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THE LIVESTOCK INDUSTRY: ITS CHANGING PATTERN IN SUBSISTENCE
FARMING AND EAST AFRICAN DEVELOPMENT.

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1. Introduction:-

It is widely recognised that East Africa is essentially an agricultural country although recently industrialization, especially in the processing sector of primary agricultural products, has received great attention. Except in certain areas of Kenya and Tanzania highlands and isolated estates of plantation crops such as tea, sisal, coffee and sugar, the bulk of East African agriculture is subsistence in character.

2. Subsistence farming:-

Subsistence economics is enjoying a revival among economists who use the term to mean both a measure of orientation to the market and as an index to poverty. More recently the use of the term "subsistence production" has been taken to mean the character of production and its degree of monetization or commercialisation, while the term "subsistence living" is meant to refer to the absolute level of living which is a minimum in the sense of survival.

The most interesting feature of pure subsistence unit is the close relationship between farm and home or simply production and consumption; they are inherently a unified process. Admittedly the pure subsistence situation rarely exists since the picture is one of various degrees of subsistence representing a continuation from pure subsistence at one extreme to pure commercialisation at the other. For the purpose of this paper, the term "subsistence production" will be used to describe a situation the fruits of an individual or group production effort are directed more towards meeting immediate consumption needs out of production without any intermediaries or exchange, while "subsistence living" will be used to denote levels of living which can best be described as abysmal poverty. It is, however,

possible to find subsistence production areas where the level of living is fairly high, so that the two need go hand in hand.

3. The changing pattern of agriculture:-

Throughout East Africa the peasant farmers who mainly practise subsistence farming range from settled agriculturists with or without livestock to purely livestock owners who live a nomadic way of life. In between these there are various stages of development.

3.1. Livestock under shifting cultivation:- One form of land cultivation in East Africa for a long time has been shifting cultivation. Under this system virgin land is cultivated for a number of years following a definite crop sequence characteristic of each area and when crop yields begin to decline a new area is opened up leaving the previously cultivated area to revert to "bush fallow". The chief characteristics of this system are:-

- (a) if livestock are kept at all, there is no attempt to integrate them into crop farming by, for example, utilizing cattle dung for manuring crops;
- (b) the "bush fallows" are not turned into proper pasture areas since they become communal grazing areas as soon as cultivation stops. On the other hand, these "bush fallows" may never assume the original vegetation of the area and soil compaction and erosion may set in with grazing;
- (c) the system of shifting cultivation is only possible under conditions where there are expanses of land.

Recently, with the increase in population both of human beings and livestock due to improved medical and veterinary services, pressure on land has increased with the result that the cultivation cycle has become more frequent. This means that farmers have come back to the previously cultivated land sooner than it is necessary for the soil to regain fertility thus forcing them to improve their cultural methods in order to maintain even subsistence production. Fertilizers and livestock dung are increasingly being used while ox-ploughing is gaining

ground in most parts of East Africa not only to ensure that land is prepared early so that crops are planted at the right time but also to enable more land to be cultivated.

3.2. Nomadic livestock keeping system:- The nomadic people of East Africa include among other such tribes as the Masai, Turkana and Karamojong. These people move from place to place in search of pasture for their livestock upon which their livelihood depends. The main characteristics of this system are:-

- (a) large numbers of livestock are kept since to these nomadic people the larger the size of herd the greater is the social prestige. In an effort to maintain large stock numbers tribal warfares are not uncommon among these people particularly after natural hazards such as severe drought and epidemic diseases have taken the lives of several stock. In certain areas of East Africa livestock thefts in organised Agricultural areas are on the increase thus forming an unpleasant background for the development of East Africa;
- (b) because stock numbers and not quality are preferred these animals do not produce enough in terms of growth rate or milk yield. The quality of meat cannot compete on the world market to earn the badly needed foreign exchange for the development of East Africa.

If the livestock industry in the nomadic areas is to play its part in the development of East Africa overstocking must be prevented by destocking and offering economic incentives of quality premiums and readily available marketing facilities. The availability of luxury goods such as transistor radios already beginning to have their effect of increasing the money consumption power of these people - a feature which is also a necessary inducement for increased production.

3.3. High yielding livestock breeds:- The indigenous livestock of East Africa are generally poor yielders in terms of growth rate, milk yield, egg production. The reasons are genetic as well as environmental especially feeding and management.

These livestock have not been selected for any particular characteristic and are therefore dual purpose. The cattle, for example, produce milk and also act as beasts of burden while they are alive and give meat when dead; this is a feature that is not uncommon in subsistence farming.

During the past decade or so several changes have taken place in certain areas of East Africa which have given incentive to the introduction of high yielding exotic livestock breeds into peasant farming circles:-

- (a) Land consolidation and farm planning:- the former has given security of land ownership to individual farmers while the latter has introduced a crop sequence suitable to each area which involves grass leys. Once the necessary security of land has given incentive to develop the land (sometimes at great costs) the tendency has been to introduce stock that are high yielding to meet the initial cost and make profit;
- (b) Control of disease:- Disease problem is one of the major setbacks to the livestock industry. There is the direct effect of disease of the cost of livestock that die from it and the indirect effect of reduced production for the animals that get disease but do not die from it. Some of the local cattle are resistant to local diseases particularly those caused by ticks. The eradication of ticks and tsetse flies has helped open up large areas for the introduction of less resistant high producing exotic livestock breeds;
- (c) Drop in world market prices of "cash" crops:- It is a well-known fact that the prices of primary products which enter world market are subject to violent fluctuations. On the producer side, there is the fluctuation of supply caused by unpredictable natural hazards of weather and disease while on the consumer side there is the tendency to resist increased price by substituting natural products with synthetics with technological advance. The tastes of the consumers also vary from time to time. In East Africa coffee has suffered most with the result that the desire to diversity enterprises even at peasant level

has been great. Money previously earned from "cash" crops has been invested in livestock. In Buganda where the price of a gallon of milk is as high as 4/- there has been an influx of high yielding dairy cattle breeds from Kenya;

(d) The use of artificial insemination:- The art of A.I. is not a new one in the world since it was used by Arabs in the olden days for their horses. After the first scientific experiments in 1780 and the impetus it was given in Russia, after the first world war, to overcome diseases transmitted by natural service in the rehabilitation of the country's cattle and horses the A.I. practice has caught up in most parts of the world. In East Africa it has enabled farmers to make use of the semen from proven bulls from centres such as Entebbe, Kabete and Mpwapwa; for breeding heifer replacements. The cost of obtaining and maintaining such bulls would otherwise be beyond the financial resources of the peasant farmers.

4. General problems facing the livestock industry:-

The transformation of the nomadic livestock keeping system to say organised ranching, shifting cultivation to fully integrated mixed farming or, the introduction of high yielding livestock breeds would not solve the problems facing the livestock industry in East Africa. There are nutritional, marketing and social problems, only to mention but a few, inherent in this area which must be examined.

4.1. Feeding and management:-

All production characteristics of economic importance in farm animals are both hereditary and environmental. Each trait is the end result of interaction of genes with each other, with the environment and, with the intermediate products at each stage of development. For example, the amount of milk yielded by a dairy cow is only 25% hereditary; it is in part an innate characteristic of the individual animal, in part reflects a whole host of neural and hormonal factors concerned with the way in which milk is removed from the mammary gland, and in part influenced by the amount of food she is given. Feeding and management must be optimum if high milk yields are to be obtained.

In poultry important production traits such as egg number (uncomplicated by mortality) and viability are less influenced by the genes the birds have than environment of which nutrition is important.

The marked seasonal fluctuations in herbage availability coupled with a general lack of fodder conservation and supplementary feeding in subsistence agriculture are major setbacks to the livestock industry in East Africa. The pastures here pose unique problems such as the rapid deterioration in quality and the dominance of unpalatable grass species where management is not very good. Unlike the developed countries, most nutritional deficiencies of livestock in East Africa have not been investigated. There is therefore great need for research into feeding and management problems facing the livestock industry if the industry is to play its full share in the development of East Africa. While there is need for basic research emphasis should be placed on applied research; more use being made of basic research results obtained in countries that can afford it.

4.2. Religious and social customs:-

The preference by nomads for livestock numbers rather than quality, the need to keep extra livestock in some tribes to pay pride price, and the complete dislike by certain religions of certain animals affect in one way or the other the development of the livestock industry. Fortunately social customs are changing faster than is generally realised.

4.3. Marketing:-

An efficient marketing system is essential if production is to be increased and maintained. However, the perishable nature of most livestock products in a hot and humid environment such as the one that obtains in most parts of East Africa is a problem. Furthermore, the livestock industry is faced with the restrictions of import licences in certain consuming countries for fear of introducing some epidemic diseases into these areas. Rinderpest, for example, has in the past restricted East African meat exports to Europe.

4.4. Extension Service:-

Among the features of modern agriculture which are influencing extension work are the high rate at which technical innovations are being introduced, the difficulty of determining their economic value to individual farmers and the social effects of changes in farming methods. Thus, while the farm adviser on livestock production must still be technically competent he is becoming increasingly involved with social as well as technical and economic problems; the rapid development of the livestock industry in East Africa is therefore dependent upon full co-operation among all these disciplines.

Reference:-

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