

28960

ECONOMIC COMMISSION FOR AFRICA

**Secretariat of the Preferential Trade Area
for Eastern and Southern Africa (PTA)**

**Meeting of the Technical Committee
Agricultural Co-operation of the PTA
for Eastern and Southern African States**

Lusaka, Zambia, 28-30 May 1984

**PRODUCTION AND QUALITY IMPROVEMENT
OF LIVESTOCK PRODUCTS**

Table Contents

<u>List of tables</u>	<u>Pages</u>
I. Introduction	1
II. Production, Consumption and trade of livestock and meat	2
A. Livestock:	2
Cattle	3
Sheep	5
Goats	5
B. Meat	6
III. Constraints to livestock development in the FTA Subregion	7
A. Development concepts and assumptions	8
Misunderstanding of pastoralists' problem	8
Misconception about project	10
B. Programming	11
C. Livestock marketing and pricing policies	12
D. Land tenure: range and water development and management	14
E. Control and eradication of animal diseases	16
IV. Issues discussed and conclusions	16

ANNEX: LIST OF TABLES

1. The Contribution of Agricultural and Livestock Sector in Total Exports in PTA Subregion, 1970 and 1981.
2. The Share of Agricultural and Livestock Sector in Total Import in PTA Subregion, 1970 and 1981.
3. Livestock Population of the PTA Subregion, 1971 to 1982.
4. Cattle Population of the PTA Subregion and Share of Each Country, 1971 to 1982.
5. Annual Growth Rates, off-take rates and Productivity Indices for Cattle in the Exporting and Importing Countries and PTA Subregion: 1972/1982.
6. Sheep Population of PTA Subregion and Share of Each Country 1971-1982.
7. Annual Growth Rates, off-take rates and Productivity Indices for Sheep in the Exporting and Importing Countries and PTA Subregion 1972/1982.
8. Goat Population of the PTA Subregion and Share of Each Country 1971/1982.
9. Annual Growth rates, off-take rates and Productivity Indices for goats in Exporting and Importing Countries and the PTA Subregion 1972 to 1982.
10. SSR and PCS by Group of Countries and Selected type of meat in 1970 and 1981.
11. Self-Sufficiency Ratio (SSR) and Per Caput Supply (PCS) of total Meat, 1970-1981.
12. Self-Sufficiency Ratio (SSR) and Per Caput Supply (PCS) of total Beef 1970-1981.
13. Self-Sufficiency Ratio (SSR) and Per Caput Supply (PCS) of Mutton 1970-1981.

I. Introduction

1. The study is directed at the livestock sector of the member States of the Preferential Trade Areas (PTA) which brings together 14 countries at present (May 1984), namely: Burundi, Comoros, Djibouti, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Rwanda, Somalia, Swaziland, Uganda, Zambia and Zimbabwe.
2. The report has been prepared by the secretariat of the Economic Commission for Africa (ECA) on the basis of information available to it. A comprehensive study on "Progressive Development of the African Livestock Sector" is being prepared by ECA secretariat in close collaboration with the Food and Agriculture Organization (FAO) for discussion in 1985 by the ECA Conference of Ministers.
3. Attempts have been made to discuss the data by grouping the countries into importers and exporters. The countries that are classified in the surplus group are Ethiopia, Kenya, Lesotho, Rwanda, Swaziland, Somalia and Zimbabwe, and those included in the deficit group are Burundi, Comoros, Djibouti, Malawi, Mauritius, Uganda and Zambia. The surpluses and deficits are in terms of trade since the per caput supply (PCS) of meat are below the nutritional and dietary requirements in both groups of countries.
4. Directly or indirectly livestock plays an important role in the economy of many PTA countries. For instance, the shares of livestock in the total and agricultural Gross Domestic Product (GDP) of Somalia were respectively 26 and 80 per cent in 1981. Corresponding figures for Ethiopia were 16 and 36 per cent. Also about 30 per cent of the agricultural GDP and 5 per cent of total GDP of Zimbabwe were derived from the livestock sector. Furthermore, the balances of trade of many countries of the PTA subregion are influenced by the livestock sector. For instance, in 1981, the exporting countries as a group earned US\$266 million from the export of livestock products while they imported about US\$137 million of livestock products consisting mainly of dairy products. In the exporting countries the shares of livestock in total export and total import were estimated at 7 and 2.4 per cent respectively in 1981. For the importing group, the livestock export revenue is derived mainly from the export of hides and skins. About 2 per cent of the total import bill of the importing group of countries was 0.5 per cent. The balance of trade of all merchandise of PTA products had remained negative between 1970 and 1981, and the livestock sector contributed substantially to its improvement. The shares of livestock in total and agricultural export and import of individual countries in 1970 and 1981 are respectively in Table 1 and 2.
5. In recent years there has been a rapid increase in imports of livestock products particularly dairy products in which the self-sufficiency of the PTA subregion has been declining. In the case of meat, the subregion

has maintained self-sufficiency between 1970 and 1981 although a limited number of ruminants for breeding were imported from outside the PTA sub-region, largely from developed countries. The annual growth rate in the imports of all livestock products into the subregion over 1970-1981 period was estimated at 15 per cent. During the same period, the growth rates for importing and exporting groups were respectively 9 and 19 per cent. Consequently, the import bill of livestock products and by-products for the subregion as a whole, increased more than five-fold between 1970 and 1981.

6. The potential for improving the productivity of indigenous livestock and the production of meat is tremendous and prospects exist to increase intra- and extra-subregional trade. Emphasis should therefore be laid on increasing intra-PTA trade in livestock products. However, in order to realize these potentials there is a need to considerably reduce and eventually eliminate constraints to the development of the livestock sector. The major constraints are discussed in the present study and suggestions have been made on how to tackle them.

II. Production, consumption and trade of livestock and meat

7. Serious reservations are often made on the quality of data relating to the livestock sector of developing countries particularly in Africa. Therefore in this study, the analysis has been based mainly on relative magnitudes and directions of change rather than in absolute values.

A. Livestock

8. In 1982, the population of livestock was estimated at 81 million livestock units. About 71 per cent of the total population consisted of cattle; 14 per cent of sheep; 12 per cent of goats, and the remaining 3 per cent of camels. Population growth was at an annual average rate of 0.6 per cent and the share of each category of livestock in the total remained almost unchanged during the period 1972-1982 (see Table 3).

9. The total share of PTA cattle population in Africa was estimated at 35 per cent in 1972 against 33 per cent in 1982. It is to be recalled that Ethiopia (the most cattle populated country in Africa) is located in the PTA subregion. In 1972, the sheep and goat population of the PTA subregion represented respectively 25 and 33 per cent of the total African population and corresponding figures in 1982 were 23 and 32 per cent. Although the production in areas with comparative advantage in intensive production of meat, milk and eggs is relatively important in PTA subregion when compared to other parts of Africa, yet its livestock industry remained largely undeveloped.

Cattle

10. The cattle population in the PTA subregion was estimated at more than 57 million head in 1982 with more than 84 per cent in the exporting countries. About three-quarters of the PTA cattle population were shared by the three countries: Ethiopia, (46 per cent); Kenya (19 per cent); and Zimbabwe (9 per cent) (see Table 4). The share of importing countries barely reached 16 per cent during the period 1972-1982, and 56 per cent of that share was located in Uganda. Although the share of Ethiopia is decreasing in the total cattle population over the period 1972-1982; it still remained the largest cattle producer in the PTA subregion. In fact, in 1982, Ethiopia's cattle population was about three times that of all seven importing countries. Between 1972 and 1982 the cattle population in the importing countries increased by 23 per cent compared to only 4 per cent in the exporting countries and about 6 per cent for the PTA as a whole indicating that considerable efforts have been made in the last decade or so by the deficit group of countries to increase their self-sufficiency (see Table 4).

11. The average annual growth rate of the cattle population in the PTA subregion was estimated at 0.5 per cent over the period 1972-1982 and considerable variations are observed throughout the sub-periods and between the two country groupings. The rate was stable (0.6 per cent) during the periods 1972/1975 and 1975/1978; negative (-0.5 per cent) during 1978/1980, and much higher (1 per cent) during 1970/1982. (see Table 5). In this report, these three periods have been referred to as stable, calamity and recovery periods. The variations in the growth rate from stable to calamity period and from the latter to recovery period were respectively -83 and + 200 per cent over the period 1972-1982. The corresponding figure from the stable to recovery period was estimated at 83 per cent. The growth rate in importing countries was much higher than in the exporting countries during the stable and recovery periods. Also the slowdown in the growth of the population of cattle in the importing countries was less than in the exporting group during the calamity period. The fact, that the growth rate over the period 1972-1982 declined at 5.5 per cent per annum, and in 1982 it was about one-half of its level in 1972, seems to indicate that the rates of growth of cattle population in importing countries are approaching the level of about 1 per cent which has been experienced by the exporting countries.

12. In 1982, the average off-take rate of cattle was about 10.3 per cent in the PTA subregion compared to 8.9 per cent in 1972. It is observed that the average off-take rate of cattle in the exporting countries increased between the period of stability and that of calamity and this rate reached its highest level during the latter period. On the contrary, in the importing countries, the average off-take rate decreased from the period of stability to that of calamity. In actual fact an opposite development is taking place in off-take rate of cattle in exporting vis-a-vis

importing countries at all times. This is an indication that some intra-subregional trade is taking place, the magnitude of which is amplified during the calamity period.

13. There is need to be cautious in interpreting the flow of trade during the calamity period. The pastoralists usually decide to sell their cattle when it is too late and, coupled with the lack of infrastructure for rapid procurements and manufacturing purpose they lose a considerable part of their herd, exceeding 40 per cent in some cases. If the animals are not lost, they are often in such poor conditions that they do not qualify for exports to high-priced markets outside the PTA subregion. Therefore, the neighbouring deficit-countries tend to attract whatever quantity of cheap and emaciated cattle they can from the excess domestic supply of exporting countries. During drought period the possibility of arrangements between affected and non-affected countries for saving the animal resources of PTA should be investigated.

14. The productivity index, which is the sum of the growth rate of the population and the off-take rate, was estimated for the PTA subregion to be 11.3 per cent during the recovery period, 9.5 per cent during the stable and 9.7 per cent during the calamity periods (see Table 5). During the recovery period, the productivity index improved significantly in the exporting countries as well as in the PTA subregion as a whole. This is an indication of a potential for better performance of the indigenous cattle. Also during the recovery period, the mortality rate is much lower and the carcass weight is much higher. In addition, the number of condemned carcasses or the proportion of carcasses condemned in the slaughterhouses are much lower during the recovery period compared to other periods. As a result, the revenue derived from a marketed average cattle is much higher, so that fewer animals are needed to satisfy the cash requirements of the pastoralists.

15. It is important to point out that the improvement in the productivity of the pastoralists herd results directly from the consequences of the calamity period. For example after such a period, there is usually a selection of better animals and a bias towards a herd structure of younger and female animals. Also, forage would be available at relatively short distances from watering points. Accordingly, some livestock policy analysts see in the recurrency of calamities such as drought or killer diseases a mechanism for controlling the growth of cattle population and for reducing the degradation of pasture land as a balance is brought between the carrying capacity and the stocking rate. However, there are indications that the cycle observed during the 1972-1982 period will be repeated at shorter intervals in future and that the extreme values (highest and lowest) will be lower from cycle to cycle. This will lead to a greater loss for society as a whole and will impede seriously the ability of the pastoralist to satisfy the reconstitution constraint. Therefore, this natural way of maintaining a balance between livestock

population and carrying capacity is not an appropriate way of achieving long-term aims of livestock development in the traditional sector. Consequently, actions are required to avoid further deterioration in the productivity of cattle.

Sheep

16. The sheep population in the PTA subregion has grown from 41 million in 1972 to 44 million in 1982 when 91 per cent of the PTA sheep were shared by the three, countries with the largest sheep numbers, namely Ethiopia, Somalia and Kenya. The share of the exporting countries was 96.3 in 1972 and in 1982 it declined to 95.7. Over the period 1971 to 1982, Ethiopia had more than 50 per cent of the PTA total sheep population. Among the seven exporting countries, three of them (Ethiopia, Kenya and Somalia) had among themselves more than all the sheep numbers in the importing countries (see Table 6).

17. The growth rate of the sheep population of the subregion was at about the same rate as the expansion of cattle population during the period 1972-1981 as a whole, but it was negative over 1972-1975 period. The growth rate in sheep number of importing countries was more than four times that in the exporting countries. The off-take rate and the sheep population increased substantially during the 1972-1981 period while the self-sufficiency ratio (SSR) remained constant and the per caput supply (PCS) of mutton was significantly lower. These developments imply that the volume of export of sheep and mutton was significantly higher in 1981 as compared to 1972. In the importing countries the off-take rate of sheep was much higher in 1972 than in the exporting countries and the inverse was observed in 1981. The productivity index in the sheep sub-sector for PTA was estimated at 35 per cent in 1981 which was at least 14 per cent higher than its level in 1972. Between 1972 to 1981 the productivity index improved in the exporting countries while it deteriorated in the importing countries (see Table 7).

Goats

18. There were about 49 million goats in the PTA subregion in 1982 against 44 million in 1972. In both years about 92 per cent of the goat population were found in the exporting countries. The same three producers as in the case of sheep shared about 85 per cent of the PTA goat population in 1982 (see Table 8).

19. The average annual growth of the goat population was estimated at 0.9 per cent in the PTA subregion over the period 1972-1982 as a whole. The rate was negative over the period 1972/1975. In the importing countries the rate decreased from period to period. The same phenomena was observed in the exporting countries and the PTA subregion from 1975. The off-take

rate of goats in the subregion was estimated at 32 per cent in 1982 against 34 per cent for sheep. The off-take rate improved for both importing and exporting countries, between 1972-1982 and the same pattern was observed for the productivity index. Between 1972 and 1982, the productivity index increased by 13 per cent in the exporting countries, by 2 per cent in the importing countries and by 12 per cent in the PTA subregion as a whole (see Table 9).

B. Meat

20. The PTA as a subregion was self-sufficient in total meat in 1981 and the self-sufficiency ratio (SSR) which was estimated to have reached 103 per cent in 1981 increased at an annual average rate of 0.2 per cent over the period 1970-1981. The exporting countries remained self-sufficient over the period 1970 to 1981 and the SSR increased at an annual average rate of 0.3 per cent. In the importing countries the SSR rose at 2.3 per cent per annum over the same period (see Table 10). In the beef sub-sector the PTA subregion was not self-sufficient in beef production in 1970 (99 per cent) and in 1981 (97 per cent). The importing countries improved their SSR in beef by 24 per cent while the exporting countries experienced a drop of about 15 per cent. The subregion as a whole was self-sufficient in sheep meat and goat meat in 1970 (100 per cent) and in 1981 (105 per cent). The improvement in the self-sufficiency position of the subregion was due to the decline in the import needs of importing countries between 1970 and 1981.

21. Although the per capita supply (PCS) of total meat stagnated at 14 kg. between 1970 and 1981 in the PTA subregion as a whole, changes were observed in the two groups of countries and in the composition of products. Indeed, for total meat, the importing countries improved their PCS by 1 kg while the exporting countries lost 1 kg. The share of meat other than beef and mutton which was negligible in 1970 rose sharply to 21 per cent in 1981. Other meat substituted to beef and mutton by about 14 per cent in the exporting countries but the importing countries maintained their level of PCS of beef at the 1970 level and they increased their PCS of mutton and other meat slightly. Although the PCS in the PTA subregion is much higher than that for all Africa, the variation among countries is great. Nearly 69 per cent of the countries had a PCS less than or equal to the subregional PCS average. Also in 1981, the PCS of the exporting countries was double that of the importing countries, and the highest PCS was more than eight-fold its lowest value (Tables 11, 12, 13).

22. Although the PTA as a whole is self-sufficient in total meat, this indicator hides the fact that the average consumption at 14 kg is still very low both in terms of intake of meat and proteins. On the supply side, there is considerable potential for increased production of livestock at low cost particularly in the exporting countries. However, appropriate measures are required at national and subregional levels in order to realize

these potentials. In addition to the expansion of production per se, there is a need to remove tariff and non-tariff barriers within the PTA, the evolution of an appropriately designed system of barter trade is required in order to reduce the need for using only convertible currency in trade within the PTA. It will also be beneficial for the expansion of trade in the PTA, if the livestock and meat exporting countries were to export these products, particularly live animals, to the high priced markets in the Gulf States and Middle East, in order to earn extra convertible currencies which could contribute to efforts which they are making to improve their capabilities to export. In order to assist the orderly development of production and trade, it is important for importing and exporting countries to reach long-term agreements both at government and private sector levels including joint investments ventures in production and infrastructure for marketing and trade.

III. Constraints to livestock development in the PTA subregion

23. Considerable information exists on the technical sides of the problem of livestock development and yet the pace of expansion in livestock production in the PTA subregion has been rather disappointing. Therefore in this paper, more emphasis has been laid on the factors that have led to the slow development in livestock production in the subregion despite the considerable knowledge which exists on how to remove constraints.

24. Efforts have been directed toward overcoming the constraints particularly since the beginning of the 1970's but given the development concepts and approaches which were not commensurate to the magnitude of the problem and the potential of the livestock industry, results have been disappointing. Also it is increasingly recognized that the output of these efforts was below expectations mainly because of the failure to take fully into account the motivations, objectives, aspirations and strategies of pastoralists when designing and implementing projects.

25. In most countries the pastoralist does not control the management of some basic resources such as forage and water, so that he is not induced to maintain or to improve them in order to reduce the impact of drought or diseases. Also he has no control over the quality and frequencies of animal health services which are publicly owned and supplied but are essential for reducing and eventually eliminating the chances of killer diseases occurring. In such circumstances, the pastoralist has included as a measure for dealing with calamity, the need to maintain large numbers than available resources can withstand. So that even if his herd were to be reduced during calamity periods, he could have enough animals for reconstituting his herd while continuing to satisfy the subsistence needs of his family. Consequently, the building up of herds takes paramount importance in the decision-making process of pastoralists, especially in deciding on the sale of animals. Although to the pastoralist his decision is rational from the point of view of the society, the behaviour of the pastoralists taken together

produced a major constraint to increase animal productivity and production of meat. In order to reconcile the objectives of individual pastoralists on the one hand and of society, ways and means need to be found to alleviate or eliminate the reconstitution constraint. Although the current stock of technological knowledge is sufficient now for reasonable progress to be made, past and on-going programmes have found it difficult to tackle effectively the main factors leading to the reconstitution constraint. Efforts in this study have therefore been directed to find reasons for this failure and to suggesting ways of reconciling the objectives of pastoralists and society and the strategies of pastoralists and governments. The constraints to livestock development have been divided into five, for the progress of this report.

A. Development concepts and assumptions

26. Behind the disappointing performance of the livestock sector lies the little knowledge or complete misunderstanding of the pastoralists problems and requirements. As a result of these misunderstandings, projects and programmes aimed at alleviating the problems are often based on wrong assumptions or inaccurate information.

Misunderstanding of pastorlists' problem

27. It is widely recognized that for centuries the pastoralists have been living in their own environment managing their resources and animals with minimal or without interference from outside. Although, project designers were expected to review the existing livestock production systems and, together with pastoralists, find ways and means of reconciling the objectives and strategies of the governments on the one hand and pastoralists on the other there are indications that most projects were designed and implemented with minimum consultation between the two interested groups. Also there is abundant evidence that project administrators and staff tend to consider the objectives, strategies and behaviour of pastoralists as the first set of constraints to be eliminated in order to achieve the main objective of most projects which focus on animals, particularly cattle for beef production. Therefore, multiple-function of cattle and the multiple decision-making of the pastoralist has been ignored even though the bulk of cattle belong to pastoralists particularly nomads and transhumant population.

28. Accordingly, the pastoralists have been forced to adapt their strategy somewhat in conformity with the wishes of the project staff, administrator and activities in order to avoid confrontation, but this adaptation is never complete since it results from coercion. This attitude does not lead to progress in livestock development. It is common to find pastoralists, particularly in ACAB, holders of more than two national identification cards in order to escape with their animals from one country to another and back whenever necessary.

29. Due to lack of communication, the planners and policy analysts in the livestock sector often failed, for instance, to understand the reconstitution objective of pastoralists and try unsuccessfully to change the behaviour of the pastoralist through small-scale projects and programmes on an experimental and piece-meal basis. There are also indications that these projects and programmes have added technical constraints to the existing ones without solving the problems for which they were designed.

30. Although the behaviour of pastoralists needs to be influenced for the betterment of their lives and that of the society as a whole, it is important to introduce changes in a logical manner while resolutely trying to solve the problems resulting from droughts and killer diseases which are the bases of the reconstitution constraint through solutions to problems related to water availability, range management and animal health, and suggestions for tackling these problems are made in sections dealing with land tenure, range and water management and control and eradication of animal diseases.

31. It has always been felt that the best way of making the pastoralists contribute toward the development of the livestock and other sectors of the economy and to compensate for the freely provided public services would be to charge a levy on the basis of animal head. This procedure, was based on an erroneous evaluation of the reaction of the pastoralists. It should be noted that the pastoralist does not feel responsible to the society for the maintenance of the environment in general, and since range resources, equipment and infrastructure access is public and free in particular. Accordingly, the environment became degraded, the equipment and infrastructure deteriorated and the range resources depleted at a faster rate than normal. Also the governments have often been unable to deliver the quantity of services commensurate to the magnitude of the problem to be solved. Moreover, the share of the staff budget in the total animal health services is often so high that little funds is left for the staff to perform their duties effectively. Consequently, some pastoralists, while paying taxes hardly had any access to government services.

32. The public ownership status of range resources, the free nature of services and the manner in which the pastoralists uses them increase the risk of drought and killer diseases which tends to reinforce the reconstitution constraint. The current concept of development as conceived by planners discourages the private ownership of resources, such as range land and water, and it also precludes the supply of animal health services at a levy, and as a result, the pastoralist hardly have any production cost in terms of cash which would have necessitated the selling of his cattle for meat production. Also, the attainment of the government's objectives, such as adequate supply of meat and milk and a higher contribution of the livestock sector to GDP and balance of payment are seriously impeded.

33. Lastly the taxation policy leads to lower declaration of animal number, in order to avoid tax payments. This seriously affects the accuracy of data on livestock and results in distrust between the pastoralists and governments. The veterinarians are often suspected of being in contact with tax collectors and this discourages some pastoralists from bringing all animals for health care.

34. As the demand for basic services such as animal health cares, the provision of adequate water and improvement in rangeland are enormous, it will not be possible in the foreseeable future for governments to provide these services in adequate quantity and quality without charging levies. As a matter of priority there is a need to evolve policies which will induce and ensure the progressive and active participation of pastoralists in their own development including the provisions of the required services and development of physical resources at a levy instead of the present system of taxing the pastoralist on head of animals without rendering continuous and adequate services.

Misconception about project

35. Projects are considered as an extension of government administration and it is often not taken that they are instituted for solving particular problems after which they would have to end. This was particularly so in projects where the advantages for staff are tremendous when compared to non-project staff and when they are not linked, as they should be, to the productivity of the staff and the performance of the project. Rivalry between project and non-project staff and even between expatriate and counter-part staff were created because of the huge difference in the salaries and benefits. Pressure on project administrator often led to overstaffing and high turn-over of project managers is common. The overall consequence of all these is poor performance of projects and of the livestock sector as well as poor allocation of scarce resources.

36. Furthermore, the decision process has always been centralized and the project monitored and evaluated by heavy bureaucratic machinery located in the capital city or far from the project site, which resulted in unclear responsibility and accountability for the project. The information on which depends the essential factors for making well-informed decisions relating to livestock activities and to the pastoralists' needs are based quite often on inadequate or distorted information. Consequently, the project ends without solving the problems for which they were instituted.

37. The failure of the project to solve problems adequately explained a lack of effectively developing the livestock sector particularly in areas with comparative advantage in breeding. Therefore, in order to ensure the success of the livestock projects, it is important to remember that they are instituted to solve a particular problem and thereafter they would end.

Also it is important to ensure that the local staff are adequately re-enumerated in order to reduce turn-over and increase performance. Every effort should be made to maintain a high level of communication between the following three groups - the government and project, the project international staff and the local staff and the project and the pastoralists.

B. Programming

38. Many countries in Africa have tried to centralize the planning of the national economy, with a view to ensure optimum utilization of national resources. However, they have found it increasingly difficult to implement comprehensive and well integrated plans due to financial, management and organizational constraints. Moreover, in many cases, the urgency of work is such that the answer is wanted before the work is started. Consequently, most plans have inevitably been nothing more than a listing of project titles against a rough estimate of aggregate cost and an enumeration of qualitative benefits for each project. In this way it is not possible to ensure vertical and horizontal integration of activities and sometimes objectives are made impossible to achieve within the plan period, thereby reducing the effectiveness of programming. Furthermore, there are indications of poor identification and formulation, incorrect settings of priorities, inadequate financing and ineffective monitoring and evaluation of projects in the African livestock sector. Indeed, an effective programming of the livestock sector requires sound conceptual foundations, meaningful and appropriate data base and an understanding of the empirical relationships necessary to predict the consequences of alternative policies. These however, are presently lacking in Africa.

39. In order to ensure the achievement of desirable outcomes of livestock production endeavours, it is essential to collect, analyse and disseminate biological, physical and economic data on permanent basis and to develop and use powerful analytical tools. The basis of this kind of work will need to be laid through the carrying out of livestock censuses, and the studying of the movement and distribution of animals and by making an inventory of the resources availability, in particular - water and pastures, agricultural and industrial by-products. In view of inter-country movement of livestock, it is important to carry out these activities in neighbouring countries simultaneously as much as possible.

40. Owing to the scanty nature of data and information relating to the African livestock sector, several other factors heavily influence the choice of projects. First, policy formulation and decision-making are fragmented between several government departments which often leads to ambiguous distribution of responsibilities and appointment of inter-ministerial and technical committees which tend to create gaps in communication instead of bringing them together and to slow down the search for solution to problems. Also, the funds and manpower required to implement

the livestock programmes of most countries are largely based on external assistance instead of taking these to be complementary to national efforts and resources. Also, when African country formulates a comprehensive and integrated livestock programmes encompassing water development, animal health care and marketing, it is common for such a country to fail to find adequate external resources for the entire foreign component of the programme. As most outside financiers have a tendency to choose which component they are willing to finance, failure to integrate all the components could be counter-productive to any one part. Furthermore, many of the projects are experimental, small-scale, implemented on a piece-meal basis and are too-short. Lastly, most countries have been unable to fulfil their local commitments to the project - counterpart staff, funds and other resources - while the donor and executing agencies failed often to respect the planning of activities which not only reduced the performance of the project but also impeded the negotiations for subsequent phases of the project and thereby its continuation.

41. Meat is considered as a strategic product by most countries and therefore deficit countries strive to be self-sufficiency in meat production at any cost, while the surplus countries' objectives include the maximization of export revenues from their livestock sector which is a major source of export earnings for most of them. This conflicting attitude between the two groups, not only increases the competition for the limited available financial and manpower resources allocated for the livestock sector by donor and lending institutions, but also makes the efficient implementation of some vital national, subregional and regional programmes rather difficult to carry out.

42. Efforts should be devoted to design and effectively implement comprehensive and integrated livestock development strategies at national levels which need to be harmonized, integrated, co-ordinated and monitored at sub-regional level. Also, the programming capability at national and subregional levels should be developed. Particularly, attention should be devoted to project formulation, design, implementation and adequate review should be undertaken to build-up experiences.

C. Livestock marketing and pricing policies

43. A regular and increasing supply of high quality live animals for the production of meat and by-products at least cost is generally expected from the livestock sector of exporting as well as importing countries. In order to achieve this objective, it is necessary to improve the efficiency of marketing systems and channels, including the re-organization of the professionals dealing with the marketing of live animals, meat, hides and skins and the traders at retail and wholesale levels. In many countries programmes have been designed to provide market infrastructures and equipments for improving the transport of livestock products and by-products and for

developing and creating infrastructures for the transformation of livestock products and by-products. Also attempts have been made to develop the marketing information system, for providing credit and for creating and operating ranches and feedlots. Furthermore, provisions have been made in most economic groups in Africa for the promotion of production and trade of livestock products and by-products between countries as is the case in the PTA.

44. Also in many countries, attempts have been made to replace the private marketing organizations by a monopolistic parastatal organization, particularly in the marketing of live animals, hides and skins; in supplying meat to public institutions such as schools hospitals, the army; in the transportation of meat from slaughterhouses to meat markets, and in exporting meat. Regulatory measures include the setting and control of the prices of meat, live animals, hides and skins, the control of the number of butchers at retail and wholesale levels, as well as the middlemen, and the control of quality of livestock products and by-products.

45. Despite all these efforts in improving the marketing structure and pricing mechanism related to livestock and meat, the increases in the production of meat have been disappointing. Firstly areas with comparative advantage in breeding failed to supply young animals to other areas for intensive production for the simple reason that the production systems were not influenced in such a way as to induce a change in the risk aversion attitude of the pastoralist. Therefore, the fear of drought and diseases continues to give rise to considerable importance to the re-constitution constraint and to the maintenance of the levels of the pastoralist requirements. In addition, the absence of outlets for extra-income from increased sales of the pastoralist livestock discourages him from increasing the off-take from his herd. Thus the failure to integrate marketing programmes with other activities such as range management and animal health services and to provide opportunities for cash spending such as on consumer goods and for investments in livestock and other activities becomes counter productive to livestock development.

46. Also, the areas with comparative advantage in intensive production of meat failed to up-grade the feeders and culled animals supplied by ACAB before entering domestic slaughterhouses. Here, the pricing and marketing policies of meat and feeds are such that they are detrimental to capital intensive and semi-intensive production systems where it is difficult to cover costs of production at the controlled domestic price levels of meat. Pricing and marketing policies in the feeds sector along with the administrative procedures, export related cost for livestock and meat and to some extent the preference of live animals over meat in importing countries are cited as main constraints for expanding trade in fed and finished animals. Also if trade policies do not take into account the interest of traders, there is a tendency for large numbers of unfinished animals to be traded across

borders through unofficial channels. Consequently, the exporting countries lose badly needed foreign exchange and tax revenues. Also considerable distortions of information on trade take place.

47. The live animal market is often a free market. Middlemen collect animals from farmer to farmer to be delivered, ultimately to urban markets for slaughter or live export. In countries where the meat price policy favours urban consumers and the retail price of meat is controlled, there is a tendency for meat processing cost not to be adequately covered. In order to ensure profitability butchers buy low grade animals and sell their meat at the official set price which is intended to be charged for meat of better quality animals. As a result, not only are consumers faced with irregular supply of meat but governments inadvertently endorse higher price levels for low quality meat.

48. Lastly, failure to understand the existing marketing system has often led to the creation of parastatal organizations dealing with the marketing, transportation and distribution of animal products and by-products, which in general did not perform relatively well.

49. In summary, current efforts towards marketing improvement have not provided enough incentives for efficient allocation of resources in production and trading activities. In some cases, they have resulted in higher unit cost to producers of fed, finished animals and meat, in higher prices to consumers; irregular flow of meat; lower quality of meat and in development of unofficial trading. The possibility of providing enough economic incentive for the feeding of culled animals in areas of intensive production should be fully explored and exploited particularly in exporting countries. Also, it is highly desirable to harmonize the marketing and pricing policies of live animals and meat in order to promote intra-trade in the subregion. Efficient marketing systems at national and subregional levels and the use of proper identification paper for every animal exported would also contribute to the orderly development of trade in the subregion.

D. Land tenure: range and water development and management

50. The access of livestock producers to humid zones, where rainfall is regular and abundant is limited by the existence of the tse-tse flies and land tenure systems particularly in ACAB do not allow optimal allocation and use of scarce range resources.

51. At independence, most African governments took over by decree the ownership of all land, mainly for equity motives. Thereafter, usufruct rights on specified portions of land had to be obtained from government officials and/or from traditionally appointed chiefs. However, pasture land remained largely publicly owned and used communally for grazing so that the decision-makers for the use and management of range resources -

water and forage - are numerous and unknown to each other. A tenure system which does not control and restrict access to land will lead to sub-optimal use of resources and a total loss for the society, due to the complexity of the decision-making process regarding the use of resources and the disposal of products, particularly in areas of cash cropping to which livestock breeding is comparable and the fragility of the environment in arid zones. Since the pastoralist is risk averse and such tenure system increases the risk and the impact of drought and diseases, he has no choice but to reinforce his reconstitution objective. The immediate consequence is to maintain the household at a subsistence level by minimizing the off-take of animals for cash sale and meat production. This strategy of the pastoralist was however wrongly analysed and interpreted, either as a desire for a large cattle herd to satisfy a certain social status in a society which is trans-humant or nomadic, or as a means of maximising the livestock population in order to benefit as much as possible in the common range resources. However, the rationale behind minimising the off-take of animals is for enabling the pastoralist to reconstitute his stock after droughts and diseases which are becoming recurrent at shorter intervals and widely spread than for prestige or taking maximum advantage of the common pasture.

52. The occurrence of drought and diseases at shorter intervals and the fact that they hit several parts of a country or several countries at the same time, has serious implications for the livestock industry. Firstly, many countries compete for insufficient external aid which is required for alleviating the effects of drought or diseases. Also managing the herd through nomadism and transhumance becomes more difficult as the natural ills repeat themselves more frequently. Furthermore, the strategy based on distribution of his stock among relatives living far away with a view to minimize the impact of a calamity becomes unjustified due to the wide spread nature of the calamities in recent years. Lastly, the short-interval between calamities has become insufficient for satisfying the reconstitution constraint which leads to a further reduction in the off-take of animals and a deterioration of the per caput consumption of livestock products and of self-sufficiency. The overall consequence is a further impoverishment of the human population and a total loss for the society despite the huge potential for developing livestock industry in Africa.

53. As there is an increasing need for better management of animals, rangeland and water resources in which livestock production by the pastoralist depends, these resources should be owned by him through the evolution of a land-tenure system under which he will be responsible for the management of the resources. The reform in land ownership should not be experimental or temporary and it should not be limited in coverage, particularly in areas free of tse-tse flies and where there are comparative advantages in breeding (arid zones). In order to increase the chances of success of the land reform, it is desirable to carry it out simultaneously in neighbouring countries of the ACAB zone. Also the land reform should be designed in

such a way that the sensitivity of livestock production systems to the occurrences of drought and diseases is lessened. In this way, the risk averse attitude of the pastoralist will be considerably minimized.

54. The benefit of such a reform to the countries concerned lies in the increase in the production of quality meat. Output of meat would also be controlled and planned easily and this should lead to the elimination of seasonal variations in the supply of livestock for the market. Furthermore, the reform in the management of resources by the pastoralist should lead to the achievement of a better balance between range resources and stock numbers making the herd more dynamic efficient and productive. There would also be more efficient use of scarce resources, particularly water, forage and animal health services. The improvement in resource management by the pastoralist would lay the foundations for self-reliance and self-sustaining development of the livestock sector in Africa by creating a proper framework for mobilizing the financial resources of pastoralists for financing water and range development programmes and animal health services. In this way, the obligations of governments to allocate funds and personnel for the development of the livestock sector would be considerably reduced. Also, financial institutions, whether local or foreign, will then have a proper incentive for investing in the African livestock sector and guarantee for returns on their investments.

E. Control and eradication of animal diseases

55. In the FTA subregion considerable efforts have been directed in the creation of infrastructure for extending animal health services and in providing animal health care. And yet the subregion is still plagued with a number of diseases and wide areas of rangeland with considerable potential for livestock production are infested by tse tse flies.

56. The prevalence of animal diseases results in the reinforcement of the reconstitution objective of the pastoralist who tends to build up the stock and maintain large numbers as a hedge against diseases, drought and other calamities. Although the contribution of animal health service to the alleviation of the reconstitution constraint is well known and appreciated by pastoralists, yet there are indications that they refuse to bring their animals for health care on some occasions. There are explanations for this attitude of the pastoralist and there lie in the attitude of the pastoralists which include the lack of confidence in the adequacy and continuity of the public animal health services. Also pastoralists may not trust the veterinarians as they are sometimes suspected of collaborating with tax collectors. Furthermore the fees whether official or unofficial are very often too high. Lastly there is no economic incentive to protect animals through governmental animal health services as compared to traditional methods.

57. The prevalence of animal diseases lead to low productivity of stock and to substantial post-harvest losses, particularly at the slaughterhouse stage. The resulting loss in revenue is often shared by the butcher, merchant and the producer. Furthermore, the presence of diseases in a country may restrict the access of its animals and meat to foreign markets.

58. There are indications that if the present stock of knowledge is efficiently applied and the animal health delivery systems are improved there would be a significant progress in reducing losses in both animal productivity and post-harvest losses in animal production. As the demand for animal health services is usually great, it is suggested that some fees be charged to pastoralists. Private distributors of medicines and delivery of health care should also be encouraged in order to increase efficiency and reduce the burden on government budget. Furthermore, to realize the full advantage of animal health services they should be integrated with water and range development programmes. There is also a need for closer collaboration and co-operation of the subregion in the field of animal disease control and eradication.

IV. Issues discussed and conclusions

59. The potential for increased production of livestock products and by-products at low cost exists in the PTA subregion, particularly in the exporting countries. Also the demand prospects for these products are great at national, subregional and international levels. Despite considerable efforts in designing and implementing policies and programmes aimed at realizing these potentials, the livestock resources of the PTA subregion remain largely undeveloped. Moreover, there are indications that the performance of livestock development programmes in the PTA subregion has in general not attained its minimum objectives.

60. In the light of the findings and conclusions of the present study, unless radical measures are taken and necessary adjustments are made at national, subregional and regional levels to reverse the unfavourable trends the performance of the livestock sector would even worsen since the occurrence of droughts and killer diseases at shorter intervals seriously limit the ability of pastoralists to reconstitute the stock. As a consequence the SSR, the PCS and the contribution of the livestock sector to the national economy will further deteriorate.

6. In analysing past trends, it was found that the policy issues were at the heart of the disappointing performance of the livestock sector, because the available manpower, although limited, is often underutilized. The stock of technical knowledge for improving livestock productivity and marketing efficiency are enough now to mobilize part of the production and marketing potentials for substantial increases in output. What is lacking are the policies to enable this mobilization.

62. The following are the issues being emphasized in the present chapter:

(a) In view of the large potential for increased production and trade in livestock and meat and contribution of livestock sector to the GDP and balance of payments of many member countries, more attention should be paid to this sector within FTA activities;

(b) As FTA member countries are suffering from the world economic crisis and a series of natural and other calamities, notably drought and rinderpest, which continues to decimate livestock the interventions in regard to the sector need to be reoriented. This reorientation should aim at creating a solid foundation on which substantial and constant expansion of output can be derived through higher and optimal utilization rates of all resources available at national, subregional and regional levels particularly animal resources, range resources, human resources and financial resources. It should also aim at lower production cost while providing reasonable returns to all factors of production, and appropriate regulations and control measures at the levels of production, marketing and distribution of livestock products and by-products. To facilitate these a series of measures and actions are suggested at national and subregional levels.

At national level

It is essential to evolve policies which will induce and ensure the progressive and active participation of pastoralists in their own development and narrow the difference in the objectives and strategies of pastoralists and governments vis-a-vis livestock development. These will include:

- (i) the design of an appropriate land tenure system whereby the management of basic resources (water and pastures) required for livestock production would be under the exclusive responsibility of known household pastoralists either as individuals or group;
- (ii) the provision of the required services and the development of physical resources at a levy instead of the present system of taxing the pastoralists on heads of animals without rendering continuous and adequate services;
- (iii) the design and enforcement of regulations which will ensure a proper balance between livestock and land and restrict the movement of animals outside of the owners demarcated land and;
- (iv) the provision of economic incentives for the fattening of young feeders and culled animals, in areas with comparative advantage in intensive production and cropping, before entering the slaughter houses.

At subregional level

In order to facilitate the integration of production and marketing activities of livestock products and by-products, bearing in mind the principle of comparative advantage in production and trade, the complementarity and solidarity between member States and the declared will of governments to promote both production and trade of quality livestock products in the PTA subregion, the following measures are suggested:

- (i) the organization of workshops with a view to evaluating livestock development policies and strategies and to proposing practical solutions to the problem of livestock development at national and subregional levels. Participants to these workshops should be mainly livestock policy analysts and planners, animal health and production specialists, producers and others involved in the transformation, distribution and marketing of livestock products and by-products. The present report, once amended and approved by the meeting, may serve as background document to the workshop;
- (ii) the development of appropriate institutions and mechanisms to support national efforts and to ensure that the policies and programmes of member States support one another so as to avoid obstruction or conflicts of interests and wastage of the scarce resources of the subregion. These may include:
 - the creation of joint Livestock Development Fund (LDF) to serve in emergency cases such as drought and killer diseases, for financing projects and programmes particularly joint production and marketing ventures of livestock products, feeds, equipments and other required inputs between governments and or private individuals of importing and or exporting countries, and for financing activities related to the building of institutional capabilities at the national and subregional levels;
 - the development of an effective programming capability of the livestock sector including the collection, analysis and dissemination of biological, physical and economic data on a permanent basis and the use of powerful analytical tools for the effective planning, monitoring and evaluation of livestock development within the subregion;
 - in order to take full advantage of trading opportunities within the subregion, the harmonization of pricing policies including the establishment of a co-ordinated price systems and of a marketing information system and the use of proper identification card for exported animals are essential. Also there is need to design and implement a system of barter trade in order to reduce the need for using only

convertible currency. Furthermore long-term purchase contract at government and private sector levels should be encouraged;

- the development of arrangements between member countries in period of calamities by which:
 - o the countries not affected by a drought will supply feeds to the affected countries and or permit the animals of affected countries to graze on their pasture lands,
 - o countries which have processing facilities of meat will process the emaciated animals of the drought affected countries,
 - o the manpower, equipments, infrastructure and other resources of the subregion be pooled and mobilized to the full for combating killer diseases in a single or group of affected countries, and
 - o countries will assist each other in replacing herds depleted by drought or diseases,
- the harmonization and co-ordination of research and training policies with a view to pooling resources for optimal results; and
- the harmonization of veterinary regulations and controls to facilitate intra-subregional trade of livestock products and by-products.

Table 1: The Contribution of Agricultural and Livestock sector in Total Exports in PTA Subregion 1970 and 1981^{1/}

	Total Exports (Million US\$)		Share of Agricultural Products in Total Exports (%)		Share of Livestock Products in Total Exports (%)		Share of Livestock Products in Agr. Exports (%)	
	1970	1981	1970	1981	1970	1981	1970	1981
<u>Exporting Countries</u>								
Ethiopia	122.0	374.2	92	86	8.1	15.6	8.8	18.1
Kenya	304.9	1192.5	58.2	48.5	1.0	1.0	1.7	2.1
Lesotho	5.9	50.0	95.1	30	65.5	12.0	70.0	40.1
Rwanda	24.2	85.0	64.2	78.2	4.0	-	6.2	-
Swaziland	70.5	320	42.2	55.8	3.4	2.6	8.1	4.6
Somalia	31.4	200.0	95.0	82.5	64.1	78.2	67.5	94.8
Zimbabwe	367.1	170.0	33.5	35.4	4.4	1.5	13.3	4.1
<u>Importing Countries</u>								
Burundi	25.0	71.2	95.0	94.0	2.1	.3	2.2	.3
Comoros	5.0	18.0	63.4	81.7	-	-	-	-
Djibouti	10.0	24.0	5.0	-	-	-	-	-
Malawi	59.6	285.4	84.5	86.3	-	-	-	-
Mauritius	69.2	32.6	95.2	63.5	-	-	-	-
Uganda	233.5	139.1	82.3	86.9	1.4	6.4	1.7	7.4
Zambia	949.6	1267.4	.8	.5	8.3	.9

Source: FAO Interlinked Computer System 1983 and ECA

^{1/} The value is calculated for the last three years, using constant 1969-71 average prices.

Table 2: The Share of Agricultural and Livestock Sector in Total Import in PTA subregion 1970 and 1981^{1/}

	Total Imports (Million US\$)		Share of Agricultural Products in Total Import (%)		Share of Livestock Products in Total Imports (%)		Share of Livestock Products in Agri. Imports (%)	
	1970	1981	1970	1981	1980	1981	1970	1981
<u>Exporting countries</u>								
Ethiopia	17.2	738.3	9.8	9.9	0.9	0.2	9.6	20.5
Kenya	442.4	2072.8	11.2	11.1	.1	.5	1.3	4.7
Lesotho	32.0	380.0	36.7	25.0	3.6	4.2	9.9	16.9
Rwanda	29.1	270	14.0	9.5	-	2.9	-	19.2
Swaziland	59.9	700	16.5	38.7	22.3	11.7	3.7	30.3
Somalia	45.1	199.2	16.3	92.5	.1	5.9	.2	6.4
Zimbabwe	328.8	1344.9	3.1	3.1	.1	.6	3.0	18.2
<u>Importing countries</u>								
Burundi	22.0	167.0	18	16	1.9	2.0	10.3	12.2
Comoros	9.0	30.0	29	44	2.5	6.8	8.6	15.5
Djibouti	38.0	135.8	17.5	31.0	-	4.9	-	15.7
Malawi	99.0	364.3	12.6	17.1	1.1	1.7	9.1	9.8
Mauritius	75.6	553.0	34.7	29.5	1.9	3.3	5.6	11.3
Uganda	171.9	350.0	12.4	7.6	2.5	3.6	20.0	47.3
Zambia	477	1168.2	10.1	7.5	2.6	.5	25.4	6.7

Source: FAO Interlinked Computer System and ECA

1/ The value is calculated for the last three years, using constant 1969-71 average prices.

Table 3: Livestock Population of the PTA Sub-Region, 1971 to 1982

1000 head/unit

Category	1971/73 ^{a/}	1974/76 ^{a/}	1977/79 ^{a/}	1980	1981	1982	Percentage Change 1972 - 1982
Cattle	54,061	55,348	56,547	55,612	55,766	57,301	+ 6.0
Sheep	40,786	39,610	40,739	42,127	43,429	43,905	+ 7.6
Goats	44,027	43,775	47,500	48,413	48,025	48,856	+11.0
Camels	2,015	2,171	2,153	2,188	2,206	2,222	+10.3
Pigs	808	998	1,123	1,151	1,240	1,305	+61.5
Horses	1,551	1,609	1,644	1,653	1,675	1,677	+ 8.1

^{a/} These figures are average of the three years

Source: FAO Computer Print Out, 1984 and ECA

Table 4: Cattle Population of the PTA Sub-Region and Share of Each Country

	1971 to 1982 1000 head/unit						Share (%)	
	1971/73	1974/76	1977/79	1980	1981	1982	1972	1982
<u>Exporting Countries</u>	46,720	47,228	47,802	47,062	46,913	48,387	86.4	84.4
Ethiopia	26,567	26,086	25,806	26,000	26,100	26,200	49.1	45.7
Kenya	9,100	9,609	10,351	10,000	9,800	11,000	16.8	19.2
Lesotho	459	500	560	590	570	562	0.9	1.0
Rwanda	744	677	636	635	640	650	1.4	1.1
Swaziland	588	621	646	658	670	675	1.1	1.1
Senegal	3,667	3,665	3,733	3,900	3,950	4,000	6.8	7.0
Zimbabwe	5,595	6,060	6,070	5,279	5,286	5,300	10.4	9.3
<u>Importing Countries</u>	7,341	8,120	8,745	8,550	8,853	8,914	13.6	15.6
Burundi	721	774	803	600	600	548	1.3	1.0
Comoros	68	73	76	78	79	81	0.1	0.1
Djibouti	23	27	37	42	42	43	0.04	0.1
Malawi	535	658	751	823	850	880	1.0	1.5
Mauritius	49	52	55	56	57	57	0.1	0.1
Uganda	4,281	4,745	5,095	4,800	5,000	5,000	7.9	8.7
Zambia	1,664	1,791	1,962	2,151	2,225	2,305	3.1	4.1
PTA sub-region	54,061	55,348	56,547	55,612	55,766	57,301	100.0	100.0

Source: FAO Computer Print Out 1984 and ECA.

Table 5: Annual growth rates, off-take rates and productivity indices for cattle in the exporting and importing countries and PTA subregion: 1972/1982 (Unit: per cent)

	1972/75	1975/78	1978/80	1980/82	1981	1972/82
1. <u>Growth rates a/</u>						
Exporting countries	0.3	0.3	-0.5	0.9	-	0.4
Importing countries	2.6	1.9	-0.7	1.4	-	1.8
PTA subregion	0.6	0.6	-0.5	1.0	-	0.5
2. <u>Off-take rates b/</u>						
Exporting countries	8.9	8.2	10.3	10.1	10.2	-
Importing countries	8.8	12.3	9.7	11.7	10.7	-
PTA subregion	8.9	8.8	10.2	10.3	10.3	-
3. <u>Productivity indices c/</u>						
Exporting countries	9.2	8.5	9.8	11.0	-	-
Importing countries	11.4	14.2	9.0	13.1	-	-
PTA subregion	9.5	9.4	9.7	11.3	-	-

Source: a/ Based on Table 4

b/ FAO Computer Printout and ECA

c/ ECA

Table 6: Sheep Population of PTA Sub-Region and Share of Each Country: 1971-1982

1000 head/unit

	1971/73	1974/76	1977/79	1980	1981	1982	Share (%)	
							1972	1982
<u>Exporting Countries</u>	39,269	37,925	38,924	40,233	41,545	41,987	96.3	95.7
Ethiopia	23,647	23,200	23,150	23,250	23,300	23,350	58.0	53.2
Kenya	3,700	3,068	3,926	5,000	6,000	6,200	9.1	14.1
Lesotho	1,646	1,411	987	1,168	1,250	1,337	4.0	3.1
Rwanda	211	236	268	296	300	310	0.5	0.7
Swaziland	39	33	33	32	36	40	0.1	0.1
Somalia	9,267	9,246	9,900	10,100	10,200	10,300	22.7	23.5
Zimbabwe	759	731	660	387	459	450	1.9	1.0
<u>Importing Countries</u>	1,517	1,685	1,815	1,894	1,884	1,918	3.7	4.3
Burundi	271	309	285	316	304	320	0.7	0.7
Comoros	6	7	8	8	8	8	.0	.0
Djibouti	267	283	333	370	370	380	0.6	0.9
Malawi	80	82	83	89	88	90	0.2	0.2
Mauritius	3	3	4	4	4	4	.0	.0
Uganda	857	973	1,070	1,072	1,075	1,078	2.1	2.4
Zambia	33	28	32	35	35	38	0.1	0.1
<u>PTA Sub-Region</u>	40,786	39,610	40,739	42,127	43,429	43,905	100.0	100.0

Source: FAO Computer Print Out, 1984 and ECA.

Table 7: Animal growth rates, off-take rates and productivity indices for sheep in the exporting and importing countries and the PTA subregion: 1972/1982 (Unit: per cent)

	Exporting countries	Importing countries	PTA Subregion
<u>Growth rates a/</u>			
1972/1975	-0.8	2.2	-0.8
1975/1978	0.7	1.7	0.7
1978/1980	1.1	3.3	1.1
1980/1982	1.4	1.0	1.4
1978/1982	0.6	2.6	0.6
<u>Off-take rates b/</u>			
1972	31.4	32.4	31.4
1981	33.7	30.1	33.6
<u>Productivity indices c/</u>			
1972	30.6	32.6	30.6
1981	35.1	31.1	35.0
Percentage change			
1972-1981	+14.7	-10.1	14.4

Source: a/ Based on Table 6

b/ FAO Computer Printout and ECA

c/ ECA

Table 8: Goat Population of the PTA Sub-Region and Share of Each Country

	1971/73-1982						Share (%)	
	1971/73	1974/76	1977/79	1980	1981	1982	1972	1982
<u>Exporting Countries</u>	40,491	40,010	44,097	44,417	43,933	44,730	91.9	91.7
Ethiopia	17,619	17,314	17,123	17,180	17,200	17,220	40.0	35.2
Kenya	4,067	4,167	7,394	8,000	7,000	7,500	9.2	15.4
Lesotho	942	779	662	767	820	930	2.1	1.9
Rwanda	549	625	778	885	850	800	1.3	1.7
Swaziland	260	249	266	303	320	330	0.7	0.7
Somalia	15,167	14,967	16,167	16,300	16,500	16,700	34.4	34.2
Zimbabwe	1,887	1,909	1,707	982	1,243	1,250	4.2	2.6
<u>Importing Countries</u>	3,536	3,765	3,403	3,996	4,092	4,126	8.1	8.3
Burundi	546	646	581	657	737	750	1.3	1.5
Comoros	81	83	85	87	87	88	0.1	0.2
Djibouti	51	51	51	53	53	54	0.1	0.1
Malawi	613	703	761	650	650	656	1.4	1.3
Mauritius	63	66	69	70	70	70	0.1	0.1
Uganda	1,917	1,940	1,539	2,155	2,160	2,165	4.5	4.4
Zambia	265	276	317	324	335	343	0.6	0.7
<u>PTA Sub-Region</u>	44,027	43,775	47,500	48,413	48,025	48,856	100.0	100.0

Source: FAO Computer Print Out, 1984 and ECA.

Table 9: Annual growth rates, off-take and productivity indices for goats in exporting and importing countries and the PTA subregion 1972/1982 (Unit: per cent)

	Exporting countries	Importing countries	PTA Subregion
<u>Growth rates a/</u>			
1972/1975	-0.3	3.1	-0.1
1975/1978	2.0	1.9	2.8
1978/1980	0.6	1.1	0.6
1980/1982	0.3	0.4	0.3
1972/1982	0.9	2.2	0.9
<u>Off-take rates b/</u>			
1972	29.5	28.6	29.5
1981	32.0	30.1	31.9
<u>Productivity indices c/</u>			
1972	29.2	31.7	29.4
1981	32.9	32.3	32.8
<u>Percentage change</u>			
1972-1981	12.7	1.9	11.6

Source: a/ Based on Table 8

b/ FAO Computer Printout and ECA

c/ ECA

Table 10: SSR and PCS by group of countries and selected type of meat in 1970 and 1981

SSR 1970 <u>a/</u> Classes	Medium of each class	Total Meat			Beef			Mutton		
		Exp.	Imp.	PTA	Exp.	Imp.	PTA	Exp.	Imp.	PTA
13-50	31.5		1	1	-	1	1	-	1	1
50-75	62.5	-	-	-	-	2	2	-	1	1
75-100	87.5	-	4	4	-	3	3	1	2	3
100-125	112.5	6	1	7	5	-	5	5	2	7
125-176	150.5	1	-	1	2	-	2	1	-	1
Average		118	71	101	123	70	99	114	82	100
<u>SSR 1981 a/</u>										
13-50	31.5	-	1	1	-	1	1	-	1	1
50-75	62.5	-	-	-	1	1	2	-	-	-
75-100	87.5	1	2	3	-	1	1	1	1	2
100-125	112.5	5	3	8	6	3	9	5	4	9
125-176	150.5	1	-	1	-	-	-	1	-	1
Average		114	91	103	105	87	97	114	95	105
<u>PCS 1970 b/</u>										
2-5	2.6	1	1	2	1	3	4	3	6	9
5-10	7.5	-	3	3	2	3	5	2	-	2
10-15	12.5	2	2	4	2	-	2	-	-	-
15-20	17.5	2	-	2	1	-	1	-	-	-
20-30	25	-	-	-	1	-	1	1	-	1
30-37	35.5	2	-	2	-	-	-	-	-	-
Average		19	8	14	12	5	9	8	2.6	5

a/ in percentage

Exp. = export

PTA = Preferential Trade Area

b/ in kg/head

Imp. = Import

Table 10: cont'd... SSR and PCS by group of countries and selected type of meat in 1970 and 1981

SSR 1970 ^{a/} Classes	Medium of each class	Total meat			Beef			mutton		
		Exp.	Imp.	PTA	Exp.	Imp.	PTA	Exp.	Imp.	PTA
<u>PCS 1981 b/</u>										
2-5	2.6	1	-	1	1	3	4	4	6	10
5-10	7.5	-	4	4	4	3	7	1	-	1
10-15	12.5	2	2	4	1	-	1	1	-	1
15-20	17.5	2	-	2	-	-	-	-	-	-
20-30	25	1	-	1	1	-	1	-	-	-
30-37	35.5	1	-	1	-	-	-	-	-	-
Average		18	9	14	10	5	7	5	3	4

Source: FAO Computer Printout 1984 and ECA

Table 11: Self-sufficiency ratio (SSR) and per caput supply (PCS)
of total meat 1970-1981

	SSR (%)				PCS (kg/head)			
	1970	1975	1980	1981	1970	1975	1980	1981
<u>Exporting Countries</u>								
Ethiopia	101	103	101	101	18	13	13	13
Kenya	103	106	101	101	15	14	16	17
Lesotho	117	105	81	82	14	14	15	15
Rwanda	111	127	100	100	3	4	4	4
Swaziland	101	104	93	100	31	33	36	34
Somalia	122	129	127	126	37	33	24	24
Zimbabwe	151	164	119	103	14	12	12	11
<u>Importing Countries</u>								
Burundi	102	107	100	100	4	4	5	5
Comoros	82	93	62	78	7	7	11	9
Djibouti	-	-	-	-	-	-	-	-
Malawi	97	97	98	99	5	5	5	5
Mauritius	38	52	43	48	7	10	14	14
Uganda	96	99	100	100	10	10	9	9
Zambia	83	93	100	100	11	11	10	10
<u>PTA Subregion</u>								
Minimum value	38	52	43	48	3	4	4	4
Maximum value	151	164	127	126	37	33	36	34

Source: FAO Computer Printout, 1984

Table 12: Self-sufficiency ratio (SSR) and per caput supply (PCS)
of total beef 1970-1981

	SSR (%)				PCS (kg/head)			
	1970	1975	1980	1981	1970	1975	1980	1981
<u>Exporting countries</u>								
Ethiopia	102	105	102	101	10.3	6.7	6.7	6.9
Kenya	112	102	100	100	11.2	9.1	11.6	12.1
Lesotho	130	109	69	70	7.8	7.6	8.1	8.1
Rwanda	105	134	100	100	1.8	2.6	2.5	2.5
Swaziland	102	105	91	100	24.7	25.2	28.4	26.6
Somalia	119	124	123	123	15.1	12.4	9.6	9.4
Zimbabwe	176	201	125	104	9.5	7.2	8.7	8.1
<u>Importing countries</u>								
Burundi	102	111	100	100	2.6	2.9	2.5	2.4
Comoros	76	91	56	73	5.1	5.6	9.1	6.9
Djibouti	-	-	-	-	-	-	-	-
Malawi	96	96	99	99	1.8	1.8	1.9	1.9
Mauritius	25	31	9	18	3.2	3.5	5.1	4.6
Uganda	97	99	100	100	6.7	7.1	6.0	6.1
Zambia	82	90	100	100	7.8	5.9	5.2	5.4
<u>PTA subregion</u>								
Minimum value	25	31	9	18	1.8	1.8	1.9	1.9
Maximum value	176	201	125	123	24.7	25.2	28.4	26.7

Source: FAO Computer Printout, 1984

Table 13: Self-sufficiency Ratio (SSR) and per Caput Supply (PCS) of Mutton 1970 - 1981

	SSR (%)				PCS (kg/head)			
	1970	1975	1980	1981	1970	1975	1980	1981
<u>Exporting Countries</u>								
Ethiopia	100	101	100	100	5.4	4.3	4.5	4.5
Kenya	103	100	100	100	2.3	2.0	2.4	2.4
Lesotho	101	100	92	92	4.1	4.2	4.2	4.3
Rwanda	103	102	100	100	0.6	0.7	0.8	0.8
Swaziland	96	101	100	100	5.0	5.7	5.3	5.3
Somalia	126	133	131	130	21.0	19.5	14.1	13.5
Zimbabwe	100	99	98	100	-	-	-	-
<u>Importing Countries</u>								
Burundi	103	102	102	102	0.7	0.8	0.8	0.8
Comoros	100	100	100	100	1.0	0.9	0.9	0.8
Djibouti	-	-	-	-	-	-	-	-
Malawi	96	97	99	99	0.6	0.5	0.4	0.4
Mauritius	16	9	11	13	1.5	2.2	2.0	1.9
Uganda	93	98	100	100	1.1	0.9	1.1	1.1
Zambia	70	98	100	100	0.3	0.2	0.2	0.2
<u>FTA Sub-Region</u>								
Minimum value	16	9	11	13	0.3	0.2	0.2	0.2
Maximum value	126	133	131	130	21.0	19.5	14.1	13.5

Source: FAO Computer Print Out, 1984