

The 1960's Drought in Botswana

by A.C. Campbell

Before the drought

The years 1933 to 1935 saw a serious drought, with cattle numbers being depleted in many parts of the country. By 1939 cattle were increasing again, mainly as a result of three years of good rain. The first available stock records (1939) show the national herd to have been 671 100 animals. No serious droughts were recorded for the next twenty years. Even so, rainfall was by no means consistent, with some areas, such as the eastern Ngwato, suffering intermittent periods of poor rainfall. From 1954 onward, the unevenness of the rains increased in most areas, although averages remained not too far from the mean.

By 1957 the national herd had nearly doubled, numbering 1 309 950 animals. At the same time the human population had also nearly doubled. Since cattle play an important part in rural activity, it is likely that there were twice the number of cattle owners as there had been in the 1930's. Water development only started on any scale after 1950, which suggests that grazing areas had not significantly expanded since the 1930's drought. There appears to have been no further increase in the cattle population after 1957, either because of the deteriorating rains, or because there was no further grazing available near the watering points. In 1959 veterinary officers were reporting scarce grazing in eastern Bechuanaland.

The drought began in 1960 when rains failed in almost every area. Here it should be noted that, because they were no longer increasing in number, more cattle must have been dying. As many participants have stated during the Symposium, however, drought means different things under different circumstances; insufficient rains do not necessarily affect stock, although they may well preclude the growing of crops.

The drought

Although all the signs were present and could easily be recognized, the drought of the 1960's took people by surprise. It was to reach a climax in 1965 and be described as the worst for thirty years, yet little real planning had taken place to alleviate it. The first signs were noted in 1960, and the *Annual Report* for that year stated:

"The failure of adequate rains during the first quarter of the year resulted in severe drought conditions over practically the whole territory by mid-winter. As conditions deteriorated and water supplies dried up, there was fairly widespread movement of stock to where grazing and water could be found. This aggravated, to a considerable extent, the adverse conditions around the main water supplies. In some of the worst hit areas, there was virtually no grazing to be seen, and stock existed mainly on browse."

A Drought Relief Committee was formed in Francistown and the Administration became concerned, but good rains fell in November and the ensuing rainy season proved to be well above average, except in the Ghanzi District. The rains, however, were not by any means regularly spaced, and certain areas, such as the eastern Central District, remained drought-stricken. The generally good rains appear to have lulled any official concerns aroused in 1960.

The following season, 1961/62, produced figures well below the mean, and in several

centres less than half the rainfall of the previous year was recorded. That year's *Annual Report* records:

"The most noteworthy feature of the 1961/62 season was the very severe and prolonged drought which affected the whole Territory. As a result of it, only a very small proportion of the land normally planted to crops was planted. Large scale imports of maize and sorghum were necessary, and emergency measures had to be taken for the feeding of school children and for the provision of famine relief work in the worst hit parts of the Territory.

The worst affected areas were the eastern Bamatwan and the northern Tuli Block where not only were no crops produced, but large numbers of cattle died from poverty. The southern Protectorate did not suffer so badly but even there less than ten percent of the arable land was planted."

The next three years were similar; rain fell in October and November, but by the middle of December it had begun to tail off, and by January the heat was intense. Rains again fell in March and April, but these had little effect. At the beginning of the rains cattle were too weak to plough. By January, when they might have been able to plough, there had been no rain. Veterinary reports at this time indicate that most cattle were subsisting on browse (*Acacia mellifera*, *Combretum apiculatum*, *Boscia albitrunca*, *Calophosphinum mopane*, *Acacia tortilis*, *Acacia karoo* and *Grewia flava*). In 1964 conditions were made worse by severe frosts and temperatures of -6°C in eastern Ngwato. Much of the browse was destroyed, and in some areas cattle losses were estimated at twenty-five percent. In October 1964 good rains fell in the southern Protectorate, but these soon petered out, driving temperatures steadily upward. Practically no crops were planted, and grazing was almost non-existent. It was during this year that many people drilled boreholes on the sandveld to the west of the traditional grazing areas. A small proportion of the large numbers of stock on the hardveld were then transferred, but by this time it was too late to make any significant difference. By May 1965 the situation was really serious: a few areas had grown no crops for six years, many had grown nothing since 1961, food reserves were either depleted or minimal, and stock were fetching extremely low prices—sometimes as little as R30—because of their poor condition. In addition, the culling rate in many areas had fallen by more than fifty percent. (In some areas, where the drought had been felt most, cows had almost ceased to calve.) The incidence of measles in stock had increased drastically, and the number of condemnations at the abattoir had quadrupled. It was at this stage that Cabinet declared the entire country drought-stricken and appealed for aid. For various reasons this aid was delayed: an assessment had to be made of the situation, requests submitted and processed, and grain shipped from overseas. Relief would have arrived earlier but for a major dock strike in the United States, from which the bulk of the food was coming. As it was, World Food Programme supplies eventually arrived in late September 1965.

The rains were late in falling, but finally, in February 1966, the drought broke. Although too late for any serious planting, they did restore a measure of grazing. In 1966/67 rains were good, and an excellent crop was reaped. In 1967/68 they again failed, resulting in a further year's drought, the last for that particular drought period.

Briefly, then, the drought commenced sporadically in the mid-1950's. The first year of general rain failure was 1960; the following year all but the Ghanzi District received good rains. During the next four years, drought was general, breaking in February 1966. The final year of poor, drought-producing rains occurred in some areas in 1968.

The areas affected

Although the drought was often described as 'total', this was not entirely accurate. Few areas received less than 300 millimetres in any season, and all received rain over an

extended period—usually not less than seven weeks—during the normal season. This meant sufficient rain for natural growth, but insufficient rain for crops. The areas hit worst were said to be those along the line of rail, particularly in the eastern Central District and the Kgaleang. Others badly affected were the South-East District, the Kweneng and the Ngwaketse areas. Conditions varied elsewhere. The Rolong and the North-East District both suffered; however, they received more and better distributed rains than the other areas, so the drought was not as severe.

Drought appears to have been felt somewhat less in the west, although rainfall was well below average. It is possible that people there were more accustomed to coping with dry conditions, or that there were far fewer cattle, so mortality was not so obvious. Crop-growing in the Kalahari usually takes place on small lands, with dry-area plants such as sorghum, beans and melons. These are supplemented, during a drought, with edible roots, particularly of the *mollopi*, *Besisa albiranca*, which are cut fine, ground and used as a porridge substitute.

In the Delta area of the Okavango, a certain amount of wetland ploughing is practised. Floodplains are cleared in autumn and planted in spring when the floods recede, well before the first rains. The effect of water-saturated soil combines with early rains to lengthen the season; thus, if rains occur early—as they usually do—and then fall, crops are not spoiled. In addition, because the Delta does not rely entirely upon local rainfall, water plants like papyrus and lilies do not suffer and are available as food.

Foot-and-mouth disease

From May 1960 to early 1966, foot-and-mouth disease (FMD) was almost continuously present in one part or another of the north. In fact there were eight outbreaks recorded between 1948 and 1970, although by far the longest period was coincident with the worst period of the drought. In almost every incidence, these outbreaks occurred in the Boteti River area, Ngamiland or the Chobe District and involved as many as 700 000 head of cattle and an equivalent number of sheep and goats.

In May 1960 an outbreak of SAT-3 type FMD was diagnosed at Nata and traced to the Boteti. The virus involved was characterized by low infectivity and avirulence. Shortly afterwards, a further outbreak, of SAT-1, was found at Sibani. This one was both virulent and infectious and spread rapidly to cover much of the northern Central District. At the same time, there was another outbreak of SAT-3 in the northern Tuli Block which spread to Dibeite. By October, SAT-1 covered most of the northern part of the country, while SAT-3 had died out. In June 1961, restrictions were lifted on the export of cattle east of the railway, but in September a fresh outbreak occurred west of the Ngwato central cordon fence. A severe outbreak in Namibia in July 1961 closed the entire west side of the country. Because the disease did not infiltrate Botswana, the area was re-opened in September 1962. As a result of all these outbreaks of FMD, cattle exports were restricted during the first two years of the real drought. The worst hit areas, however—those east of the railway line—were closed for the shortest period.

More outbreaks of FMD occurred between 1964 and 1968. Exports from the Boteti Makgadikgadi area was not contained until April 1966, and in 1968 the disease broke out in the Chobe District.

The Veterinary Department established its own vaccine production centre in 1963 as a result of the failure of imported vaccines. A system of regular inspection by mouthing break, research was begun on the incidence of FMD in wildlife, particularly buffalo, and a new cordon fence was constructed north of Makalamabedi.

Certain facts emerged. During drought, FMD is spread by illegal movement of cattle,

probably by people looking for new water and better grazing, or by those avoiding *mogau* (*Terretia harborii*), a poisonous plant eaten by cattle during very dry periods. Once animals in a weakened state contract the disease, it is often impossible to move them to crushes for vaccination, which results in the persistence of the disease. It was also found that drought-stricken animals required booster shots, in addition to single or even double vaccinations, before being cured of the disease. Research on buffalo revealed that they are carriers of the live virus, without actually contracting the disease, and are thus the probable cause of the infection in cattle.

Wildlife

Travellers' records and oral history indicate that during the last century certain species, such as wildebeest, hartebeest, springbok and gemsbok, were by no means prolific in the Kalahari, although there were vast herds of wildebeest and zebra on the Boteti and other huge herds in better watered areas. Hodson (1912), who travelled extensively in the first decade of this century, makes no reference to these great herds, yet by 1946 springbok had become so numerous that during the next four years countless thousands trekked twice across the Malopo. By 1960 wildebeest had so increased that herds of 100 000 were not uncommon, and there were probably more than 1 000 000 in the Kalahari alone. The hartebeest population is increasing rapidly. In 1962 they were fairly numerous, but in small herds; by 1972 it was possible to see one herd numbering 40 000 animals. Desert species tend to increase dramatically—given certain environmental conditions—reach a peak and then decline. Drought appears to provide some of the required conditions for this cycle.

The Kalahari wildebeest populations trekked north-eastward from 1960, presumably looking for moister conditions, since they are not well suited to a semi-arid environment. In 1962, Riney and Hill made a survey in northern Botswana for the United Nations, reporting: "Bechuanaland contains within its boundaries a great variety of game, including the largest concentrations of plains game occurring in Africa today." In 1963 the wildebeest seen by Riney and Hill died by the hundreds of thousands around Sun and Nata. Too weak to run, many were speared where they stood and their tails sold for fifteen cents. The Bushman Survey Officer, working in the Central Kalahari Game Reserve in 1964, reported to the Central Government:

"In late 1962 thousands of head died and the zebra were very nearly, if not totally, exterminated in that drought. A census I conducted in the northern part of the Reserve showed that the game population was below one percent of its normal for that time of year in many areas where there was nevertheless good grazing" (Silberbauer, 1964).

He had witnessed the cycle in its entirety: the vast build-up, which reached its peak in the Kalahari about 1961; the trek north-east, where Riney and Hill recorded it; and the collapse and death from lack of food and water in that and the following year. While the Kalahari herds are again increasing, there is little doubt that variable weather conditions precipitate the explosion and that drought destroys it.

Few records on wildlife utilization exist for those early years, but oral history indicates that three consecutive years of drought had turned arid land dwellers to extensive hunting. In the Kalahari alone, trophy dealers in 1964 bought and recorded 17 793 springbok, 8 040 gems, 2 845 bat-eared fox skins and 2 031 kilograms of ostrich feathers. One trader, in 1965, exported about 30 000 springbok skins from this area. Von Richter (1967), using only trophy dealer records, calculated that during the drought every man, woman and child at Salajwe had access to seven kilograms of game meat annually; at Kang, one hundred kilograms; and at Ncojane, ninety-six kilograms. How much was

actually utilized is difficult to say, but probably not less than three times this amount.

It was also during the drought period that other species vanished from certain areas. Zebra and giraffe disappeared from the eastern Nyvato, giraffe from the Ngwakise and much of the Kweneng, tsessebe and reedbuck from Nata, waterbuck from the Ngotwane, and sable from the Tati farms. No doubt many of these animals were hunted, but some species disappeared because of changing environmental conditions.

Effect on the veld

All reports by veterinarians and stock inspectors indicate that large areas of grazing had already been denuded by 1960 when the drought struck. This was ascribed to heavy overstocking of water points and to variable rainfall during the preceding six years. Perennial grasses do not thrive during periods of poor rainfall and often cannot survive long periods of drought.

The general picture, then, was one in which grass was almost non-existent within one kilometre of a water point, sparse and of little value for the next three kilometres, and slightly more adequate after that. One had to go at least ten kilometres beyond that before grass became sufficient to feed the large numbers of cattle at the water point. Even then, much of the perennial grass had been destroyed for an additional ten kilometres. By this stage, one had often reached the perimeter of another grazing area. Thus, cattle usually had to walk a considerable distance from their water point to feed. In a weakened state, they often could not travel the return journey in a day, which meant either thirsting or starving for a day. Because temperatures were very high—particularly during September and October—and grass fires a problem, many cattle sacrificed food for water. In the Kalahari, farmers tended to drive their cattle out to better grazing, perhaps fifteen kilometres from the water point, and allow them to make their own way back two or three days later.

In areas where mopane predominated there was practically no grass, so cattle fed almost exclusively on browse, particularly young plants. The general effect on the veld was extremely serious. Although cattle were transferred to new boreholes drilled in the sand-veld in 1964/65, the move came too late to remedy the ill-effects of overgrazing. In addition, the new areas were seriously weakened by four years' lack of rain, and many of the perennial grasses were in poor condition. The sudden influx of cattle, therefore, had a far more negative effect on the grass than it would have had they been moved at a more propitious time.

Boreholes and stock

When rainfall variability increased, in 1954, there were about 1 140 000 cattle in the country and an estimated 1 350 boreholes, of which 600 belonged to the Administration. By the first real year of drought in 1960, the herd had increased to about 1 280 000 head and boreholes to an estimated 3 050, of which 1 300 were Government owned. By 1965 the cattle population had decreased from a peak population of about 1 400 000 head to about 1 350 000. Boreholes had again increased, to about 4 750, 2 000 of which belonged to Government. Since boreholes were not registered, there can be no guarantee of the accuracy of figures given. Nevertheless their general rate of increase can probably be plotted against cattle numbers. With so many unknowns, calculations must still be approximate, but let us assume that two-thirds of the boreholes were working at any one time, that cattle occupied half of the Government boreholes, and that one-third of the total national herd was watered from wells, rivers or other surface water supplies. On this basis, then, in 1954 there must have been about 1 000 head watering at any borehole (excluding small stocks), in 1960 about 500 head, and 1965 about 350 head. From this it

TABLE 1
Cattle figures

Year	Cattle Population	Exports		Condemned	Local Slaughter		Annual Off-take
		Live	Carcases		Butcher	Owner	
1954	1 139 773	68 779	5 824 ¹	141	?	?	74 744
1960	1 317 236	7 871	77 279	1 427	6 893	6 404	99 874
1961	1 319 127	12 695	76 513	1 981	7 980	4 332	103 501
1962	1 351 778	18 777	90 252	2 972	9 469	5 363	126 833
1963	1 349 773	27 426	100 041	2 700	8 877	3 878	142 922
1964 ²	1 346 533	15 050	108 001	2 886	9 005	3 716	138 658
1965	1 097 322	19 568	136 414	5 177	9 343	3 306	173 808
1966	916 229	16 517	124 704	3 667	8 568	1 781	155 237
1967	1 104 722	7 645	89 385	1 457	6 617	1 299	106 403
1968	1 250 209	373	103 776	?	?	?	104 149

Note 1. Abattoir re-opened in September 1954.

Note 2. Abattoir was expanded in late 1964 from a through-put of 700 to 1 200 per diem.

No two publications contain the same figures. Those used are taken from Veterinary Department reports. There is little doubt that they are only approximations; however, as the method of collection did not vary from year to year, the percentage changes probably provide a fair picture of what occurred.

TABLE 2
Grain imports and local production

Year	Maize		Sorghum	Local ¹ Production
	Commercial	At Wages ²		
1959	76 490	510	3 111	?
1960	219 139	1 532	46 556	?
1961	91 487	13 281	8 076	?
1962	157 011	31 945	28 930	?
1963	176 337	35 805	54 745	?
1964	256 849	12 270	88 603	90 000
1965	426 945	141	209 898	50 000
1966	343 574	6 881	127 822	22 838
1967	164 050	2 344	21 095	797 000

Note 1. The above figures relate to 180 lb grain sacks.

2. Grain imported at wages refers to imports made by women who took grain at wages when working during harvesting on farms in the Western Transvaal and Northern Cape.

can be seen that during the early years of the drought, that is until about 1960, grazing areas were grossly overstocked. This, coupled with the variability of rainfall, must be the reason why veterinary officers reported in 1960, before the drought had really begun, that areas were bare of grazing.

In August 1960 the American Revolving Loan Fund provided money for boreholes, and in 1962 the Borehole Repayment Scheme began. It was not until 1964, however, that any real headway was made with drilling. Between 1964 and 1966, approximately 1 100 private boreholes were drilled, although in the following two years only about 200 holes per year were drilled.

The picture that emerges is one of steady borehole and stock increase until 1964, at which time there was a tremendous rise in borehole drilling just as the cattle population began to decline. The increase in boreholes probably prevented greater stock losses, but only with good rains in 1965/66 did stock again begin to multiply. Indications are that drought was not solely responsible for this tremendous stock depletion (nearly one-third of the national herd) occurring in the critical years. Much of the blame can be attributed to gross overstocking before 1960.

Co-operatives

By 1960 a number of groups had formed co-operatives, mainly for the purpose of running boreholes. These groups also tended to market their cattle together, thus cutting out the trader or dealer. A Co-operatives Law was passed in 1962, and a Government Department established in 1964. The original intention was to try to form grain-marketing co-operatives, the first of which was registered in July 1964, but because there were no crops that year, the co-operatives founded before they became established. Several turned their emphasis from grain to cattle when it was discovered that marketing directly to the abattoir fetched a better price than traders or dealers could pay. As a result, the Co-operative Department changed its emphasis from the establishment of agricultural and grain marketing co-operatives to cattle marketing.

Human relief measures

Initially, relief measures involved school feeding programmes in which children received a daily mug of (powdered) milk. This was then extended to include pre-school children and expectant mothers. District Commissioners also held a small vote which they used to help destitutes; this programme had been in operation for years.

After discussing various proposals with the Administration in 1962/63, the Oxford Committee for Famine Relief (Oxfam) began making funds available for the purchase of sorghum seed and agricultural training. In August 1964 the situation was recognized as critical and over the next five months 500 tons of mahut meal—meal containing eleven percent protein, five percent fat, two percent calcium and three percent phosphorus, with an energy value of 380 calories per 100 grams—were imported and distributed in areas of greatest need.

A United Nations nutrition expert, touring the north in September and October 1964, painted a more positive picture than might have been expected: most people had an average daily consumption of 170 grams of meal and some protein. He proposed greater agricultural diversion and a village level programme of nutrition education. With rains imminent, however, nothing further was done.

After Cabinet declared the country drought-stricken in April 1965, the Prime Minister inaugurated a National Relief Fund and an appeal for funds to alleviate the crisis. By June the situation had been assessed and centres set up in the worst affected areas to distribute food. Destitutes were registered at each centre and by the following month 23 000 people, mainly those near the line of rail, were being fed. Large-scale food distribution had begun by August, with more than one thousand tons of locally purchased mealie meal given out by local Famine Relief Committees, through an organization set up by the Ministry of Labour and Social Services.

The Government set itself five priorities:

- 1) To prevent human death directly or indirectly from starvation.
- 2) To minimize malnutrition among those who were most vulnerable to it (i.e., the children).
- 3) To help people to earn money with which to buy food.
- 4) To alleviate the effects of drought on the cattle industry by contributing to the long-term campaign against overgrazing.
- 5) To promote the quickest possible recovery of agriculture in the following season.

Certain measures taken earlier could not be further expanded, such as increasing the export of live cattle, expanding the abattoir and asking the South African Chamber of Mines to increase the quota for mine labour.

Assistance was obtained from the World Food Programme, in cooperation with the US Government, the British Government, Oxfam, the War on Want, the World Council of Churches, the Red Cross and many other organizations. Once adequate help was assured, a Relief and Rehabilitation Unit was established as a separate department under the Office of the President. In 1965 it was clear that ever increasing numbers of people were flocking to the towns. One of the first duties of the Unit was to stem this flood. To do so they tried to ensure that relief was provided at people's homes and not just in the larger centres.

Headquarters were set up in Francistown and Gaborone, staffed with Regional Officers, each with four Relief and Rehabilitation Officers (RRO's) and, between them, seventeen International Voluntary Service and Peace Corps volunteers. A major food distribution centre was set up in Gaborone, and food stores were erected along the rail line and in major centres. Ration points were established in 232 places, with their own small stores and ration clerks. The World Food Programme, which was responsible for delivering food to Ramatlaba, had agreed with the Administration that the food be used to promote

community development projects, such as the building of classrooms, teachers' quarters, toilets, small dams and district road extensions, as well as village cleaning and the clearing of tease-fly-infested wetland for future agricultural use (using a labour force of 540). Villages, in conjunction with District Councils and District Commissioners, were asked to draw up projects which were then submitted to the RRO's for approval. A project leader was assigned to each one with the required number of workers to assist him.

At first the projects were badly handled since there was little supervision and few trained workers. Many of them were village cleaning, hole filling or road repair schemes. By September 1966 a much better selection of projects had been made, and the programme was working reasonably well. At its peak there were 686 project leaders and 37 030 workers employed. In all, a total of 823 projects were completed, comprising the building of 163 classrooms, 195 teachers' quarters, 19 clinics, 88 soil conservation and dam projects (mainly the latter), 147 buildings (stores, rondavels, offices and community centres), 223 toilets, 662 miles of road (building and repairing), the destumping of 324 acres of land and the afforestation of 24 acres. (It is interesting to note that ninety-five percent of all the volunteer workers were women.) By June 1967 the number of people working had fallen to about 15 000, and the project ceased in September of that year.

One major facet of the WFP operation (generally known as Food-for-Work) was its association with *Ipelegeng* (literally translated as 'self- uplift'), a programme started by the Community Development Department. It was run at village level, with villagers providing some of the materials and most of the labour needed for the development project, while the Department supplied the remaining materials. *Ipelegeng* had begun before the height of the drought, and Food-for-Work tended to displace it; however, the results achieved by the latter's programmes seemed to put new fire into *Ipelegeng*. After Food-for-Work ceased, the Community Development Department did its best to carry on with *Ipelegeng*. Although it lasted for some years, however, it was never very popular and eventually ceased.

Other relief measures

Efforts begun in 1963 to alleviate the agricultural crisis had not been far reaching, largely because the length of the drought was underestimated and because funding was not sufficient. Loans had been obtained, however, for private borehole drilling, agricultural extension—including an information programme for which radios were distributed—provision of sorghum seed, and the co-operative movement.

It was not until 1965 that the dire seriousness of the situation was fully appreciated, although the signs had long been evident. One of the first of the new programmes was the Famine Relief Tractor Hire Unit, financed through the Development Bank and using tractors hired from Massey Ferguson Tractors Ltd. Ploughing started in November 1965, with applicants receiving loans up to R30. The cost of ploughing was R3 per acre. Private contractors also joined in the scheme, and by March 1966, 7 565 acres had been ploughed. In 1966 a further twenty-three Government tractors were added, and about 9 800 acres ploughed. Because of the poor season in 1965/66, few of the loans were repaid, which hampered ploughing in the following season. Nearly R95 000 was owed by March 1967.

Approval for R50 000 for the purchase and treatment of seed was not received until July 1966, making suitable seed extremely difficult to obtain. In October about 5 000 bags of seed, mostly sorghum, were distributed. The WFP agreed to supply considerable quantities of stock feed—up to 20 000 tons—consisting of whole maize. The first consignment weighed 4 800 tons, of which 1 400 tons had to be processed for human consumption, as human supplies had not yet arrived. The feed was distributed to the Kgatleng, the eastern Ngwato and the North-East Districts only. The initial programme

ran from August 1966 to January 1967. As a result of good rains it was discontinued in January and the remainder of the original supply was not required.

A Purchasing Committee was formed to buy breeding stock in western areas and bring them onto quarantine camps. The price offered on the Boteti River was such that only fifty-three head were bought. With this experience, another attempt was made in the southern Kgatleng, but the scheme never really came to anything. Areas in Odatwe, Nata and Dukwe quarantine camps were used as relief grazing for 2 000 head of cattle moved from the east and 315 head moved north from Mochudi.

A Mechanical Fodder Unit was set up in the Barolong Farms to make hay. Funds for this, however, were only received in mid-August 1966, too late in the season for those in charge to do anything other than assess some of the working problems. At first the Unit could produce only three hundred bales of hay per day. (Two thousand bales were sent to Mochudi.) Although it was moved to Nata and worked well after the 1966/67 rains, they had been so good that the hay was not needed until two years later. The cost of the Unit and the transport of hay was so great that one doubts it was really economic.

A final programme involved the emergency drilling and equipping of boreholes. In all, ninety-three were drilled by September 1966, and of these all but eighteen were successful. The bulk of the boreholes were drilled on the sandveld in the Ngwato, Kwenya, Ngwaketse and Nata areas. It took considerable time to equip all of them, and even then some were not actually stocked immediately because of arguments arising over various costs. Drought-relief boreholes continued to be drilled over the ensuing years, but mainly on State rather than tribal land.

Good rains in February 1966, followed by a good season in 1966/67, resulted in good crops and a partial recovery of some of the least depleted grazing areas. As a result, most famine relief measures ceased in early 1967.

The 1968 drought

Rains failed in the south between the end of November 1967 and 19 January 1968, while in the north-west crops grew normally. Ploughing took place in the Rolong and parts of the Ngwaketse, but by January 15th most people had returned from the lands to their villages because of the lack of water. By January 1st Government realized the situation could become serious and began to consider action. Initial application for aid was made to the WFP in February. Under the Ministry of Local Government and Lands, the Relief and Rehabilitation Unit was re-established to work directly with the Community Development Department. An assessment was made of the food needed, and plans were formed for relief schemes which could be operated in conjunction with existing school-feeding programmes, decentralizing them as far as possible to keep people close to the lands. Soon it was discovered that many people, particularly in the Kweneng, considered it Government's duty to feed them during a drought and had little intention of shifting for themselves.

In April Government decided it was necessary to establish a permanent organization to monitor drought and to prepare for future eventualities. A committee was formed in May, of senior officials in the ministries and departments concerned, to ensure that the Food-for-Work projects initiated would be the most appropriate and would conform with the National Development Plan.

The relief programme began in May. By the middle of the month it was obvious that more areas had been affected than was previously believed, and that stock would have to be moved from areas in the eastern Ngwato.

A further application for food was made to the WFP in 1969, and a new programme commenced on July 1st. In 1970 stock began dying in Ngamitland, Kgatleng, Kweneng, South-East District and the Ngwaketse, resulting in a further stock-relief programme.

The following points may be made in summation:

- 1) Although the signs of impending drought must have been evident, when it struck in 1960 the Administration was quite unprepared for it. By 1965 it had reached a peak, yet still no proper measures had been taken to alleviate it. Consequently, by the time any-thing on a national basis was implemented and functioning, the drought was finished.
 - 2) While cattle numbers had doubled since the 1930's drought, when considerable losses were suffered, grazing areas had not expanded in proportion. Consequently, by 1960 when the drought struck there was little grazing left and cattle were not in condition to withstand it. It was, therefore, not just the drought which killed the cattle, but also prior overgrazing.
 - 3) Foot-and-mouth disease becomes a much greater danger during drought periods. Movement increases, sick animals are difficult to collect for vaccinations and, when run down, are not always cured with one or two vaccinations.
 - 4) Variable weather conditions may cause wildlife population explosions, resulting in massive ticks and huge die-offs. Better use should be made of these animals before their value is lost.
 - 5) In remote areas during drought, extensive use is made both of wildlife-products and meat-and of wild food.
 - 6) Effects on grazing and browse near water points are extremely severe during drought.
 - 7) Relief measures, particularly the initial issue of free food, created an attitude among people that Government had an obligation to feed them.
 - 8) During the 1960's drought Government's approach to the phenomenon changed. It acknowledged the necessity of constant monitoring, of keeping a relief organization in readiness, of working through existing departments, and of integrating projects with the Development Plan.
 - 9) Attitudes in the Department of Co-operatives changed as well, attention focused on cattle and consumer rather than grain-marketing co-operatives.
- There are three other conclusions which appear likely, although no absolute proof exists:
- 10) It is the smaller stockowners who keep their cattle in the most overgrazed areas. They are, therefore, probably the most affected by drought. Many must lose most, if not all, their cattle and have neither the money to buy food nor the means to plough. When the drought breaks they have no way to recoup their losses. Those who suffered in the 1960's drought now comprise about fifty percent of the non-stockowning population.
 - 11) The attitude towards selling stock for slaughter has shifted, with owners now more anxious to sell. This may well have resulted from the drought when many people helplessly watched most of their stock die.
 - 12) From the fact that ninety-five percent of the volunteers in Food-for-Work were women, it seems obvious that it is they who are hardest hit by drought. Men have opportunities to seek work elsewhere which are not available to women.

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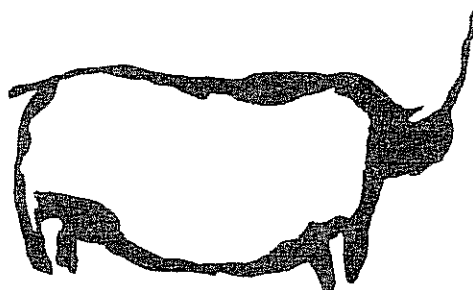
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