

# Analysis of Animal Production Problems in Somalia

MOHAMED SHEIKH MOHAMUD MOHAMED

*Somali National University - Mogadishu*

## Introduction

The Somaliland occupies an area of about 638,000 Sq. Km of predominantly arid and semi-arid rangelands. Of the total land area, about 13% (nearly 8 million ha) are classified as cultivable, about 45% (29 million ha) as range suitable for extensive livestock production and the remainder as non-agricultural.

The population density is about 8 per Sq. Km, which is the lower end of the scale for African countries.

The livestock sector is the most important part of the whole Somali economy. 60% of the population are pastoralists depending almost entirely on livestock for their existence as a source of meat, milk and money. A further 20% of the population are involved in agricultural activities and depend partially on livestock for their livelihood. The total animal population equals to 18,875,000 Animals Units according to F.A.O. standards.

The livestock sector is the largest export earner contributing 86% in 1981 and 81% in 1982 of the total value of exports. In the late 1983 and 1984 adverse weather conditions have reduced food production and livestock exports have been curtailed by a Saudi Arabian import embargo. This caused the value of livestock export earning to drop in 1983 to U.S. \$ 72 million and in 1984 to U.S. \$ 35 million from the U.S. \$ 106 million in 1982. This is having a severe effect on the economy as a whole and contributed to the devaluation of the Somali currency.

Is it so simple to attribute the economic shortfalls, state of poverty and underdevelopment in Somalia or the whole of Africa, to the vagaries of weather and disease outbreaks or do the real causes fall beyond such superficial interpretations? How may other causes interact and contribute?

Some sources citing F.A.O. figures argue that per capita food production, in Africa, has been stagnating prior to the droughts and although the rains have returned food production failed to recover. This and the rapid population growth (especially in urban areas) has caused an ever increasing portion of scarce foreign exchange to be spent on food export in spite of the continent's economy depending on agriculture.

In order, to know the real, basic causes of the state of poverty and underdevelopment, there is a need to analyse the diverse obstacles in the agricultural sector from different views simultaneously and weigh their relative contributory effects to the economy. This paper tries to highlight a sensible approach to the study

of Somali's agricultural production problems in its broader sense and makes use of the livestock sector production constraints as an illustration in an effort to give the model some practical basis. The aim is to present the essentiality of having an overall vision of the various problems, their origine, interaction and contribution. Identifying the assumptions that inform different disciplinary perspectives is not the object of this proposal. The paper is presented on hypothetical terms.

In an analysis of the causes of developmental problems, there are three fundamental dimensions (Jonsson, 1981) to be considered:

- 1) The depth of the analysis. It is possible to distinguish this into four general levels:
  - a) Symptoms: Direct observable manifestations, e.g. Low productivity.
  - b) Immediate causes: e.g. Inadequacy in feedstuffs and water.
  - c) Underlying causes: e.g. Unequal access to services.
  - d) Basic causes: e.g. How potential resources are mobilized and distributed.
- 2) Categorization of basic causes:
  - a) Historical causes: e.g. colonialism, exploitation, wars, etc. This can be understood by analysing the ecology and political causes.
  - b) Ecological and technical causes: e.g. Natural resources, climate, technical know-how, etc.
  - c) Economic causes: Imperialism, exploitation, property relations, etc.
  - d) Ideological & cultural causes: ideology, religion, habits etc.
  - e) Political causes: Related to structure and function of the State.
- 3) Level at which the problem exists:
  - a) International level.
  - b) National level.
  - c) Area and village level, etc.

In this study, this type of analysis is applied to two systems of livestock production. They are classified on the basis of convenience and are as follows:

- I) Traditional pastoral sector, and
- II) Newly introduced or recently evolved systems of livestock production.

### **Traditional Pastoral sector**

Pastoral livestock production, based on Somali's rangelands is the country's most economic sector. The raising of livestock under the arid and frequently harsh environmental conditions has resulted in the evolution by selection of local breeds that are highly adapted to the often limited resources of water and feed available to them. The adaptation of livestock to this environment has been both enhanced and exploited by deliberate selection on the part of their owners and by the very considerable range of husbandry skills which have evolved in parallel among the pastoral peoples in the course of caring for the stocks.

The ecology of arid and semi-arid lands is very delicate. Seasonal and yearly droughts are common. The soils are deficient in organic matter, low in phosphorous and frequently poorly drained and have a hard subsoil.

As a consequence of the harsh climatic conditions with low seasonal (and often badly distributed) rains and high rates of evapotranspiration, most of the rangeland supports a relatively sparse flora of grasses, forbs and shrubs with few trees. Many of the grasses and herbs are annual species that grow, flower and seed in the short wet periods and rely on abundant seeding to maintain the species over

the intervening dry spells. The perennial shrubs and tree are generally zerophytic with adaptation to minimise transpiration water losses and often well protected from browsing stock by formidable thorns and unpalatable foliage. Due to seasonality of growth characterized by months of low nutritional value, animals experience fluctuating weigh losses.

The pastoral system with its seasonal movements of stock and people endeavour to optimise use of the limited and unreliable resources of the range but has distinct limitations as a production system, since it is also essentially a means of minimising the risks of livestock reared in an uncertain environment. Total utilization of the available forage resources is impossible without permanently damaging the range which is highly sensitive to overgrazing.

The maintenance of the delicate balance between stock and the range resource is the ultimate responsibility of the pastoralists. In the older traditional pastoral systems these management skills were part of the cultural and customary inheritance of each succeeding generation. Periods of foraging in any particular section of the range were restricted and the number of stock assigned to a given grazing land was limited. Portions of the rangeland area was set aside for the use at particular seasons of the year and specially for the maintenance of the main breeding herd during the long dry season of the *Jilaal*. In this period fights in the lean seasons and years for the limited range were common. But in recent decades laws were passed that established grazing lands as common and owned by the people.

That and the pressures of a developing market economy have eroded the traditional balance with serious consequences for the range. Furthermore, the systematic introduction of veterinary medicine and the provision of large scale watering points weakened the natural balance. As a result, stocking rates are high and overgrazing is causing serious deterioration in the rangelands.

In fact feedstuff availability is extremely reducing in respect to animal requirements of the present stock. The obtainable quality feeds (from natural grazing lands and major by-products) is nearly 4.5 million tons/year of TDN, while the estimated compressive animal requirements sum up to nearly 16 million. Even admitting the use of other feeding sources not reported or unknown and the underestimation of the nutritive quality of feeds considered, it is certain that animals are undernourished (Cianci et alii 1983).

The pastoral system which remains a dominant feature of Somali agricultural economy has a fundamental complexity. Its successful continuity and possible development depend essentially, on the adaptability of the nomads and their stock to a multitude of challenges presented by the environment and the changing nature of the national economy.

Other limiting factors of the Somali agricultural development are not confined to the pastoral economy as to their complexity, origins, and the nature of their interacting contributions.

With regard to policy and planning issues, the trend has been inclined to the removal of resources from the agricultural sector (pastoral & rural) to the urban manufacturing and service sectors (see Table 1 referring to livestock sector below).

Table 1 - Allocation & implementation of development plans  
in respect to livestock sector (1963-1981).

| DEVELOPMENTAL PLANS              | 63-67 | 68-70 | 71-73 | 74-78 | 79-81 |
|----------------------------------|-------|-------|-------|-------|-------|
| % Allocated to live-stock sector | I     | 6.5   | 5.9   | 4.2   | 8.9   |
| % Implemented                    | =     | 24.5  | 85.9  | 50    | 60    |

Source: Samatar 1984

This kind of trend creating lack of production incentive curtails the sector's productive potential.

Taxes on agriculture taking the form of export taxes or profits of parastatal marketing organizations may have a significantly depressing effect on farm gate prices, thus producing incentive. Other factors affecting incentives for increased production are maintaining an overvalued exchange rate, research and extension, the existence of efficient systems for delivering inputs and marketing output, the availability of land and labour and the impact of weather and climate.

The paradigm, here, can be identified as two contrasting views. On the one hand if the government does not interfere drastically with price mechanism or with the operation of the market, it appears to have a favourable prospect of achieving a productive agricultural economy. But such policies seem inevitably to entail serious negative social and political consequences (e.g. social inequality, landlessness, urban unemployment, high level of political instability that emerges when inequalities operate etc.). On the other hand economic policies whose purpose is to ameliorate social and political problems and to promote greater social equality seem to involve strongly adverse consequences for the agricultural production. One must confront a trade-off between policies to promote agricultural efficiency and programs to promote human welfare.

On the international level the causes of the third world underdevelopment can be interpreted on the basis of two politically conflicting spheres of influence (Marxist oriented and Capitalist oriented). Most of the underdeveloped nations are ideologically confused and in most cases they have to depend for direction and consultancy on their protecting rich powers.

From an economic point of view the causes firstly originate from the difference in the two economic systems: the planned and the market systems.

The planned system (characteristic of multinational firms and the industrialized world) manipulates the price of its products through the control of supply source and demand. While in the market system the prices can not be manipulated. Most of the agricultural products operate under this latter system. Secondly the poor nations are always in a bad bargaining position in the international trading system. Besides, the matter had been worsened by the growing dependence of the third world countries on the production factors produced off the farm and in many cases out of the country.

Historically the problem can be traced back to the colonial era. The agricultural policies, followed exploitary interests and the tastes of the colonial regimes. The colonial legacy of agrarian dualism (large-scale cash crop production for export vs small-scale nomadic and rural production for stable foods) today confronts African independent nations as a conundrum of agricultural policy. This historical influence generated an unbalanced modern input (such as infrastructure, credit facilities, research, extension, bureaucracies for purchasing, and marketing

etc.) distribution . The rural and nomadic sectors are starved of modern inputs. This was nowhere seen more visible than in the effort to maintain a low producer price level for food crops allowing no incentive and permitting labour deprivations.

### **Other systems of animal production**

Beside the pastoral system, other systems of animal production in Somalia can be summarized as follows:

- Agro-pastoral system in which the animal may have access to grazing lands and cut forage near the river areas (irrigated). Migratory movements can be noted between reverine areas and rangelands.

- Small scale mixed farming near irrigated areas. These farmers retain the productive animals while they send the others to be grazed in distinct rangelands.

- Urban and semi-urban confined systems that are based on cut forages and agro-industrial by-products.

- Semi-intensive State farms.

It is noted that camels are not included in these systems.

Technically speaking, the limiting factors that may hinder the development of these systems can be classified as follows:

- Nutritional factors

- Disease

- Genetic potential

Major constraints towards intensified husbandry systems are the following:

#### **1) Feed and Water supplies**

These two forms are the traditional constraints to the nomadic system of breeding. Their lack constitutes difficulties in the success of intensive commercial animal production. If feedlot operators produce their own forage (source of roughage) or try to depend on by-products, supply is subject to weather conditions and machine operation efficiency. The obstacles in using maize or sorghum is assembling supplies. The reason in which cattle are mostly ready constitute an opposite cycle in the production of grass. Moreover their quality depends upon the time of harvest and post-harvest handling.

Where maximum intake of forage is desired, processing becomes necessary to overcome the limitations of intake caused by the bulky nature of the forages. In any way the particle size should be reduced especially when considering low quality roughages.

Most protein concentrates are scarce and there is irregularity in their production. The oil-cakes are mostly produced in small farms and their assembling is not worth the cost. The underutilization of the national feed mill contribute to the low availability of concentrates for livestock feeding.

Another factor is the geometric price increase in the traditionally produced agricultural by-product concentrates. Their scarcity is so acute that animals are to be placed on restricted feeding with consequent effects on production.

Major by-products that are currently used are as follows: stocks (maize & sorghum), rice, cotton, bagasse, sugar cane, brans (wheat, maize & sorghum), sesame (cakes & straw), groundnut oil-cakes, and animal (fish, bone, blood and meat meals).

The unused but very important by-products are molasses and banana. The alternatives that don't relate to their cost of establishment are sugar cane or banana by-products. The choice between them is mostly based upon their quality and digestibility. The comfit (sugar containing interned portion for feed) is par-excellence for fattening operation. The need of sugar extraction, the technical problems of cultivating and the subsequent mechanical processing may be a hazard.

## *2) Initial capital and qualified personnel*

The most important obstacle hindering the successful application of feedlot technology in Somalia is the lack of sufficient capital by the would be investors. Added to this is an acute shortage of trained personnel.

The initial capital (in terms of investments) on infrastructure, animals and as well as feed supplies is high. The possibility for the would be investors is to seek loans. Officially the financial sources has been available since a short time ago. More often loans are not granted due to the inability to meet the stiff conditions of the lending institutions or sometimes the loan is granted but is seldom used successfully for the feedlot's proposed intentions.

## *3) Short supply of convenient animals*

In most situations, breed is not of primary consideration. Creek et. al. in 1973 concluded that fattening was economically profitable with all types of animals while Ikhatua and Olayiwole (1983) argue that the nonavailability of beef animal conformation among the Zebu breeds constitutes a constraint to getting the ideal beef animals to use in a commercial feedlot fattening scheme. Some resources felt that crosses were superior to native types. However the indigenous breeds have the advantage of being ecologically adapted.

Considering the supply, the difficulties arise mainly from two sources:

- There are not enough numbers of the desired animals.
- The unwillingness of owners to sell off their animals to the local herdsman; they wait until the animals are too old and are unable to trek long distances.

In most cases the breed that is native to the locality is preferred for its easier availability.

## *4) Inability to dispose animals*

The continued keeping and feeding of the animals in the feedlot beyond the stipulated time reduces the profit margin of production. Once the animals attain the desired weights, it is important to dispose of them as fast as possible. The inability to dispose of them arises from inadequate and unorganized markets. Internally, for finished animals, there is not sufficient information explaining the response of the people.

Anyway when being transported, the animals may loose quite a lot of weight.

Supporting this proposal, the Agro-consulting group from the Ministry of Planning, Somalia, has emphasized the introduction of an intensive cattle production technology as a means of increasing quality and quantity at least for those intended for export or for urban population. As Khatua reports, ruminant production under feedlot system has been adopted in Ethiopia, Burkina Faso, Kenya, Niger and Nigeria. Performances of indigenous animals managed under this system has been very encouraging.

Creek (1972) has shown that feedlots are a viable commercial enterprise in Kenya, while in Ethiopia, Jepsen and Creek (1976) have demonstrated that feed-

lots are very effective in improving carcas quality of indigenous cattle economically.

In Somalia, this kind of production system is new. Moreover there is not much research in the field so far. But what has been done has given encouraging results.

Abdullahi S. Gabow (1976), attained from steers of Dawara and Surqo nearly 90 gr/day in a 100 day trail; feeding in a feedlot with rice straw, maize bran, sesame oil-cake, molasses and a little quantity of dried blood & fish meal. With this technique he anticipated the slaughter age in respect to the traditional subjects bringing the dressing percentage from 48% to 52%. Moreover the utilization of banana byproducts as source of green forage base demonstrated productive advantage (Sabrie 1979) with minor cost of the material, without considering the possibility of adding the remainder of banana fruits from commercial channels.

The rationing experience with banana leaves and pseudo-trunks either for fattening cattle or cattle in lactation (Cianci et al. 1980) have shown the full validity of the product which as a single component of the ration gave superior results to traditional grazing in the lean seasons.

Clearly a change in emphasis towards managed feeding and marketing is needed if the nation is to realize a relatively efficient production system. Intensification can be feasible in a way that animals are not in direct competition with humans for foodstuffs. The knowledge of production relationships, particularly the rate of gain and conversion ratio seem to be the essential part of the economic analysis. We have to be very prudent that the feed cost may not offset the value of the added meat.

The practical factors that govern in this sense are:

- The initial fluctuating purchase prices.
- Prices of breeds.
- Difference in body condition of breed.
- Eventual market.

The weights at which bulls are slaughtered are essential (Ikhatua and Olayiwole 1983, and Jepsen and Creek 1976).

Those animals with low rates of gain need more time before their most economic weights are reached while those of higher rates of gain reach their economic weights in earlier periods.

In addition to the potential of expanding the physical production of meat and milk through intensification, there is also quality improvement. The farmers are enrolled to increase the quality of the animals so that the average live price of animals per Kg will rise in constant value over a short period of time. This technique has temporal value creating controllable production possibilities when considering the marketing techniques thus eliminating marketing seasonality.

The other forms of benefits may derive from cost reduction tactics and are as follows:

- gain of mechanisation
- elimination of many of traditional middlemen
- seasonal losses can be efficiently avoided
- reduction of under-employment of the highly trained technicians.

The main objective of animal production under intensification can be summarized as follows:

- 1) To buy suitable nomadic animals from trade routes or from local herdsmen for fattening;
- 2) To improve animals in poor conditions by an intensive fattening system

in order to provide high quality animal products for market;

3) To make judicious use of local agro-industrial by-products for animal fattening purposes;

4) To introduce simple husbandry practices adaptable to Somali conditions that can easily be practised on livestock or by-product owners.

In fulfilling these objectives outlined young and suitable cattle are purchased at Jilal (Dry) — Dec to Feb — season or Hagai (dry) — June to Aug — season, kept under intensive fattening and management regime for periods varying from 90 to 120 days. Traditionally pastoralists tend to sell their stock in times of depression rather than the boom. Under favourable conditions they engage what might be called «target sales». Readily available roughages in the locality are fed in addition to the judicious use of local agro-industrial by-products. An examination of costs and returns should be taken to see if the feedlot operation is a worthy venture.

## References

- AA.VV., *By-product Utilization for Animal Production*, 1982. Proceedings of a workshop on applied research held in Nairobi, Kenya, 26-30 Sep. Ottawa, Ont., IDRC.
- Ali. A. Sabrie, *L'utilizzazione della banana nella utilizzazione dei bovini all'ingrasso*, Thesis, Faculty of Agriculture, Somali National University.
- Ballico, P. 1969, «Alcuni aspetti e problemi della pastorizia Somala», *Riv. Sub-tro. e Tropicale*, Firenze.
- Bates, R. H. and M. F. Lofchie (eds.) 1974, *Agricultural development in Africa. Issues of Public Policy*, New York, Praeger.
- Bozzi, L. 1960, «L'immobilità della Pastorizia Somala», *Riv. Agri. Sub-trop e Tropicale*, 4-6.
- Calcaterra, E. 1979, «A general approach to the problem of Somalia's agriculture», *Riv. Agr. Sub-trop. e Trop.*, 1-2.
- Cianci, D. et al., 1980, *L'utilizzazione dei sottoprodotti della banana nell'alimentazione dei bovini da latte*, Pisa, Pacini Ed.
- Cianci, D. e D. Scaramella, 1980, «Allevamento animale e popolazione selvatica in Somalia», *II Boll. Sci. della Fac. Zoot. e Vet. U.N.S. Pisa*, Pacini Ed.
- Cianci, D. et al. 1983, «Le risorse alimentari del bestiame in Somalia», *IV Boll. Sci. della Fac. Zoot. e Vet. U.N.S. Pisa*, Pacini Ed.
- Creek, M. J. and H.A. Squire 1974, «Intensive cattle fattening in Kenya using high levels of molasses», *World Rev. Anim. Prod.*, X, 4.
- Ikhatua, U. J. and M. B. Olayiwole 1983, «Problems of intensive beef production in Nigeria» *World Rev. Anim. Prod.*, 19,1.
- Jepsen O. and M. J. Creek 1976, «Comparative fattening performance of two types of cattle in Ethiopia», *W. Rev. An. Prod.*, 12,1.
- Jonsson, U. 1981, «The causes of hunger. World Hunger Problem», *Food & Nutrition Bulletin*, 3,4.
- McDowell, R. E. and A. Hernandez 1975, «Intensive systems of beef production in the tropics», *J. Anim. Sci.*, 41,4.
- Reusse, E. 1983, «Somali's nomadic livestock economy: Its response to profitable export opportunity», *World Anim. R.*, 43.
- Samatar, M S. 1984 «Some reflections on livestock development strategies in Somalia», Paper presented at the Symposium on research in Somalia, 16-18 Oct. Mogadishu.