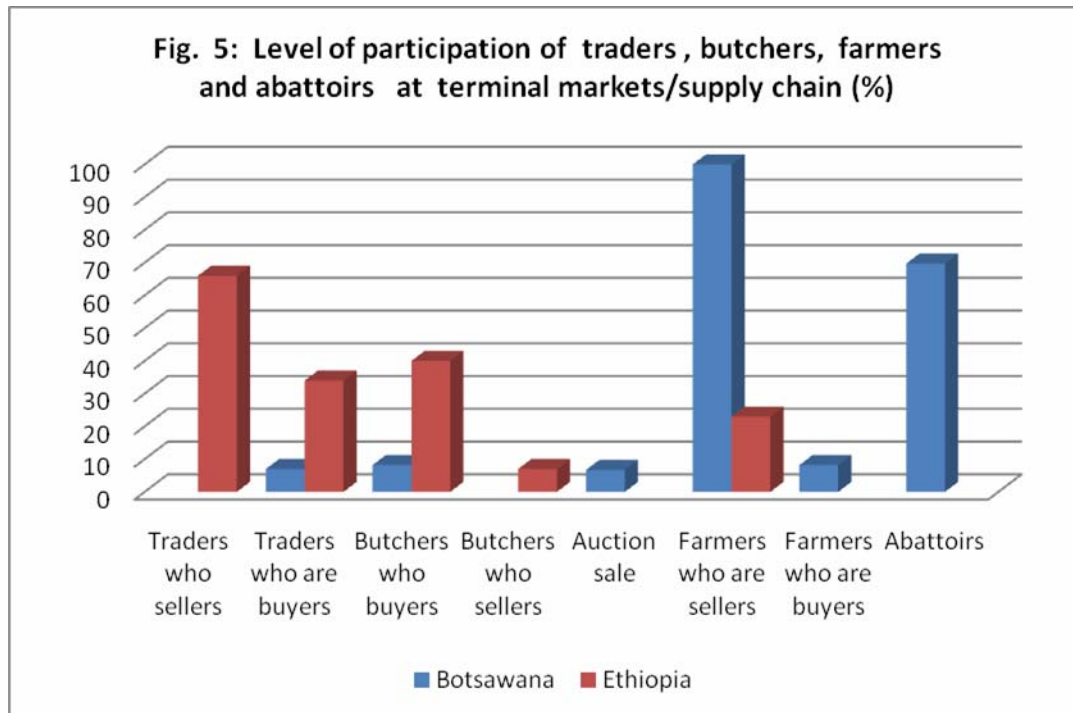
Services. This makes the supply chain unnecessarily long with increased transaction costs and without significant value added activities (Negassa and others, 2011).

28. Among the intermediaries, the livestock traders command the entire livestock supply chain and have an upper hand over the livestock producers. The number of intermediaries handling animals determines the profit margins at every stage along the supply chain. Traders buy animals based on visual assessment while meat is sold on weight basis. Transaction costs and risks associated with meat animals/meat trade are factored in the live animal price margin at all stages in the supply chain in order to minimize losses.

29. The risks include weight loss during transit/trekking, the death of animals before slaughter and condemnation at inspection by veterinarians. Pastoralists could participate and sell their animals directly to secondary markets, but unscrupulous tendencies by traders keep them from secondary markets. Pastoralists lack market information, in terms of demand and price in the secondary and export markets.

30. According to Mulale (2008), Botswana's livestock, particularly cattle, are sold through a range of marketing outlets, including the Botswana Meat Commission (BMC) which has the monopoly of beef exports (69.7 per cent), local butcheries (8.2 per cent), traders (7 per cent), auction (6.7 per cent) and other farmers (8.2 per cent, figure 5)). The participation of traders in the supply chain is minimal compared to Ethiopia where the majority of sellers at the terminal markets are traders (66 per cent) followed by farmers (23 per cent) and butchers (7 per cent), and at the same market, the majority (40 per cent) of buyers are butchers followed by traders (34 per cent) (Ayele Solomon, and others, 2003).

31. This shows that the supply chain/terminal market in Ethiopia is dominated by livestock traders (both sellers 66 per cent and buyers 34 per cent) more so than in Botswana (figure 5). The dominance of livestock traders at terminal/secondary markets in Ethiopia suggests that agro-pastoralists/pastoralist (farmers) participation at terminal markets is minimal (Negassa and others, 2011) compared to Botswana's smallholder farmers who enjoy full participation at markets and accrue more benefits from the sale of their animals using different outlets at their disposal.



Source: ECA's calculations based on data from ACTESA (2011).

B. Slaughter facilities and livestock processing in Botswana and Ethiopia

32. The slaughter facilities in Botswana and Ethiopia include abattoirs, slaughter houses and slaughter slabs, including back yard slaughters. According to the Livestock Value Chain Study by ACTESA (2011), Ethiopia has six major export abattoirs which handle less than 10 per cent of the slaughter animals, with an average of daily and annual slaughter capacity of 10,353 cattle and 5.71 million sheep/goats, respectively. There are also more than 3,000 municipality slaughter houses which handle about 30 per cent of slaughter animals, with varying slaughter capacities ranging from 5 to 200 cattle per day and supply meat to more than 10,000 butcheries and restaurants in regional towns and cities. Some 60 per cent of the animals are slaughtered in household backyards or on slaughter slabs which supply meat for domestic consumption in households, hotels and restaurants.

33. However, the concern has been the state and condition of municipality slaughter facilities, slaughter slabs/household backyards and butcheries which are below the required regional and international standards. Meat standards in terms of quality and food safety are highly compromised under the current state of infrastructure and this grossly hinders opportunities for further value added or exploitation of export markets in Europe and the Far East. This trend is common in the Horn of Africa.

34. Botswana, Namibia and South Africa portray a different picture from that of Ethiopia and most countries in SADC and COMESA, in terms of the state of the art of slaughter facilities (ACTESA, 2011). The BMC export abattoir situated in Lobatse is a state-of-the-art operation and is the only one in the country accredited by the European Union (EU) to handle and slaughter

animals for export to Europe. It has capacity to slaughter 800 cattle and 500 small ruminants (sheep and goats) per day but is currently running at 60 per cent of capacity, partly due to competition from the private slaughter houses which offer better prices. Other slaughter facilities include 18 private and 12 local authority establishments, which handle slaughter animals mostly from the traditional sector, and supply meat to the domestic market.

35. Ethiopia produced a total of 3,334,550 metric tons of meat in 2010 for home consumption. Small ruminant meat (sheep and goats) accounted for 70 per cent of the total meat produced, while beef and camel meat accounted for 21 per cent and 9 per cent, respectively. This strongly indicates that small ruminants constitute the highest in numbers and their contribution to meat production is attributed to higher off-take rates and market demand. This gives Ethiopia and the Horn of Africa/East Africa member States an advantage over Botswana and Southern Africa in terms of the variety of slaughter animals and consumption patterns.

36. In Botswana, there was a sharp (44 per cent) and gradual (35.2 per cent) reduction in slaughters in the traditional and commercial sectors, respectively, between 2003 and 2008. However, a positive rise occurred from 2008 and 2009 in the commercial and traditional sectors, respectively. The decline in slaughters could have been attributed to the FMD outbreaks in 2003/2004-2006 and 2007/2009, which caused the closure of exports to the EU market (Mapitse, 2008). However, there were more (52 per cent) cattle slaughtered from the traditional sector than from the commercial sector, which accounted for 48 per cent of the national total for cattle slaughtered between 1999 and 2010.

37. Most of the animals slaughtered in the BMC abattoir were from the commercial ranches and feedlots which normally yield high-quality carcasses compared to animals from the traditional sector. Unlike Ethiopia where most (60 per cent) animals are slaughtered in the back yard or on slaughter slabs, Botswana slaughters almost all animals in abattoirs and carcasses are subjected to meat inspection and grading to ensure meat is safe for consumption and consumers pay according to the value of the meat. This further demonstrates the breakdown of the regulatory framework in Ethiopia for failure to institute meat-grading and veterinary public health systems.

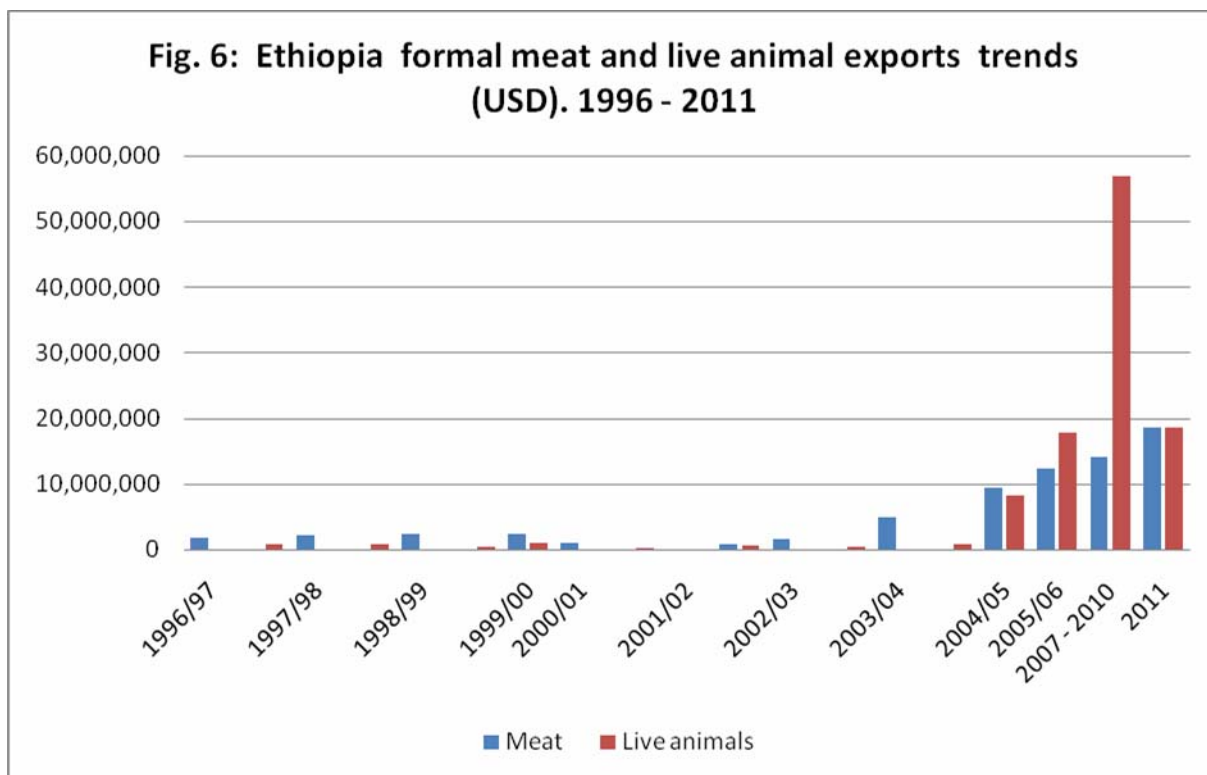
C. Live animals, meat and by-products exports

38. The formal export values for Ethiopian meat and live-animal exports stagnated from 1996/1997 to 2004 with a gradual/sharp rise from 2005/2006 to 2011, with live-animal exports showing dominance over meat exports (figure 6). This trend is similar to that reported by the Intergovernmental Authority for Development (IGAD) and the Livestock Policy Initiative Report (1999), which showed that formal live animal export levels stagnated at a low level between 1991 and 2004 and then grew rapidly from 2005 to 2008, exceeding the meat exports.

39. In recent years, official export values for Ethiopia have been declining while illegal export values have been increasing (Ayele Solomon and others, 2003), a trend which is likely to continue and accelerate if measures are not taken to reverse the situation. The total value for meat

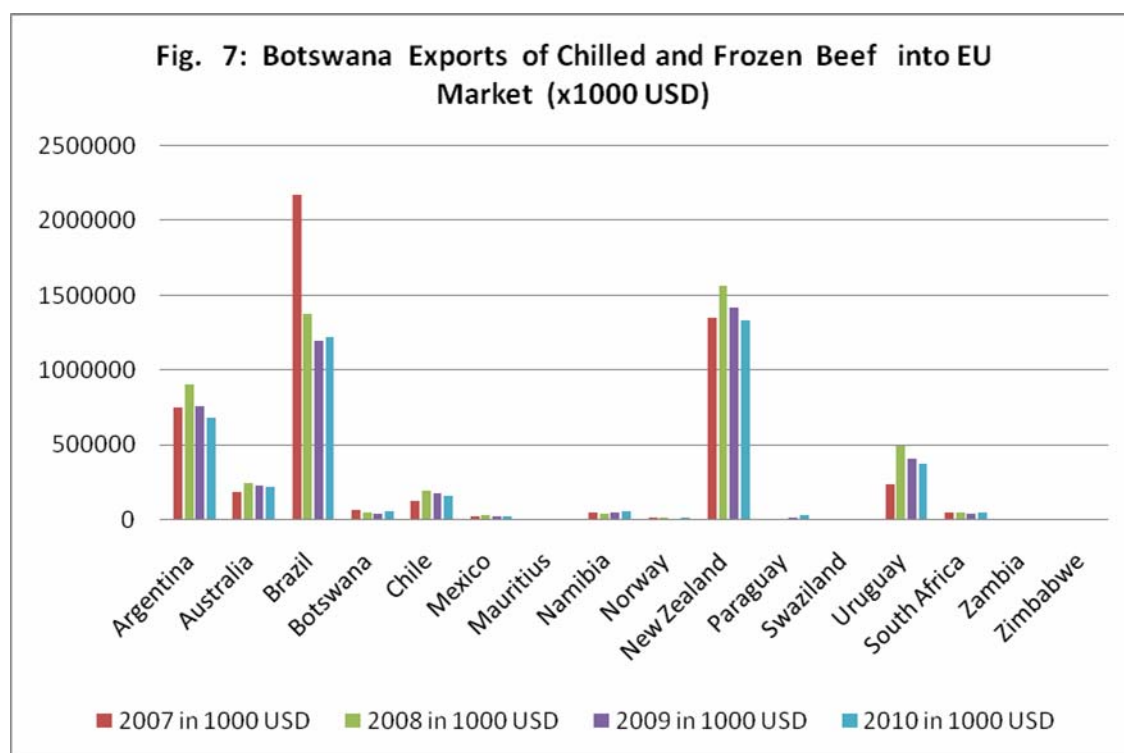
exports (\$14, 148,148.00) was extremely low between 2007 to 2010, probably as a result of increased informal /illegal cross-border trade of 6.8 million live animals (24.51 per cent cattle, 31.93 per cent sheep, 35.31 per cent goats and 62.25 per cent camels), worth \$1,043,575,571 in the same period.

40. A grand total of \$1,221,155,351.00 was raised between 1996 to 2011 through formal exports and cross-border trade, out of which 85 per cent was attributed to informal/illegal live animal cross-border trade, 9 per cent to formal live animal exports and 6 per cent to formal meat exports. The US\$ value of illegal live animal exports is much higher than the combined values of both official live animal and meat exports. About 90 per cent of the illegal live animal exports originate from the pastoral areas and although illegal, this is a major source of income for pastoralists who sell their animals to traders or smugglers.



Source: ECA's calculations based on data from ACTESA (2011).

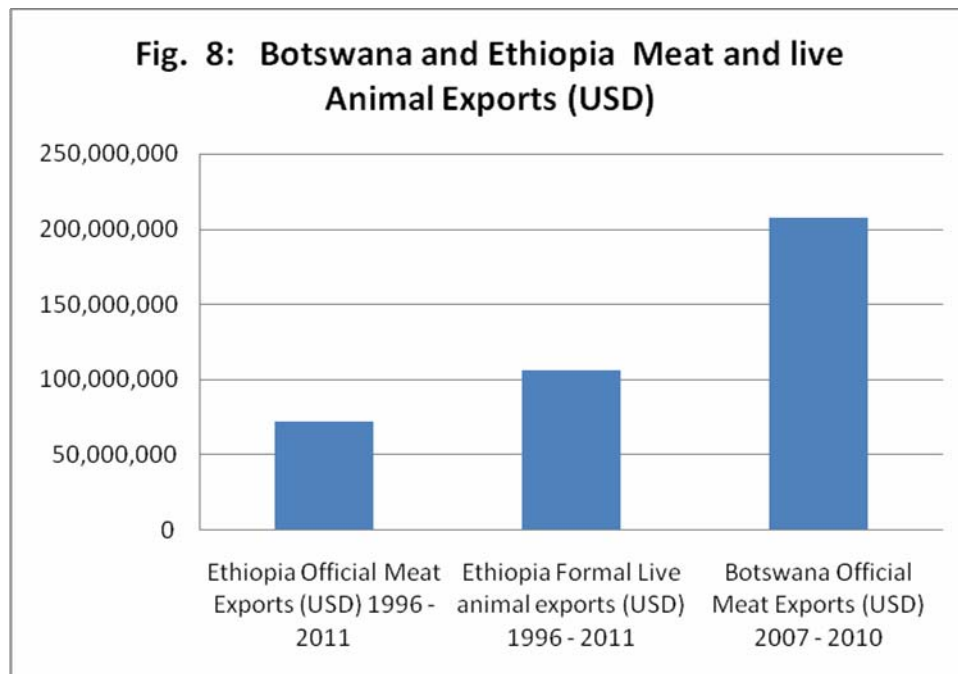
41. Although live animals make a considerable contribution to the economy of Ethiopia in terms of export earnings, a great number of the country's ruminants have been traditionally smuggled to neighbouring countries of Djibouti, Somalia, Kenya and the Sudan, using illegal trade routes. Unlike Ethiopia, Botswana does not experience informal cross-border trade for slaughter animals but for many years has been consistent in exporting high-value chilled and frozen beef to the EU market, although it faces heavy competition from Brazil, New Zealand, Argentina, Uruguay and Chile which are highly competitive in terms of quality of beef, price and large economies of scale (figure 7).



Source: ECA's calculations based on data from ACTESA (2011).

42. However, Botswana's exports of chilled and frozen beef to the EU have been declining steadily with time, from about 8,500 tons in 1998 to about 3,500 tons in 2008, a decrease of about 59 per cent (Davis Marumo and Milly Monkhel, 2011). Fresh or chilled boneless bovine meat exports followed a similar trend. They decreased from about 6,000 tons a year in 1998 to about 4,200 tons in 2008, a decrease of about 30 per cent. Botswana has never fulfilled its export quota of 18,916 tons and its market share in the EU still remains 1 per cent or slightly under. About 70-75 per cent of Botswana beef exports are consumed in the EU beef market (Davis Marumo and Milly Monkhel, 2009).

43. Figure 8 below shows that Botswana exported more chilled and frozen beef (\$207,650,002.72) in a shorter period (2007-2010) than Ethiopia's official exports of both chilled/ frozen meat (beef, mutton and goat meat) and live animals (\$177,579,780) over a long period of time (1996-2011). The huge difference in export values is attributed to inadequate value added by Ethiopia, most probably as a consequence of the broken-down market and processing/slaughter infrastructure, and lack of coordination and regulatory framework which simply enhances informal or illegal live animal cross-border trade and further hinders value added initiatives across the value chain. According to Ayele Solomon and others, 2003, the ban on imports by Middle Eastern countries and excessive regulations involving several ministries and agencies and related fees have also largely contributed to the increase in illegal sale of livestock through Somalia, Kenya, the Sudan and Djibouti.



Source: ECA's calculations based on data from ACTESA (2011).

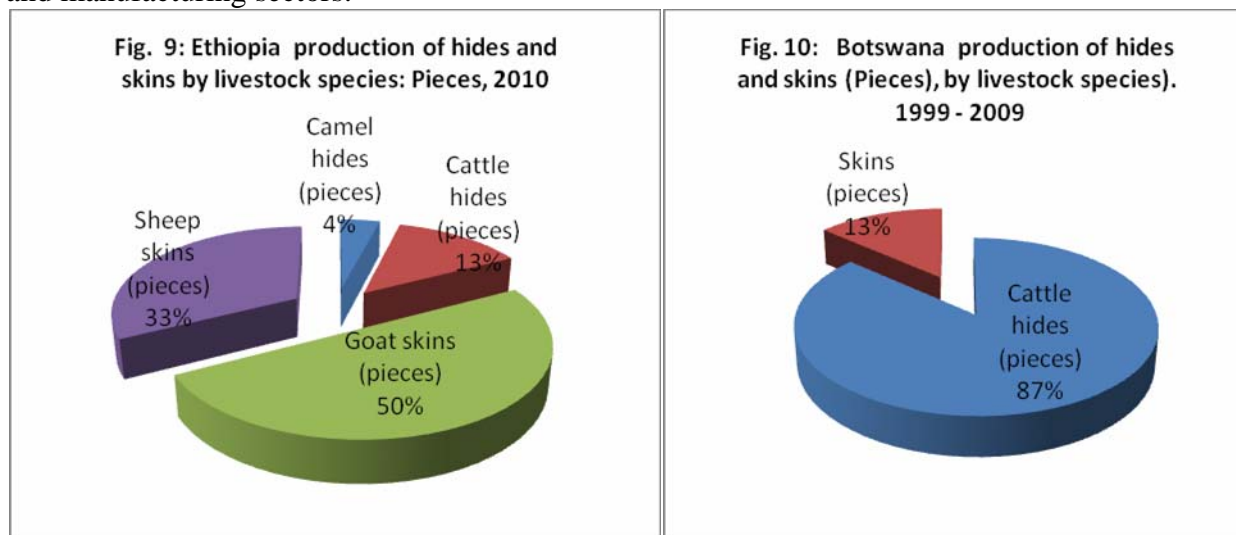
44. The growth in demand in COMESA/SADC and in the EU is for processed livestock products but Ethiopia loses value added through official exports of live animals and rampant informal live-animal cross-border trade. As a result, the country lost more than \$40 million for raw hides/skins by exporting live animals and would have earned an additional \$95 million if the same number of hides/skins were processed into finished leather and exported in that form.

45. Although Botswana seems to be doing better than Ethiopia, in terms of beef exports in US\$ value terms, it is doing so at high cost, which is likely to erode the gains from exports. Botswana's compliance with Sanitary and Phytosanitary (SPS) requirements and with the Livestock Identification and Trace Back System (LITS) is associated with high costs through erection and maintenance of cordon fences, and of LITS and disease control check points. For example, the initial cost of LITS was \$35 million and it is estimated that Botswana spends \$8 million to maintain this system annually (Davis Marumo and Milly Monkhel, 2011). Moreover, high subsidies to the beef sector which enhance exports to the EU benefit only a few groups, especially the commercial ranches and feedlot operators.

D. Hides and skin production, processing and export in Botswana and Ethiopia

46. Botswana and Ethiopia generate various livestock by-products, but the major ones of economic relevance are hides and skins. Other livestock by-products include bones, blood, hoofs and offal which are used in the manufacturing of stock feeds. Botswana produces about 280,937 hides and 48,150 skins per annum, while Ethiopia produces larger quantities. In Ethiopia, small ruminants account for the largest production, followed by cattle and camels (figure 9) while in Botswana cattle account for a larger proportion than small ruminants (figure 10). Ethiopia, therefore, has a more diversified and resilient resource base, which is able to sustain the leather

and manufacturing sectors.



Source: ECA's calculations based on data from ACTESA (2011).

47. The largest proportion of hides and skins is generated from backyards and slaughter slabs, followed by municipality slaughter houses and export abattoirs, while in Botswana most hides and skins are generated from the BMC abattoirs, local authorities and private abattoirs. In Ethiopia, hides and skins enter the Leather Value Chain through 21 tanneries for processing into finished leather and these are further channelled to 850 leather enterprises for manufacturing of leather products (shoes, garments, belts, etc.). However, Ethiopia experiences cross-border trade of about 4,925,000 pieces of hides and 10,870,000 pieces of skins into Djibouti, Kenya, the Sudan and Somalia through informal routes.

48. Currently, Botswana is exporting about 85-90 per cent of hides/skins to South Africa in their raw form, suggesting that the tanneries, foot wear and leather goods manufacturing sector are not well developed. The major concerns in the production of hides and skins in Botswana, Ethiopia and in most countries across COMESA/SADC are inappropriate animal husbandry practices, lack of flaying tools, unskilled flayers and lack of technology across the value chain, which compromise the quality of raw hide/skins (COMESA Leather Chain Strategy, 2011).

V. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

49. The main goal of COMESA is to increase income levels of poor rural small livestock keepers, including livestock-related enterprises through: (a) the promotion and enhanced value added to tradable commodities such as livestock, livestock products (milk and meat) and livestock by-products (hides and skins); and (b) access to domestic markets and further integration of their participation in regional and international markets. However, in Ethiopia, studies have shown that the majority of sellers at terminal markets are traders (66 per cent), followed by farmers (23 per cent) and butchers (7 per cent). At the same market, the majority (40

per cent) of buyers are butchers followed by traders (34 per cent). This indicates that farmers' participation in the supply chain is minimal while livestock keepers in Botswana seem to enjoy full access to the domestic market by selling their animals through a range of marketing outlets including the BMC, which has the monopoly of beef exports (69.7 per cent), local butcheries (8.2 per cent), traders (7 per cent), auction (6.7 per cent) and other farmers (8.2 per cent). This further shows that in Ethiopia, the supply chain is dominated and controlled by many middlemen/brokers at primary, secondary and terminal markets making it impossible for pastoralists to fully participate in domestic and export markets due to lack of market information.

50. The supply chain in Ethiopia is characterized by numerous informal or illegal cross-border trade routes with the absence of watering and feeding facilities along the way. This means that during trekking or transportation, animals have less access to water and feed resulting in high mortality rates and emaciation due to dehydration. Consequently, animals which arrive alive at terminal markets are of reduced value. While commercial farmers have access to the EU market, most traditional livestock keepers in Botswana have failed to penetrate the European market due to non-compliance with SPS and LITS standards demanded by the EU.

51. The livelihoods of smallholder livestock producers in Botswana and agro-pastoralists/pastoralists in Ethiopia are highly dependent on the cash income from livestock and livestock products and alleviating constraints to the following: (a) livestock production (animal husbandry, animal nutrition, animal health and breeding); (b) livestock market/domestic trade and marketing structure; and (c) market information. Upgrading marketing infrastructures including health and sanitary conditions will increase the welfare of livestock producers, urban consumers and improve the national balance of payments.

52. Livestock productivity is low, especially under the traditional and pastoral production systems and this is attributed to many factors. Livestock offtakes as an economic yard stick are low in both countries, a sign that traditional farmer and pastoralist participation in the terminal markets is minimal. The potential is masked by low livestock productivity, especially in the traditional /pastoral areas. Once the livestock value chain is fully developed and livestock productivity improves especially in the traditional and smallholder sector, this will contribute to the following: (a) Improved competitiveness and efficiency at different stages of the livestock value chain; (b) integration of traditional and smallholder sector into the emerging and commercial sector; (c) reduced persistent poverty and food insecurity; (d) raised employment levels through development of small and medium enterprises; and (e) contribution to the national economy and GDP through increased volumes of exports of quality livestock and livestock products to regional and international markets. These benefits could be achieved with less difficulty because livestock are assets especially in the traditional sector and rural economy of Botswana.

53. Disease outbreaks, especially FMD and CBPP, are barriers to market access. However, the major concern now is the cost effectiveness of compliance with SPS international standards, with regards to the huge costs involved in ensuring total compliance. The European market can be described as expensive to venture into largely due to its huge demand for SPS requirements. Botswana's export market share is very low compared to its competitors in the EU market and is even lower in the regional market, especially within COMESA. However, there is potential to

increase its market share in both COMESA and SADC where opportunities exist.

54. The traditional and agro-pastoral/pastoral livestock production systems in Botswana and Ethiopia, respectively, will be able to reach their full potential and become more relevant to the livelihoods of farmers who depend entirely on livestock, if some of the threats and challenges that the value chains are currently facing can be addressed.

B. Recommendations

55. The two livestock value chain studies conducted in Botswana and Ethiopia have revealed that TADs (CBPP, FMD, East Coast Fever (ECF), Rift Valley Fever (RVF), and Lumpy Skin Disease (LSD) outbreaks, management diseases (TBDs and helminthiosis - intestinal worms), and starvation as a result of scarce grazing due to prolonged droughts and over stocking/overgrazing, cause high production and economic losses in livestock, consequently resulting in a considerable intensification of poverty in rural areas, with loss of savings, security, livestock products and income. This phenomenon is common and widespread in the Great Horn of Africa/East Africa and Southern Africa, which compromises the livelihoods of livestock keepers.

56. A regional approach and harmonization of resources to reverse this trend are extremely important to ensuring food security and sustainable income among the pastoralists and smallholder farmers, as well as further economic development. Therefore, the following recommendations are suggested:

1. Transboundary animal diseases

57. Transboundary diseases, especially CBPP, FMD, and RVF hinder smooth trade flows of live animals and livestock products to the markets at domestic, regional and international level. The increased occurrence of these diseases suggests that there are certain weaknesses that are not being addressed and these include but are not limited to the following factors: (a) the TADs control programmes are not harmonized between the countries; (b) similarly, surveillance programmes are not harmonized with clear surveillance objectives among the countries; (c) poorly harmonized livestock (cattle) identification systems between the countries; (d) weak monitoring of TADs isolates to conform to vaccine production; and (e) poorly developed and organized cold chains for vaccines. These should be addressed, and because of the trans-boundary nature of the diseases, it is important to synchronize and harmonize all aspects of TADs control among countries in these regional clusters to ensure effective detection and prompt response. The establishment of an Emergency Disease Control Fund would also enhance prompt response to disease outbreaks.

2. Mitigation against droughts

58. In livestock production, especially cattle, sheep and goats are the major contributors to household incomes but these animals are under severe threats from the effects of droughts which

have claimed many deaths. It is recommended that:

(a) A regional approach be initiated to establish water-harvesting technologies and improved access to boreholes in drought-prone areas. Once the boreholes and dams are established, they should be given to communities to manage to ensure ownership and accountability;

(b) Governments should put Early Warning Systems in place and develop a Livestock Emergency Strategy to promote emergency offtakes/de-stocking, slaughters, water and feed provision to breeding and young animals during droughts years. De-stocking should be carefully planned in collaboration with abattoirs, traders and exporters. Governments should ensure that the farmer is not the loser when the pricing mechanism is determined for farm gate prices for livestock;

(c) Appropriate credit schemes and livestock restocking schemes/programmes should be put in place to facilitate restocking, in anticipation of high de-stocking and mortality rates due to starvation/droughts and disease outbreaks, respectively. All food relief programmes should be coordinated and should assist in building up funds for restocking.

3. Improving livestock productivity and marketing

59. Some of the reasons identified for low productivity and low off-takes include poor livestock extension delivery services (inadequate front-line livestock extension workers, insufficient or inappropriate training/skills for extension workers and technical assistants, inadequate livestock technologies and promotional techniques, inadequate mobility); production systems with low market orientation due to lack of market information and poor market infrastructure; and inadequate resources and institutional framework for livestock development. It is recommended that:

(a) Both Botswana and Ethiopia and other countries in the Great Horn of Africa and in Southern Africa should consider the creation of a single and empowered entity/Ministry of Livestock to oversee livestock sector development programmes, production and marketing, as well as veterinary services. The Ministry of Livestock should be decentralized to subregions and districts to improve service delivery across the value chain and build capacity in the system to sufficiently address the issues;

(b) Deliberate efforts are pursued to improve productivity in the pastoral and traditional sector through short- and medium-term projects or programmes. The capacity-building of farmers is important to enhancing their understanding, knowledge and entrepreneurship/business skills, so that they become more market oriented;

(c) The Government, together with stakeholders, should establish or rehabilitate market infrastructure along the trade routes, with adequate resting, watering and feeding facilities. Development of road infrastructure is cardinal to enhanced transportation of livestock to markets and reduced trekking. An enabling policy environment is needed, to attract the private sector to establish abattoirs in the cattle-producing areas and develop cold chains for carcass

transportation to urban areas for further value added;

(d) A regional livestock- and carcass-grading system should be put in place as a marketing tool to differentiate the quality of carcasses/meat and to appropriately price the same according to grade. The grading system would be an incentive to producers to produce quality livestock and meat and would promote transparency in the supply chain;

(e) A regional approach is required to promote food safety and hygiene standards by strengthening the Veterinary Public Health in collaboration with the local authorities. This will also serve as a surveillance tool to monitor the incidence of TADs.

4. Hides and skins improvement

60. It is recommended that COMESA and SADC create synergies to build capacity across the leather value chain in the subregions. Intra- and extra-trade in COMESA/SADC member States is insignificant. Harmonization of standards and trade policies is required to enhance trade. Except for Ethiopia, Kenya and South Africa, most countries will require efforts to build capacity in the value chain to ensure value added is undertaken at every stage to avoid loss of revenue and loss of employment opportunities through export of raw hides/skins.

5. Environmental degradation

61. Many concerns have been raised about environmental degradation in Botswana and Ethiopia, and in many other countries in Africa, but little progress seems to be made in reversing the situation. The contribution of livestock to overall environmental degradation through overgrazing is not yet ascertained in most countries and subregions. However, livestock production can make a huge difference in reversing environmental degradation, through the following:

(a) Identifying livestock management systems suitable for drought-prone countries. Although pastoralism is the most useful production system in terms of rangeland utilization, adjustments may be required to make it more sustainable;

(b) Taking a regional approach to use of arboricide and other trials and to use of remote sensing to generate accurate grazing capacities for more sustainable use of the land. Overstocking has been associated with overgrazing and consequently bush encroachment of rangelands with thorny and unpalatable species, thereby reducing the grazing areas.

6. Coordination and linkages

62. Despite good livestock research results and policy recommendations in the Horn of Africa/East Africa and Southern Africa, very little has been achieved in improved livestock productivity, market access and the welfare of pastoralists and smallholder farmers. There is need therefore to improve linkages/synergies among research, extension agents and policymakers in

order to improve communication and technology transfer to the livestock producers.

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