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“Government Policy and Options in Pastoral development in the Sudan”

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Government Policy and Options in Pastoral Development in the Sudan

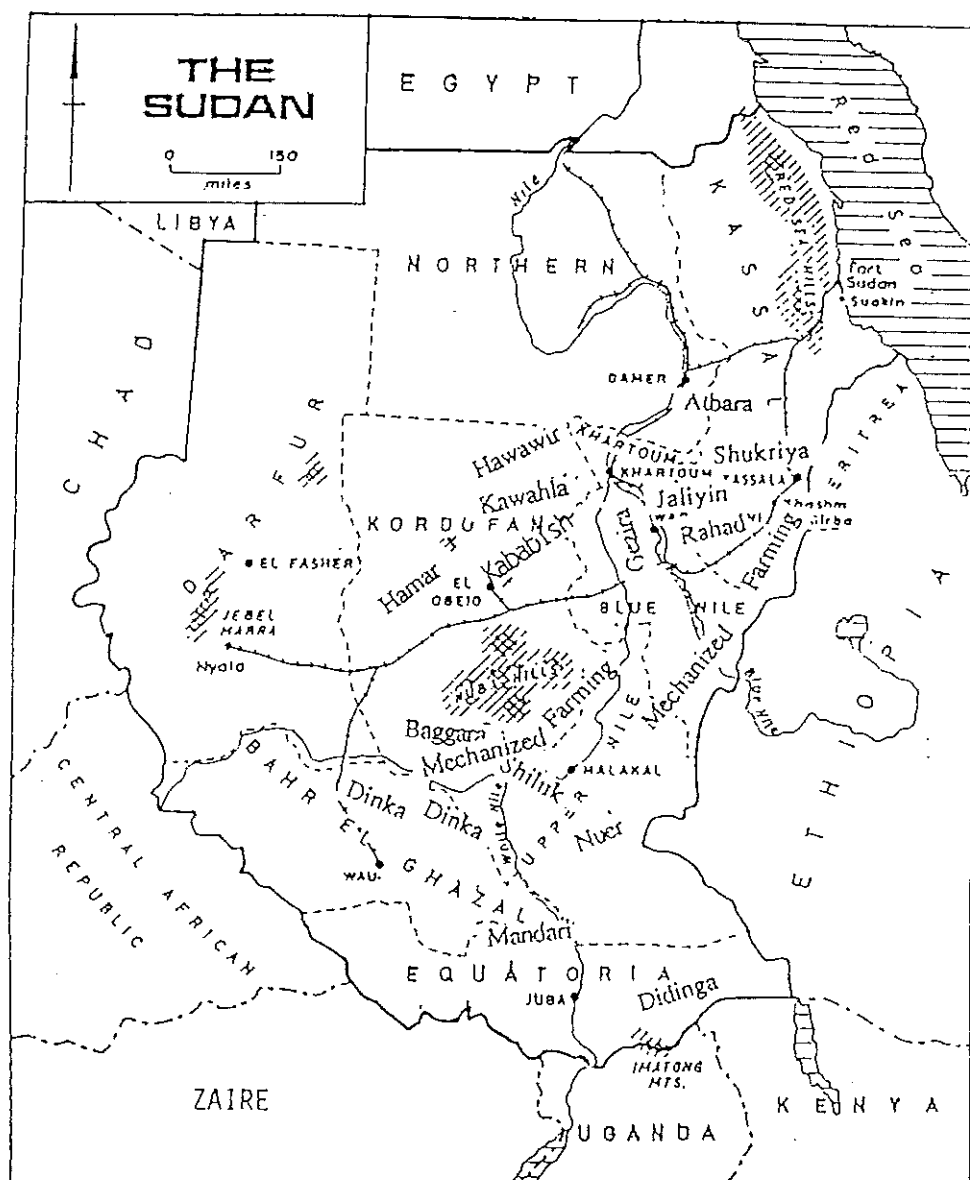
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Sudan is a vast country of nearly one million square miles. Of this, 300 million acres are suitable for grazing, 100 million acres are arable, and 100 million acres or more are suitable for arable and irrigated agriculture. According to 1986/1987 estimates, about 12 million acres of the arable land are already under cultivation. The regional distribution of livestock follows the natural division of the country into various climatic zones with various vegetation and grass density. Rainfall fluctuates from less than 100 mm in the North to more than 1,200 mm in the South. There are, at least, four climatic zones which form the basis for livestock raising in the Sudan: first tropical Equatoria where a large part of the region is unsuitable for livestock raising due to the presence of the tsetse fly. However, cattle are kept in Eastern Equatoria mainly by Toposa and other small tribal groups. Second, Upper Nile and Bahr Al-Ghazal regions which are inhabited mainly by Dinka, Nuer, Shiluk and Mandari. They represent more than two million cattle-keeping peoples in the northern plains of Southern Sudan. The common practice is that they drive their cattle to the swamp where pasture is plentiful during the dry season. They return to the high ground where their villages and animal camps are found during the rainy season and when the rivers rise. They cultivate millet, beans, sesame and other food crops. Third, the western Savannah which is inhabited by the Baggara cattle herders. This transitional zone lies well between the desert in the North and the rich savannah in the South, and as such, its climatic conditions are unpredictable, and the rains fluctuate from season to season. Animal husbandry is

supplemented with the production of millet, groundnuts, cotton and other minor crops. Fourth, the semi-arid zone and desert proper are inhabited mainly by pastoralists such as Hamar, Kababish, Beja, Hawawir, Shukriya and others. Crop production became almost impossible in this ecological zone during the last decade as a result of drought which affected the whole Sahelian zone between 1972 and 1985. (Map 1).

According to the 1983 Population Census, there were 2.91 million pastoralists in the Sudan representing 14.1% of a total population of about 20.6 millions. (Table 1). Livestock statistics (1965, 1976, 1983 and 1986) show considerable increase in livestock population (table 2) despite the droughts of 1973/1975 and 1983/1985. Livestock also contributes between 10–12% of the GDP and 23.5% of foreign exchange earnings from the export of live animals and meat to the oil-rich Arab countries. (Table 3). Pastoral societies, therefore, contribute considerably to the national economy and supply domestic markets with meat, milk and *ghee*, white cheese and hides. At the present level of technology available to pastoralists, Governments deployed various policy measures and techniques either to solve the problems emanating from seasonality, or to tap the livestock sector for national economic goals.

This paper deals with pastoral development related policies in the Sudan within the context of agrarian change, economic pressures and ecological stress. It also assesses the effects of the introduction of modern dairy farms on small-scale milk producers and the patterns and trends of recent pastoral production systems in the arid and semi-arid land of the Sudan.



Map 1. The Sudan

Agricultural Policies and Pastoralists

Pastoral societies in the Sudan have been subjected to administrative and economic policies which have had serious impacts on their mode of livelihood. The most effective of these policies came during the Turco-Egyptian colonial rule (1821-1881) which levied taxes known as *zakat* on pastoral societies according to Islamic *sharia* law. Health services, vaccination campaigns, and disease control efforts were meagre. It was a one-sided flow of taxes from the pastoralists to the state. The Mahdist State

(1881-1898) followed suit, and the relationship between the state and the pastoralists was confined to tax payment and conscription of men to the army.

Two decades after the conquest of the Sudan by the Anglo-Egyptian condominium rule (1898-1956), several administrative ordinances were imposed. Direct rule by British and Egyptian colonial officers antagonized the local communities so that the colonial government reconsidered its position and enacted the Nomadic Shaikhs Ordinance in 1922. This was followed by the Powers of the Shaikhs Ordinance of 1927, which explicitly set out to expand and legalize the hereditary powers of the tribal lea-

ders. The colonial Government then embarked on economic investments mainly in large-scale agricultural schemes. For example, The Gezira scheme was operational in 1923, and many pastoralists were displaced from their traditional farms and grazing lands. Pastoralists and semi-pastoralists, who represented about 90% of the population before the scheme dropped to only 7% of the total population when the scheme was accomplished. A mono-cultural production of cotton for export and other minor food crops was adopted and there was no plan for integrating livestock and agricultural production. The Gezira scheme is a clear case of how the introduction of cash crops displaced pastoralists and forced them into new, unfavourable ecological zones. Most of those dislocated by the scheme either left for the drier northern parts of Gezira, crossed to the eastern banks of the White Nile or the southern humid zone. In all three cases, pastoralists confronted the uncertainty of moving into new lands and competing with alien ethnic groups.

White Nile Schemes were established in 1936 and became operational in 1938. Pastoralists were again displaced when the Jebel Aulia dam was constructed for irrigating public and private agricultural pump schemes. An animal census in 1949 revealed that only 20% of the livestock remained on the scheme area following large-scale disposal of their animals due to apparent shortage of grazing lands within an accessible distance from the traditional settlements by the banks of the White Nile.

The Gash and Toker Schemes with an area of about four hundred thousand acres of land in eastern Sudan were completed by 1926; 70% of the total area of the scheme was allocated to the Hadendowa pastoralists. The ILO mission of 1962 and other studies concluded that the Gash scheme has not succeeded in altering the nomadic life of the Hadendowa, many of whom continued their nomadic life while seasonally cultivating their farms in the scheme.

Rain-fed mechanized schemes in Eastern Sudan were introduced in Gedarif, after the Second World War in 1945 and the first phase continued until 1951. The schemes were implemented in areas already inhabited by Shukriya and Jaly'in and other pas-

toralists. However, the scale of their operation was limited to a relatively small area relative to their expansion during the last three decades.

The establishment of large-scale agricultural schemes was accompanied by some interest in livestock development and, as a result, three agricultural research stations were established to serve these schemes and to carry out research on the production properties of livestock in the Sudan. Some of the findings of these experiments were reported in Tothill's (1939) *Agriculture in the Sudan*. The College of Veterinary Science was established in 1938, and was mainly mandated to conduct research on disease control and to train middle range and professional staff.

There was no stated policy on pastoral development during the colonial regime. The introduction of veterinary services and health facilities was not widely spread, and pastoralists seemed to have refrained from sending their children to school, except in the case of some chiefly families. Although pastoralists maintained a certain degree of aloofness from the state apparatus, due to the introduction of Indirect Rule in 1922, they were displaced by the irrigated and rain-fed agricultural schemes. The extent to which the schemes affected their mode of livelihood was not documented, but it is clear that these policies set a pace for Sudanese national Governments to expand the already existing schemes.

The lack of pastoral development policies gave some social scientists the wrong impression that the pastoralists "enjoyed" the colonial administrative experience. One would expect that had the colonialists tampered with the lives of pastoral societies in the manner adopted by national governments and international organizations today, they would have encountered similar failures. This does not mean that the colonial administrative controls had no negative impacts on pastoral societies. The policy of "divide and rule" (in the form of the Close District Ordinance, 1937 and the Southern Policy, 1930 and 1946) kept them isolated from each other and prevented free interaction which later resulted in suspicion, mistrust and the escalation of inter-ethnic tensions and separatist movements.

Since independence in 1956, successive

national Governments embarked on development policies not very different from those of the colonialists or expanded the already existing schemes. Excessive and faulty national development policies, on the other hand, aggravated the demise of pastoralism. For example, the Managil Extension of the Gezire Scheme was accomplished in 1962 by appropriating 800,000 acres of land for cotton production. New large-scale irrigated schemes were also developed in Khasm Al-Girba (or New Halfa) in 1961/1962 covering 400,000 *feddans* (0.420 hectares), in Rahad Scheme in 1973, over an area of 300,000 *feddans* and Suki 30,000 *feddans*, in 1972. The third phase of the rain-fed large-scale private mechanized schemes started in 1968, and the schemes were extended from Kassala (where they originated) to South Kordofan, the Upper Nile and the southern parts of the Blue and White Nile provinces. Today the large-scale private farming sector covers over 4 million acres with disastrous consequences for pastoralists and small cultivators.

It seems obvious that the development of large-scale irrigated and rain-fed mechanized schemes in areas previously occupied by pastoralists produced adverse effects on their migratory patterns and traditional system of pastoral production. The monocultural pattern of these schemes has eliminated any possibility of integrating livestock and agricultural production. The stated policy advocates the settlement of pastoralists, and in fact many pastoralists settled either by choice or necessity.

Livestock Development Policies

Planners, administrators and many social scientists still argue that pastoral development and livestock development policies are synonymous. However, it is time to recognize that there are several differences between these two different attitudes and official perceptions of pastoral production and resource management. It is these attitudes which delineate livestock development as an economic activity governed by the rules of the market economy and pastoral development as a social development activity. Sharp as it may be, the borderline

between these two notions is very important, since policies to develop livestock are not always identical with pastoral development and *vice versa*.

Livestock development is more specific and more clearly defined than pastoral development. Policies intended for livestock development often include the following: First, technical advancement and the introduction of new inputs, medicine and vaccines for disease control, engine power for water drilling, farming of fodder etc. Second, specialization and diversification of livestock products through the adoption of the so-called superior production and management techniques. There is also a tendency towards specialization in livestock products, for example, meat, dairy, wool, hide etc. Third, increasing the ability to evade seasonality by transforming perishable products such as milk into storable forms often aided by technical advancement and specialization. Fourth, developing an integrated marketing outlet responsive to the demands of national and international consumers. The development of livestock marketing boards and the emergence of middlemen and wholesale traders operating on the local, regional and national markets.

The overall objective of these policies to increase livestock production and productivity, maintain steady off-take and provide low priced livestock products to satisfy the needs of the more politically active and vocal urban dwellers. In other words, pastoralists are seen as mere keepers of livestock, providers of cheap livestock products and an indispensable source of revenue to the national treasury.

In the Sudan, the notion of livestock development was not fully formulated until the 1970s. An increasing demand for fresh milk and meat for an expanding urban population, on the one hand, and the pastoralists' need for veterinary services, disease control and vaccination campaigns, on the other, meant that some sort of policy had to be formulated. According to Khogali (1987:54),

The policy for development was interested in the livestock and not in the livestock raiser and it took two directions, a) to open water points in areas that have no water services and b) to expand veterinary servi-

ces so as to combat epidemic livestock diseases.

Although the Ten Year Plan (1961–1970) was biased in favour of the development of the agricultural and industrial sectors, it showed some interest in livestock development. This period witnessed a considerable increase in veterinary services and some form of livestock development projects.

Three livestock development centres were established: first, Nesheishiba near Wad Medani, the HQ of the Gezira scheme was accomplished as early as 1961. It was entrusted with the improvement of Kenana and Butana dairy cattle breeds, to develop mixed farming in the Gezira scheme and to supply Wad Medani town with fresh milk and other dairy products.

Second, Ghazala Gawazat was established to help nomads to appreciate better methods of raising livestock and to distribute males of improved breeds and to advise the nomads of Southern Darfur and Southern Kordofan provinces on better and more profitable livestock raising practices.

Third, Umbenein centre was established to improve and preserve the milking qualities of Kenana dairy cattle, to acquaint the local people with proper systems of dairy husbandry and to integrate livestock into the agricultural system.

This was followed by the establishment of five centres for the improvement of dairy production in large towns (El-Obeid, Juba, Malakal, Torit, Atbara). Three other centres were connected with the livestock development centres at Nesheishiba, Ghazala Gawazat and Umbenein. The five dairy improvement centres are no longer operational while the three livestock development centres are still operational but with very low performance.

Another important development during this period was in the field of veterinary medicine, the production of vaccines and the establishment of 130 animal dispensaries and 20 veterinary hospitals throughout the country. Towards the end of the plan in 1970 higher fertility rates were recorded as a direct result of the introduction of modern medicine, vaccination and disease control campaigns.

The Five Year Plan (1971–1975) extended these activities and established seven major settlement areas for mixed farming and

ranching. These settlement areas also provided watering points and corridors for those migrating animals mainly for Dar Missiriya District, Kordofan province to encourage the Baggara to settle around Babanusa Milk Factory. However, the 1972/1975 drought forced the Baggara to change their migratory pattern and few households were able to endure settlement while herds were declining rapidly due to drought and shortage of pasture around the boreholes. The factory's capacity was under-utilized, suffered huge economic losses and shortage of spare parts which rendered it useless by 1978.

Towards the end of the plan, in 1974/1975, the Animal Production Corporation was established in order to promote the development of private and public dairy, fattening and poultry projects. These were to be located around the large towns with the main objective of providing cheap dairy products for urban dwellers. According to this policy, 10 Government dairy farms were established in the principal towns to supply fresh milk and to advise prospective farmers on how to run dairy farms on a profitable basis. This experiment was extended to the Gezira scheme in 1973, as part of the Government policy to integrate livestock and agricultural production. About 39 dairy farms and fattening units were established in Gezira in 1976, benefiting from the Nesheishiba livestock improvement centre which provided and administered artificial insemination to reproduce improved Kenana breeds.

The steady rise of meat prices in the major towns (Khartoum, Omdurman and Khartoum North) prompted the development of rest-stations throughout the livestock route from Western Sudan to Omdurman town. An Animal Production Corporation was established and 46 rest-stations were developed to provide water, fodder and limited veterinary services. The project was also connected with the plan to establish a disease-free zone guarded by veterinary police. Holding grounds were also established around Omdurman and other towns to increase livestock supply both for local use and for export. The main objective of the project was to overcome the problem of livestock moving away from areas of demand during the dry season in search of

water and fodder. The big livestock merchants and traders used the holding ground to hold their livestock back from the market until prices soared and only sold small numbers. It also offered the livestock traders operating in the export sector the opportunity to diversify their outlets and compete favourably with the local slaughter-houses. This prompted a decision by the Government in 1975/1976 to impose a ban on animal exports in order to satisfy the demands of the local market. With the open Sudanese borders and the availability of water transport across the Red Sea, smuggling was intensified and the Government lost a valuable source of revenue.

The Government's attempt to offset domestic and export demands met a new challenge in 1985/1986 after the drought. It appeared that pastoralists withheld animal sales in order to build up their herds. Grain prices declined and fewer animals were sold to satisfy household needs. Although there was no declared policy on the issue, various statements by Sudanese officials offered three interrelated options: first, to continue with the banning of livestock exports specially females; second, to introduce pricing measures and curb the black market and third, to eliminate middlemen and improve producer prices. The first option was neither practical nor desirable since livestock proved to be the only profitable sector of the economy as far as the cost of production was concerned. The Government reaps about 80 million Dollars annually in foreign exchange earnings with a very meagre investment in the livestock sector. Second, the economic recession was hitting hard, while the agricultural sector was in shambles consuming 65% of the cost of production in the importation of chemicals and fertilizers which rendered it non-profitable.

The price controls failed to realize their objectives and for the first time in Sudanese history, butchers waged several strikes against pricing controls. Their point of view was that livestock traders and middlemen made over 50% profit from the sale of every livestock unit and that they were the real cause of the highly priced meat. The 1983 ordinance which banned the sale of meat on Wednesdays, was reinforced to

slow down the demand for meat. However, people began to store larger quantities of meat to compensate for that, and the demand remained unchanged.

Urbanization, rural/urban migration and change of consumption patterns contributed to the increase in the consumption of milk and milk products during the period from 1976 to 1986. Sudan imported 8,225 tons of powdered milk and 373 tons of butter worth a total of 11 million Sudanese Pounds (about 3.75 million Dollars) in 1983. As a direct response to this, Sudanese and foreign planners concentrated their efforts on commercializing the livestock industry, and encouraged the private sector to invest in dairy farms around the principal towns alongside the river banks. This was accompanied by huge investments in two feed factories and the encouragement of businessmen to invest in drug stores and to import veterinary products. There is no reason to believe that this policy was successful in meeting the increasing demand for fresh milk. The milk produced by the private farms was too little, too expensive and not within reach of the poor income groups who form the majority of the consumers.

The Government encouraged the import and reconstitution of powdered milk in two large factories, one in Khartoum North and the other in Wad Medani. These partially solved the problem of the majority of the urban dwellers in Khartoum, Gezira and Kassala. By this time, the competition between the commercial sector and the small-scale producers became obvious. The private sector and reconstituted milk factories waged a war against the settled pastoralists urging the health authorities to investigate allegations of mixing milk with water, selling milk in dirty buckets and questioning whether the milk sold by pastoralists was not originally powdered milk. consequently, the licensing system was reinforced and as a result, many small producers were forced out of the market. Another problem was that the private dairy farms were competing over fodder with the small producers and as a result, fodder prices increased more than tripled during 1980-1985.

Livestock development policies were dominated by the deployment of a new input

delivery system targeted on veterinary campaigns, water development, stock routes, commercial dairy farms, holding grounds and marketing facilities. It created a new system of social and economic differentiation in terms of access to credit, better grazing lands and water facilities by the banks of the Nile. It is unfortunate that the capital intensive livestock industry system failed to fulfil its objectives and forced many small producers out of the market. However, it created vast skills in modern dairy farm and fattening grounds management, which are not accessible to the small producers who are still dependent on free range pastoralism.

Pastoralism Development Related Policies

Pastoral development policies are loosely defined but, ideally, they have more to do with introducing small-scale projects and an input delivery system specifically suited to the needs of pastoral societies. The prime objective of such policies is to enhance social development and improve living standards. Pastoral development policies, therefore, are best understood as an attempt to facilitate development among pastoral societies with due recognition of the importance of integrating aspects of modern knowledge into the traditional system of production. Livestock plans, on the other hand, have much in common with pastoral development even though they are not directly targeted on benefit pastoralists, except in the case of the provision of water and health facilities. Livestock development policies are based on the assumption that a trickle-down effect would eventually diffuse economic benefits and raise the living standards of the pastoralists once such policies are implemented. In essence, this assumption encompasses two fallacies: first, that pastoral societies would accept this strategy and second, that an increase in livestock would ultimately result in an increased off-take. The two assumptions proved to be wrong; many pastoral societies, not without good reason, were suspicious about the programmes and at times refrained from being part to them and second, few sales were

made to fulfil the market demand for more livestock and livestock products. Sudanese planners associate pastoral development with livestock development, and one of their earliest policy objectives was that settlement is a prerequisite for pastoral development.

The Project of Community Development for Settlement of Nomads in the Sudan was forwarded to the UN Agency for the Sedentarization of Nomads and Semi-Nomads in 1962. Two extracts from the project document are relevant to the objectives of livestock development: first, it states that,

sedentarization is not an objective. It is only a means to improving the economic, social and cultural conditions of those communities, to integrate those communities into the life of the nation, and to enable them to contribute fully to national progress.

It is, therefore, assumed that pastoralists do not contribute fully to the national economy when they are on the move. This assumption is basically erroneous in that pastoralists contribute over 10–12% of the GDP at the time when they represent less than 15% of the total population. Second, the project was not meant to encourage pastoralists to settle spontaneously with their cattle in the irrigated schemes. The mono-cultural agricultural policies adopted by the state did not cater for such an option. The project for settlement of nomads in the Sudan stated that they should be settled in the drylands instead. It asserts that,

most of the projects for settlement of nomads have attempted to settle them on irrigated lands. Such a settlement always had two main drawbacks, first, the nomad has no experience of irrigated type of intensive agriculture and finds himself lost in 10 to 20 acres that may be allotted to him. He cannot, for a very long time make effective use of these resources... and second, the big irrigation projects, generally, have not provided grazing areas or such rotation of crops, which may enable him to maintain a sufficient number of

cattle. He has thus to part with his herd of cattle of flock of sheep with which his whole mode of life had for all these centuries been so intimately connected.

This point of view not only justifies the exclusion of pastoralists from integration into irrigated agriculture, but it also casts doubt about their ability to be cultivators. However, I cannot recall any pastoral community within the central rainlands of the Sudan which does not practice one form or another of crop production. Hence, the proposal to settle pastoralists in the drylands outside the irrigated schemes was meant to make available more lands for the production of cash crops. The expansion of modern agriculture during the 1970s and 1980s, as described in the preceding discussion of agricultural policies is clear evidence of the Government's intention.

The project for the settlement of nomads in the Sudan was criticized by Asad, Cunison and Hill (1962, reprinted in 1976). I quote their argument at length,

If we ignore for the moment the extremely fundamental problem of getting nomads to accept settlement, it must be appreciated that the needs of settlement can only be achieved through investment that is found from the point of view of the national community as a whole. Whether in the case of a particular group of nomads, such ends are best achieved through cultivation, ranching, dairy farming or some other industry, will depend on the potentialities of the area in which they live... Similarly, the feasibility and desirability of settlement based on ranching will depend among other things, on the capacity of other sectors of the economy to absorb the subsequent local labour surplus, or in other words, on the degree to which the economy as a whole can afford to eliminate traditional sources of productive employment. Unfortunately the plan shows little awareness of such problems.

The settlement of pastoralists was debated by policy makers and social scientists (summarized in Ahmed, 1976) and the only reason why it was not fully implemented by the Sudan Government was because the United Nations was somehow convinced that it was not a worthwhile effort. How-

ever, settlement as a policy was not completely abandoned and continues to dominate livestock development projects until today.

The expansion of irrigated agriculture displaced many pastoralists and denied them the right to use their traditional pastures and forced their movement to new grazing lands. At least this was the case in Gezira Rahad, Khashm Al-Girba and Suki irrigated schemes. Many publications have depicted the demise of pastoralists (Sorbo, 1985; Abu Sin, 1985; Ahmed, 1987; Salih, 1978; Mohamed Salih, 1987, 1989, Khogali, 1982, 1984). Others such as the Shukriya, Kawahla, Rufa'een and Musalamiya herdsmen settled in the scheme use it to augment their incomes and obtain supplementary fodder from the crop residues. The Hassaniya herdsmen of the White Nile have adopted the same principle since the establishment of the pump schemes in 1939 (Ahmed, 1980; Khogali, 1982).

The pastoralists demand for health, water and other social services forced the government to initiate development projects which became major election issues during the short periods of democratic rule which the country have experienced. Table 4 shows the veterinary centres, hospitals and dispensaries in the Sudan in 1985. Due to the present economic recession, health facilities operate with minimum capacity or are not operational at all. Problems pertaining to the shortage of medicine and vaccines are common, and even when these are made available (locally by the National Veterinary Laboratory), the refrigerators are non-operational or there is no kerosine to operate them. The same applies to the impressive increase in modern boreholes with diesel engines which have suffered engine breakdowns and a shortage of spare parts and fuel. Most of the reservoirs were silted as a result of poor maintenance, lack of fencing and general misuse.

Range management suffered greatly from the abolition of the Native Administration System in 1972. One of the serious consequences of this new policy is that the 1954 scheme to provide water points and to conserve the grazing areas around them, ceased to operate. This is mainly because the success of the scheme which covered the area between Bahr al-Arab and Abu Matarig (Map) was dependent on active,

highly responsive local leadership. The modern system replaced the tribal chiefs with chiefs with administrative officers, mainly university graduates. They were expected to accompany the herdsmen, collect taxes and solve disputes. The system was resisted by pastoralists who voiced major grievances against this alien administrative system which is out of touch with their reality, cultural values and interests. The new educated administrators were elitists in their approach to pastoralists and inexperienced in solving local conflicts, some of which were a result of a long history of disputes between individuals and groups. Soon it became obvious that the central government was not able to cope with the increasing demands for social and health services due to poor tax collection in a society that had just been introduced to the concept of the state as a provider of social amenities.

The period from 1983 to 1988 was a period of stress, great anxiety and uncertainty among pastoralists. It was characterized by a lack of sense of direction in Government policies, economic recession, drought and famine. Moreover, Government policies shifted emphasis from development to survival management. Pastoralists began to migrate to towns and relief centres in millions. The war in Southern Sudan, alone, created over one million urban refugees (most of whom were pastoralists) living in appalling conditions, ravaged by starvation, disease and malnutrition.

It is unfortunate that the state was incapacitated and was not in a position to formulate a policy towards rehabilitation, let alone development. Policy objectives such as herd re-building and raising productivity were not on the agenda. However, it is only fair to mention that export promotion measures constituted the main policy option available to the government. It was surprising to many observers that livestock exports increased during the 1983/1985 drought (table 3) which created domestic meat shortages, which forced the government in 1985/1986 to contemplate importing cheap red meats from Australia. Livestock loss figures appeared to have been exaggerated (Table 1), and no need for herd reconstruction or decrease in off take was

expressed by the Government.

This period was also dominated by a massive presence of NGOs mainly feeding the starved and displaced. However, the lack of a coordinating institution in the Sudan to receive NGOs reports and make them available for researchers and curious readers, the secrecy with which some NGOs operate and the scale of their operations, all militate against a good insight into their effort. A similar concern was voiced at a regional level by Oxby (1989, 71-2) who commented that,

the impression gained from studying the various programmes is of people facing similar situations and problems in different and often remote parts of Africa, with often little or no contact with each other. Even at the level of NGO headquarters, there seems to be little policy discussion between NGOs on their strategies for (agro) pastoral development

However, the NGOs role in relief and saving life, is certainly well-known and well documented. The only plausible inference one can make is that relief food supplies have saved lives and released the government from pursuing rehabilitation measures. I'm not sure whether national savings as a result of delegating the responsibility of relief to humanitarian organizations, have been re-injected into the pastoral system or other productive sectors of the economy. In the case of the Sudan, I assume that such financial savings must have been directed to the war effort in the South of the country which has continued unabated since 1983, with no signs of peace. It seems as if the lives which were saved in the northern parts of the country were reclaimed in the southern parts.

Considering the pervasiveness of livestock policies and their impact on pastoral communities, one can maintain that not all livestock development policies are pastoral development failures. However, there have been, and will be, developmental failures among pastoral societies as long as development is measured in terms of economic cost-benefit analysis. Despite these failures, one would assume that pastoral development workers must have gained considerable experience from such unpleasant encounters. The problem is whether they have

learned the lessons and will refrain from committing the same mistakes.

Pastoralists Response to the Crisis

The commercialization of pastoral production and agrarian change have been met with different responses among pastoral societies. Large sections of the pastoral communities are integrated into the market economy. Their living standards are closely tied to the status of the national currency and the fluctuations in the prices of the manufactured goods.

With respect to agrarian transformation three responses are more dominant. First, the pastoralists displaced by large-scale agriculture schemes have devised, with great unease, new migratory patterns to allow themselves longer periods in the southern wet zone. However, since 1983 and the escalation of war in Southern Sudan, many pastoralists with small herds began to settle in large settlements, or in the outskirts of large towns. Like those who settled around large-scale irrigated schemes, some of the pastoralists in the rain-fed sector became more dependent on farming in order to avoid the purchase of grain. Those who migrated to the outskirts of towns have been transformed into milk sellers dependant on their small herds of goats and cows. They, unfortunately, have to compete with the modern sector, dairy farms and imported reconstituted milk. Herd management is practiced by women, while most men are involved in firewood and charcoal selling, or look for jobs in towns in order to diversify sources of income and make ends meet.

Second, most tenants in the irrigated agricultural schemes keep a small number of cattle or goats to augment their incomes. With high use of expensive chemicals in mechanized agriculture, most farmers incur substantial losses and become indebted to the scheme authorities. Livestock, therefore, is kept as the only sustainable source of income and not as a supplementary activity. Herds, in this situation, benefited from disease control, vaccination campaigns and artificial insemination. However, the irrigated schemes have restricted

the number of livestock units a household can raise. Likewise, pastoral households are aware of labour limitations in mechanized agriculture and the importance of keeping an optimum number of animals capable of supporting the household without depleting its labour sources. Settlement inside the schemes is not suited for livestock raising without affecting the tenancy size and subsequently the tenants obligation to produce cash crops. The high predictability of irrigated agriculture in terms of availability of water and fodder helped in a trade off between livestock and agricultural production, although the scheme authorities are inclined to discourage the tenants from livestock raising. Some pastoralists settled adjacent to the schemes depend partially on arable farming and partially on wage labour. Although their income earnings are better than some of the tenants, livestock holdings have increased tremendously in the Blue Nile province (see table 1) since the 1960s, due to improvements in disease control.

Third, pastoralists displaced by the 1983/1985 famine have responded in various ways to the crisis. Pastoralists with a small number of animals began to practice sedentary pastoralism in large villages or migrated to live in squatter settlements around the large urban centres. Those who lost all their animals migrated to relief food distribution centres only to live as destitutes depending on international charity and relief food. Baxter (1987,19) depicts this trend as a direct result of the underestimation of the skills possessed by pastoralists which aided them over the years. According to Baxter (*ibid*),

Family and core social and economic relationships have taken a beating. Pastoral men have grown accustomed to having their skills devalued, and have adapted to migrant labour and shanty town life; as their womenfolk have adapted to getting by on relief handouts while trying to maintain, if they are lucky, a heifer or two and few sheep or goat.

A recent report (Clark, 1988) suggests that there are about 2 to 3.2 million internal refugees in the Sudan; over one million of whom are pastoralists from war and famine stricken Southern Sudan. These fi-

figures underline the calamity of the situation four years after the 1983/1985 drought.

Pastoral societies have different local level responses to development policies and these cannot be discussed at length in this paper. Although pastoralists are resilient to change, their social structures respond differently to crises. Rich pastoralists are much more able to diversify their incomes than poor pastoralists, and different ecological conditions create different responses and survival strategies.

Most recent research reports about pastoral societies in the Sudan have not transcended the studies which were carried out during the 1960s and early 1970s. Hence, basic research is needed to explore the extent to which the forces and agents of change have produced pastoral systems of production different from those of twenty years ago.

Conclusions

Planners and administrators often hang on to the simplistic view that an increase in livestock production and productivity is synonymous with pastoral development. The prime objective of integrating pastoralists into the market economy is to satisfy the increasing demands for meat and other livestock products. This view certainly does not correspond with that of the pastoralists, whose perception of animal husbandry is geared towards satisfying the immediate needs of their households. It is in this respect that pastoral development policies failed to engineer development in harmony with pastoralists' social objectives and physical environment.

Livestock development policies have so far been mainly concerned with the provision of water, disease control and raising production with little interest in social development. Since development funds are allocated according to investment priorities, pastoral development has often been considered secondary to cash crop production and commercial ranching.

At times, the Sudan government prevented pastoralists from spontaneous settle-

ment, either because it contradicted the stated agricultural policies or it was not involved in the process. I argue elsewhere (1989) that a state under economic stress is incapable of solving the problems of development let alone rehabilitating its displaced citizens. Hence, state policies have been geared towards survival management, and since this also requires certain structural and infrastructure amenities, the state resorted to coercion to legitimate its existence. This has certainly occurred under the realization, by the state, that development is a political activity in which certain economic and social interests are expressed.

There is no need for the preservation of a pastoral system of production incapable of facing the challenge of the future. We are all well aware that pastoralists operate within tremendous economic, political and ecological pressures. Moreover, the world around pastoralists has changed so much that there is no hope for the resurrection of the "Noble Savage" or the reconstruction of the long lost "Garden of Eden". Abandoning pastoralists, or leaving them to struggle alone for survival, assuming that they will live in harmony with nature, is a misjudged objective. It follows that positive interventions are urgent in order to improve the standards of living of pastoralists, and any delay in doing so will prolong their misery and render them victims of the increasing hegemony of the state apparatus, ecological pressures and the livestock traders, middlemen and marketing boards. Hence, any call for conserving or romanticizing the present situation of pastoralists is merciless and would earn them nothing but more suffering and misery.

Half a century of intensive research among pastoral societies and the publication of several studies have passed and we are still discussing: first, the lack of integration of pastoral and agricultural production, second, the lack of understanding and appreciating indigenous knowledge, and third, replicability of the same mistakes in the name of development. There is, therefore, an urgent need to move away from in-built stereotypes and ill perceived notions about pastoralists. It is appropriate to quote Baxter (1985,17) in arguing that,

we are all re-learning then to consult the local people and to learn from them, and to encourage them to use their own knowledge and skills in development; just as we are also re-learning to utilise traditional medical and midwifery skills. The European explores of Africa who survived were those who listened to the local people.

To take the role of facilitators of development is to eliminate seemingly similar but divergent attitudes inherent in notions such as pastoral development *vs* livestock development. Until the new pastoralists were discovered, (Baxter, 1987; Mohamed Salih, 1985), the common knowledge was that they had no skills to aid them through disasters and ill-planned policies.

Are there any policy options in order to respond to the crisis, I would suggest that there is an urgent short-term need for rehabilitating the existing livestock services (bo-reholes, reservoirs, dispensaries, hospitals and centres, vaccination campaigns etc), before hurriedly embarking on new large-scale projects. The medium-term policies should concentrate on rehabilitating the existing livestock development centres and should modify their objectives to cater for the needs of the small producers. These could be used as centres for reaching pastoralists by development workers and the veterinary services, as well as centres for extending and blending modern and indigenous knowledge. As centres for the improvement of livestock quality, introducing artificial insemination and making use of the experience of other African countries will make such centres an invaluable asset in pastoral development.

In their report on pastoral development in Central Niger, Swift and others (1984) proposed that herders associations could act as a vehicle for consciousness raising and for, a) the control over rangeland and pastoral rural resources, b) the creation of institutions for administering and communicably managing such areas and c) decentralization of grain distribution and the provision of credit so as to allow herders to purchase grain when the prices are lower. One can add to this list the need to create marketing and production associations to under-cut the middlemen and marketing boards

which extract a huge surplus from the small producers. Such policies should be discussed within the context of a wider range of social and political considerations, and their success cannot be guaranteed simply because they appeal to pastoral sentiments.

However, in the long-term, pastoralists are destined to be even more integrated into the market economy. More pastoralists will certainly be forced out of the traditional system either by man-made policies or by natural disasters and crises. It seems our concern with the predicament of pastoralists should be geared towards equipping them with new skills to face the future and to reduce the social cost that they may suffer if we render them unrealistic solutions in a rapidly changing world. The present trend of spontaneous settlement around the large population centres will continue, and the settled pastoralists should be encouraged to venture into farming and other activities to supplement their incomes.

The case of the Sudan has shown an increasing demand for meat, milk and milk products both for domestic consumption and export. This means that a choice has to be made between importing powdered milk from the EEC (which is quite a financial burden) or encouraging domestic producers. Any policy will be futile if it fails to improve the living standards of pastoralists and offer them hope for a better life. The issue, here, is not an increase of production for the markets *per se*, but a process which should be accompanied with a massive social development programme engineered by the pastoralists themselves, with their immediate needs as a priority. As facilitators, we have better chances of success if we begin with small-scale interventions working together with pastoralists, and not to compel them to accept the assumption that the experts know what the pastoralists need and how to get access to it. It is about time that pastoral knowledge should be utilized and that development experts explore them in their efforts to generate sound pastoral development projects.

Tables

Table 1 *Percentage of Pastoralists to the total Population of the Sudan, 1956-1983*

	Nomads	Total population	%
1956	1.405	10.263	13.69
1973	1.630	14.819	10.99
1983	2.191	20.564	10.65

(Source: Compiled from Population Census 1955/56, 1973 and 1983)

Table 2 *Livestock Estimates in the Sudan, 1965-1986 (in millions)*

	1965	1976	1983	1986
Cattle	9.1	15.4	21.0	17.8
Sheep	8.7	16.2	11.3	15.4
Goats	8.9	11.3	11.8	13.1
Camels	2.0	2.4	2.7	1.93

(Sources: Livestock Census, 1976. Animal Wealth Economics, 1986. National Economic Conference, Khartoum, 1985)

Table 3 *Sudan Main Exports (in Million Sudanese Pounds)*

	1981	1983	1986
Total exports	357.0	810.7	844.7
Livestock	44.9	94.0	198.2
%	12.57	11.59	23.46

(Source: Bank of Sudan, Foreign Trade Statistics, 1986/1987)

Table 4 *Veterinary Services Available to Pastoralists, 1983*

Hospitals	58
Centres	55
Dressing Stations	238
Total Veterinary Units	341

(Source: Animal Production Corporation, 1984)

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