The Drought in Nigeria: Cause, Control and Prevention

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It is generally accepted that about a third of the land in the world is almost useless to man because of its desert or semi-arid character. Modern technology has various theories of how to reclaim some parts of desert lands and improve the semi-arid zones. I do not disagree with these theories, but it seems to me that the forces involved are too great for us to contend with and it would probably be wiser (after recent droughts) to concentrate more on what we have with expediency than trying to extend our hold over deserts. One of Professor Taylor's maps of Australia labelling vast areas of land "useless" have appeared in well known textbooks, and it would be possible to demonstrate that, with all the great improvement schemes and extensions of cultivated land which have been made so far, mankind has hardly done more than nibble the desert margins. On some regions even it seems that the desert is actually gaining ground. It is not for me in this paper to discuss the ways and means of conquering the arid and semi-arid zones, but the point is, it raises food for thought as to where we place our priorities considering the rapid rise of human population and the availability of fertile land.

A lot of us think of drought as shortage of rainfall. This may be true to a certain extent, but it is more likely that it is caused by a combination of many factors. I say this because you may have two areas with the same amount of rainfall but because of the higher temperature and

high evaporation rate one of the areas will experience drought whilst the other will not. This may be temporary in areas where there is normally an excess of water with a sufficient reserve in the soil to keep plants alive and underground water for exploitation. But in those areas where these conditions don't normally exist one drought season foretells another disaster if the next season is just as bad if not worse. However, the dictionary defines drought as "continuous dry weather causing distress: want of rain" and, a slightly more scientific definition has it that it is "the condition in which potential evaporation exceeds rainfall". There is no doubt in my mind that the immediate cause of drought is either a sudden shortfall of rain between one year and another or, more seriously, a gradual falling off over a number of years in the total annual rainfall. Either situation can be exacerbated by an erratic distribution of the rainfall, and, possibly, poor distribution of itself alone, particularly if occurring several years running, could give rise to drought. The drought will always be relative to the variations of these conditions compared to the normal (or average) rainfall and in the Sudan ecological zone (and even more so in the Sahelian zone) some degree of drought is the rule rather than the exception.

The cause, therefore, of the current situation in this country, and doubtless for our neighbours, has been a combina-

tion of a series of years with ever decreasing total annual rainfall exacerbated recently by erratic distribution as well. This situation might also be aggravated by hotter and drier dry seasons, but more likely it is a total climatic picture neither situation entirely due to the other.

The question we then hear asked is "How does one control or prevent drought?" and the answer must be that, as it is a climatic phenomenon and man has not yet devised anywhere a means whereby he can change a climate, one can neither prevent or control drought. Nor are we yet in a position to predict when and for how long drought conditions will occur. Our records are too short to show any recurring pattern or circumstances that may be safely said to be precursors of drought. We can only be safe, in our present circumstance, by observing that each successive year of the last three or four has seen a worse situation than the former and prepare for the possibility that next year and even the one after will be as bad if not worse. We have in short to a change in climate. I am talking of course of the situation as it affects livestock and not people. With the resources of this country at this time it may well be possible to provide water and food for the human population in the drought affected areas so that they may remain there until climatic conditions improve, but it does not make economic sense to try and maintain our flocks and herds by the same means.

In a symposium on animal production with particular reference to drought one normally concentrates on cattle, but this time it must include the smaller ruminants which are also subject to our traditional husbandry. The traditional way of husbandry has always been a seasonal transhumance. During the rainy season the traditional cattle owner (which com-

prises over 90% of our National herd) moves from the south to the north where he finds sufficient water and grazing and at the same time gets out of the trypanosomiasis problem and restores his animals to more normal health. One should also remember that he gets the advantage of crop residues in return for his manure. As the real dry season approaches he is forced to move down south again because of lack of forage and water. He finds that the problems presented by these two factors are more serious than the tsetse problem he faces in the south, nonetheless he always tries to avoid the more dangerous areas of trypanosomiasis risk. One should add that this movement is not entire as some animals are left behind and others from the more northerly Sahel countries move to the area left by the traditional herd. This age long movement has gradually resulted in overgrazing both during the rainy and dry seasons. Without the added hazard of drought we have been aware for many years that the wet season grazing areas of the northern most parts of the country have been under increasing grazing pressure due to expansion in cattle numbers and the extension of farming brought about by the increasing human population. They are now under dry season pressure as well and get no rest, as when our own cattle move towards the south so do those from further north move in to take their place and hard pressed pastures get little or no chance to recuperate. It was with this situation in mind that steps were taken to try and deal with the trypanosomiasis situation by seeking ways and means to eradicate the tsetse fly from its habitat which was one not only favourable to the fly but also to livestock if only they could safely use it. In this we have been tremendously successful and already 66,000 square miles of formerly infested terrain

have been cleared of the fly-an area equal to 80% of the whole of the six southern States put together.

Towards the end of 1972 and early 1973 it became quite clear to most observers that one of the worst droughts ever is imminent. The effects have been accumulating since early 1970, but the natural tendency of laymen and governments to hope against hope prevailed despite repeated fears expressed by the professionals. It was only when crop failure, starvation and lack of water began to hit both human beings and animals that Governments began to realise that disaster lay ahead.

The series of bad years started from 1969/70 season when rainfall average began to fall and temperatures rose high thus causing high evaporation rates. In addition during these years the distribution became uneven though in some of those areas the total amount of rainfall was more or less the same. Crops did not get the rain at the right times-they either wilted or drowned or in many areas the rains stopped just at the time the grains were coming to seed. As a result of these bad years both the water and forage supplies began to dwindle, particularly pastures as most of the grasses are annuals and were not able to seed.

The effects of the drought have been severest on those animals not able to be moved away to more favourable conditions. These have been all classes of stock kept by villagers and townspeople in small numbers and those cattle owners who have long ago abandoned large distance seasonal movements, but having settled down to farming as well as stock owning. Even those who customarily send herd followers away for the dry season would have also to add the milking cows and calves in these circumstances. Many deaths from thirst and starvation

have resulted but the worst has been averted by the traditional movements to more favourable areas. Losses are not only due to direct mortality but also to forced sales in order to keep herd numbers within the limits set by available water and fodder. Often these sales are not of the class of stock that could most easily be spared and many females of a useful breeding capacity have gone down the trade cattle routes for slaughter. This has resulted in a supply of animals for beef above what would otherwise be available and often at a lower price than would be got if the sales were not forced ones. If and when the drought recedes the supply of animals for slaughter will dwindle considerably as owners conserve herd numbers and rebuild their herd. Many cattle have even been able to maintain good condition, but for them, and even more so for others under stress of malnutrition, their resistance to disease is lowered the reproductive cycles and fertility greatly reduced and milk yields depleted.

The effects of the drought have to be given immediate consideration in order to save both human and livestock populations. This will involve short and long term measures to be undertaken by the nation (from its own resources?) and where possible with the assistance of international organisations. The question is then-what do we do to adapt to these drought conditions so as to keep up the production and productivity of our national herd and flock? To my mind the solution lies in rehabilitating the northern Sudan Zone which is now tired of being over-used and almost being turned into a desert. This area now will have to have a complete rest or the next three or five years in order to allow rehabilitation work to be carried out with only a few cattle and flocks around. In other words

our national herd can no longer be maintained in the deteriorating conditions of the northern Sudan Zone. The national herd must be given encouragement and incentives to move into the Guinea Zone even at the risk of close contact with the tsetse fly, though the areas of lightest challenge must be identified for use in this fashion. We should also not forget that very substantial areas have been freed from tsetse infestation and need only development—they include the North East and parts of Kano and North Central States. Incentives to relocate the national herd, or more correctly part of it, whilst rehabilitation work is being carried out in the northern Sudan Zone, would include the provision of watering points in these areas and a comprehensive health coverage particularly in tsetse eradication and control. I have emphasized tsetse control because not in all of these areas can we eradicate tsetse and also because I think of the two evils i.e. starvation or trypanosomiasis, the former is the worst. The outlay in money and manpower is, of course, immense and the execution of the programme requires a great deal of concerted efforts. To the economist this may be untenable but to a livestock man like myself it is better to sink this capital now (whilst the oil is flowing) so as to lay a sound foundation for reaping the benefits in the future than to end up with no animals at all. The most seductive of all incentives and also the most controversial one is now necessary. In order to get the confidence of the traditional cattle owner in this country I believe that we have to remove “Jangali” as a form of taxation. I am sure you will all agree with me that this is one of the biggest constraints on livestock development in this country. “Jangali” should be waived for those joining in authorized schemes of movement

and relocation and it is being recommended to the Federal Government that it makes funds available both to recompense those authorities who will lose revenue by the outflow of cattle and to assist those that will have to find funds to provide the amenities to keep the owners and their cattle healthy and content in the areas into which they have moved. Get rid of this tax, provide the infrastructures of forage and water and adequate health facilities and you have introduced a factor which will catalyse the response of cattle owners and the prospects of a new type of livestock owner which we are looking for are made much brighter. This in a nutshell is the centre of the socio-economic and political problems involved.

I have tried in this paper to give a brief account of the drought situation in this country and it is my firm belief that most of us know what we are faced with and the possible solutions to the problem. The cause of the drought and its effect are obvious and we must try to adapt ourselves to the changing climatic conditions. We should no longer expect any miracles as the situation is likely to be worse. It will be a useless venture to try to keep the bulk of our animals in the northern Sudan Zone as this will undoubtedly lead to worse conditions. The area has to be given the rest it needs whilst we consolidate our efforts on the development of the more southerly areas. As I have said this means a change of attitude and to realistically face the socio-economic factors involved. We know we can neither control nor prevent the occurrence of drought. The measures which I have suggested to be taken I believe are essential to serve our livestock and the people who husband and live by them and if in taking these measures certain heads must roll I think we should let them roll.