CHAPTER ONE

Economic Significance of Sheep and Goats

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Objectives

1. To explain the importance of sheep and goats in rural production systems.
2. To show the advantages of small ruminants over cattle.
3. To show the trends in export for sheep and goat meat and how that impacts demand and production.
4. To discuss the constraints of sheep and goat production in Ethiopia.

Expected Outputs

1. Improved knowledge of the economic significance and roles of sheep and goats in the livelihoods of producers in Ethiopia.
2. Increased understanding of the constraints of sheep and goat production in Ethiopia.

1.1. Significance (Advantages) of Raising Sheep and Goats

The total number of sheep and goats in Ethiopia is estimated to be nearly 48 million. Sheep and goats are widely adapted to different climates and are found in all production systems. They also have lower feed requirements compared to cattle because of their small body size. This allows easy integration of small ruminants into different farming systems.

Human population growth in Ethiopia is forcing the conversion of many former grazing areas into croplands needed for increased food production. Raising large ruminants is becoming increasingly difficult as a result of the ensuing lack of grazing areas. Land holdings in densely populated areas are below 0.5 ha. In such places, the importance of sheep and goats in fulfilling the role once played by cattle for meat, milk and manure production is being increasingly recognized. The increased demand for sheep and goat meat has also increased their importance in lowland pastoral areas as a source of cash income, food security, etc.

Special features of sheep and goats

Feeding behavior

Sheep and goats have different but complementary feeding habits. Sheep are grazers and amenable to herding, hence a species of choice in mixed cropping areas where cereal production dominates. On the other hand, goats are browsers and highly selective feeders – a strategy that enables them to thrive and produce even when feed resources, except bushes and shrubs, appear to be non-existent. Thus, the presence of goats in mixed species grazing systems can lead to a more efficient use of the natural resource base and add flexibility to the management of livestock. This characteristic is especially desirable in fragile environments.

Size

Being small-sized animals, sheep and goats require a small initial investment. Their small size, together with early maturity, makes them suitable for meeting subsistence needs for meat and milk.

Fat deposition

Sheep and goats vary in fat deposition, presumably due to different adaptation strategies. Compared to goats, sheep lay down more subcutaneous and intramuscular fat from surplus energy. Goats tend to lay down more internal fat, which is not associated with the carcass. Where carcass fat is a delicacy and fetches a higher price, sheep make an important contribution to the household economy.

Survival rate during drought

Sheep and goats have higher survival rates under drought conditions compared to cattle. Moreover, because of their reproductive rates, flock numbers can be restored more rapidly. With regard to goats, water economy is also an important biological feature. It is common for goats to be watered every four days and still provide a reasonable amount of production.

High offtake

Due to their short reproductive cycles (short lambing/kidding interval) and high incidence of multiple births (particularly for some breeds such as the Horro), there is potential for a higher annual offtake of sheep and goats than seen with cattle. This allows farmers/producers a quick interval of selling part of their flock and generating cash income.

1.2. The Role of Sheep and Goats in Food and Economic Security

Sheep and goats are among the major economically important livestock in Ethiopia. There are about 23.62 million sheep and 23.33 million goats (IBC, 2004) in the country, playing an important role in the livelihood of resource-poor farmers. They provide their owners with a vast range of products and services such as meat, milk, skin, hair, horns, bones, manure and urine for cash, security, gifts, religious rituals, medicine, etc.

Sheep and goats are relatively cheap and are often the first asset acquired, through purchase or customary means, by a young family or by a poor family recovering from a disaster such as drought or war. Sheep and goats, once acquired, become a valuable asset providing security to the family as well as milk and dairy products.

In the subsistence sector, farmers and pastoralists depend on small ruminants for much of their livelihood, often to a greater extent than on cattle, because sheep and goats are generally owned by the poorer sectors of the community. Any intervention that improves the productivity of sheep and goats is important in creating wealth and improving the standard of living of resource-poor farmers. The short generation interval of sheep and goats coupled with high frequency of multiple births allow for rapid increases in animal numbers. This builds financial capital and allows the sale of surplus animals for cash that can be used for other agricultural enterprises, school fees, medical bills, etc.

Very often, there are no banking facilities in rural areas and an easy way to store cash for future needs is through the purchase of sheep and goats. In fact, in some areas, small ruminants have been described as the 'village bank'. It has to be noted that this is beyond the cash value of the animal. Small ruminants represent only 7% of the average total capital invested in livestock in the mixed crop-livestock production system, but they account on average for 40% of the cash income and 19% of the total value of subsistence food derived from all livestock production.

Sheep and goats contribute a quarter of the domestic meat consumption; about half of the domestic wool requirements; about 40% of fresh skins and 92% of the value of semi-processed skin and hide export trade. It is estimated that 1,078,000 sheep and 1,128,000 goats are used in Ethiopia for domestic consumption annually. There is also a growing export market for sheep and goat meat in the Middle Eastern Gulf States and some African countries (Figure 1.1). At optimum offtake rates, Ethiopia can export 700,000 sheep and 2 million goats annually, and at the same time supply 1,078,000 sheep and 1,128,000 goats for the domestic market. The current annual offtake rate of sheep and goats is**,** however, only 33 and 35%, respectively. The average carcass weight of Ethiopian sheep and goats is 10 kg, which is the second lowest in sub-Saharan Africa.

The increased domestic and international demand for Ethiopian sheep and goats has established them as important sources of inland revenue as well as foreign currency. This increased demand also creates an opportunity to substantially improve food security of the population and alleviate poverty.

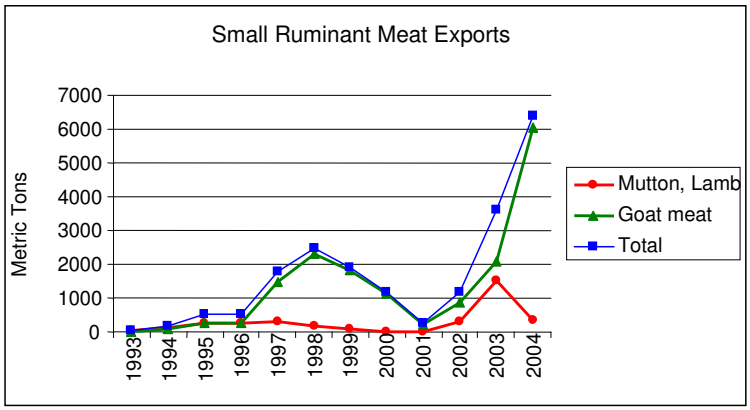

Figure 1.1. Volume (Metric Tons) of small ruminant meat exports from Ethiopia, 1993–2004.
Source: Data for 1993–2003 (FAO statistics); Data for 2004 (Ethiopian LFMD, unpublished statistics).

1.3. Major Constraints of Sheep and Goat Production in Ethiopia

Sheep and goat production and productivity in Ethiopia is constrained by many factors. The major ones are summarized below.

Scarcity of feed: The feed resource base for sheep and goat production in Ethiopia is natural grazing and crop residues. The quality and supply of these resources is seasonally variable. Grazing resources in the highlands are diminishing due to increases in cropping land. Bush encroachment and overgrazing have reduced grazing resources in the pastoral areas.

Lack of infrastructure: Infrastructure necessary to transport livestock or livestock products from remote rural communities, where production is concentrated, to urban markets is lacking. Sheep and goats are generally trekked long distances for marketing, often without adequate water and feed. They are also trekked similarly long distances in search of feed and water. There are very limited market centers and stock routes with the necessary facilities such as feeding and watering points.

High mortality rates: About one-half of all lambs/kids born die due to various causes. This is a very important constraint limiting productivity. Annual mortality in all classes of stock averages 23% for sheep and 25% for goats in the central highlands.

Inadequate veterinary coverage: This results in high mortality and morbidity. Certain disease conditions are also causing Ethiopian animals and products to be banned from export markets.

Long marketing channels and lack of market information: Producers do not have access to market information. The system lacks market orientation, which would have been an important driving force for increased production.

Low product quality: Poor quality of live animals and small ruminant meat and meat products prevents penetration into many export markets.

Absence or inadequate provision of credit services: Livestock owners have difficulty obtaining credit to begin or expand production, purchase inputs, increase stock, etc.

Low average reproductive rates: Typical reproductive rates average as low as 55 lambs and 56 kids born per 100 mature females per year in the central highlands.

References

Ehui, S. 2000**.** A review of the contribution of livestock to food security, poverty alleviation and environmental sustainability in sub-Saharan Africa. ESAP (Ethiopian Society of Animal Production) 2000. **Livestock production and the environment – implication for sustainable livelihoods**. Proceedings of the 7th annual conference of the Ethiopian Society of Animal Production (ESAP) held in Addis Ababa, Ethiopia, 26–27 May 1999. ESAP (Ethiopian Society of Animal Production), Addis Ababa. pp. 1–13.

FAO. 2004. FAO production yearbook, http://faostat.fao.org

Institute of Biodiversity Conservation. 2004. The state of Ethiopia's farm animal genetic resources: Country Report. A contribution to the first report on the state of the world's animal genetic resources. IBC. May 2004. Addis Ababa, Ethiopia.

Markos Tibbo. 2006. Productivity and health of indigenous sheep breeds and crossbreds in the central Ethiopian highlands. PhD Thesis. Swedish University of Agricultural Sciences.

Peacock, C., Devendra, C., Ahuya, C., Roets, M., Hossain, M., and Osafo, E. 2005. Goats, livestock and wealth creation. E. Owen, A. Kitallyi, N. Jayasuriya and T. Smith eds. Improving the husbandry of animals kept by resource-poor people in developing countries. Nottingham University Press, Manor Farm, Main Street, Thrumpton Nottingham NG11 0AX, United Kingdom.

Zelalem Alemayehu and Fletcher, I. 1991. Small ruminant productivity in the central Ethiopian mixed farming systems. Proceedings of the 4th NLIC, 13–15 November 1991. Addis Ababa, Ethiopia. pp. 141–147.