

CASE STUDY: AFRICA

COPING WITH DROUGHT IN SOUTHERN AFRICA.

Derrina C Mukupo*

SUMMARY

In 1991/92, countries in Southern Africa faced potential catastrophe from the effects of severe widespread drought which decimated crops, particularly maize and contributed to great losses of cattle due to disease and stress sales. Countries in the region had to import grain to hitherto unprecedented levels to meet the shortfalls for both market demand and relief requirements. Against the background of widespread poverty; high levels of child malnutrition; implementation of stringent structural adjustment programmes and a largely underdeveloped and dilapidated rural infrastructure in the areas where need was greatest; Southern Africa with partners managed to prevent widespread starvation except for relatively small areas within conflict zones of Angola and Mozambique. Infact, in countries that were not at war it would be difficult to attribute any of the deaths during this time to the direct effects of the drought. Most of the region avoided outright free distribution of available relief resources and emerged from the experience with valuable lessons for the way forward in reducing vulnerability and coping with future disasters.

INTRODUCTION

The drought that hit the southern African region was the worst this century and affected approximately 20 million people in the ten countries that make up the southern African Development Community (SADC). Within each of these countries, the physical extent of the drought varied. But, the immediate and long term implications were most serious for rural agricultural communities whose main source of food and income is closely linked to agricultural production. Over the years, environmental degradation such as deforestation, overgrazing, inappropriate agricultural practices, lack of water conservation measures have served to make the effects of subsequent droughts increasingly severe (Frankenberger 1992).

Drought, though localized as an ecological phenomenon has far reaching implications beyond the immediate areas affected. Rural areas and small scale farmers in particular, supply the bulk of urban food requirements usually at very low cost, sometimes on credit. Other dangers during severe drought are posed by low water tables leading to difficulties in accessing sufficient water for domestic use and for electricity generation. A classic case was the city of Bulawayo during the drought where at some time even mass evacuation of residents was considered due to severe water shortages. Outbreaks of Cholera and dysentery were rampant in shanty compounds bordering the urban areas of Zambia during the drought (Mukupo, 1993).

But by far the rural population was the worst affected in that most of their immediate food supplies, their means of producing it (draught power) and their income sources to acquire it were all adversely affected at a stroke. In the SADC region, the majority of livelihoods are agricultural dependent. In four member states, Malawi, Tanzania, Swaziland and Mozambique

over 80 per cent of the population is dependent on agriculture. Even in mineral rich Angola, Botswana, Zambia and Zimbabwe the proportion is still above 70 per cent. In addition, agricultural based industries provide the bulk of whatever income earning chances there are in the rural areas outside the sale of crops. Such industries are bound to scale down or completely close after a poor rain season. This curtails supplementary house hold income.

Within the geographically drought affected populations, drought has different implications for the affected groups depending on how well placed they are to cope with the effects such as crop failure and water shortages. Inevitably, some groups are more vulnerable either because of their physiological status or a limitation in the number of alternatives for survival available to them within their resource endowment. Geographically, those groups located in remote areas and served by poor feeder roads with minimal interaction with other areas are more vulnerable. Physiologically, young children, pregnant and lactating women, the handicapped and the aged are vulnerable especially if they do not have access to a family support system. Socially and economically, female headed households, orphans not yet integrated into the extended family structure and resource poor farmers are also vulnerable during drought. Sometimes these elements of vulnerability are combined within the same household to multiply the overall levels of vulnerability.

BASELINE VULNERABILITY OF THE REGION

Vulnerability is defined by Borton and Shoham (1991) as an aggregate measure for a given population or region of the risk of exposure to different types of shocks or disaster events and the households ability to cope with these events". Drought, being the major shock that it was, served to highlight the underlying vulnerability of the rural communities of the region and that of particular types of households. Recognizing that individual household vulnerability is highly contextual, there are still some elements that can fairly be generalized to the larger part of the region to explain the implications of such wide spread drought.

Poverty

Poverty, particularly rural poverty is a phenomenon that is widespread in all countries of the region. Even in countries recording improvements in overall economic performance such as Botswana and Malawi, two thirds of the rural population is living below the poverty datum line (Thompson, 1993). Agriculture, the mainstay of rural livelihoods does not provide rewarding returns for the strenuous labour inputs, thus most of the households produce barely enough to live on and in the occasional good year some surplus for sale. Using welfare as criteria for denoting poverty and nutrition status as the one proxy indicator that can be used to denote the level of this welfare (FSG, 1992) then poverty is a major problem in the region placing households at risk during a crisis such as drought. The fact that chronic malnutrition (stunting) accounts for more than 70 percent of the problem in most of these countries point to the long term deprived conditions that the children are born into. For households living on the borderline alternatives for coping become limited in a major crisis.

Low/Undiversified Agricultural Production

A combination of many factors such as mono-cropping, declining soil fertility and other environmental degradation, high fertilizer prices and population pressures to mention but a

few, have over the years managed to make agricultural production of small scale farmers less varied and rewarding. Farmers in Malawi, Zambia and Zimbabwe grow a yearly crop of maize on permanent fields which they mostly sell to the grain marketing boards as they do not have sufficient capacity for storing this highbred crop on their homesteads.

Furthermore, crop diversification has been declining at a fast rate due to a combination of unfavourable agricultural policies and practices that have resulted in the growing of single less drought tolerant crops such as highbrid at the expense of the more resilient millet, sorghum and cassava. This has made the food security situation of families in drought prone areas more precarious.

Low Returns from marketed Crops

A long history of state controlled marketing lead to a situation where small scale farmers sold their crops to these marketing agents at very low prices, thereby making very little money on their produce. In the are of consumption and production subsidies as was the case in Zambia over along period of time the farmers were still able to buy back some of this food at subsidized price when need arose. But with the advent of structural adjustment programmes and market liberalization, most farmers are not able to afford grain once sold to the agents because price increases by as much as 150 percent. Rural areas in Zambia are often experience seasonal food deficits for about three months until the new crops mature in April. In Malawi, over half the small scale farmers who own less than .5 acre of land have to do food-for-work on other people's fields in order to make up the seasonal shortfall.

Enviromental Degradation

This has been a cumulative effect especially in areas of unstable terrain such as high rainfall areas, hillsides and valleys. Deforestation is widespread with the increasing use of charcoal as a main source of alternative income and energy, and in areas where the `slash and burn system of cultivation has been extensively practiced. During drought, the use of charcoal burning and selling as a coping strategy increases the danger of deforestation posing further danger to the environment. Environmental degradation has implications for the availability of wild food sources in time of shortage such as fruits, honey and various vegetables that are common property to be utilized in times of need.

Diseases

Africa has always born a high disease burden that constrains improvements in livelihood since most of the input is human labour, either own, family or hired. Malaria has for a long time accounted for the loss of many working hours from otherwise able bodied adults. With the advent of AIDS and an increase in long term debilitating diseases such as Tuberculosis and cancers many families are finding it difficult to cope with the loss of their productive capacity and the added stress of caring for terminally ill patients for long periods.

Population Pressure

Sub-Saharan Africa's population growth rates are some of the highest in the region averaging about 3.5 percent natural increase. Food production and economic growth rates are said not

to be keeping up with this population growth rate. The bulk of the population is made up of young children under 15 years of age. In many countries, children below the age of five years make up twenty percent of the total population. Women account for the larger portion of the population in all the countries and the proportion of female headed households can be as high as 60 per cent of all households as is the case in Botswana (Balbase et al, 1993). In these households the problem of high dependency ratios is even worse with adverse implications for availability of labour for crop production and for other chores that may require to be done.

Un/Underdeveloped Rural Infrastructure

Rural areas are in many cases poorly served with infrastructure such as telecommunication, roads, markets, medical and permanent water sources. They rely on their own established networks and natural sources such as those for food and water supply as opposed to partially relying on the market. In the event that these sources are threatened it becomes very difficult to reach these population groups through conventional channels of assistance.

Macro Economic and Social Environment

The story of vulnerability in the region would not be complete without mention of the economic difficulties that the countries are grappling with for over a decade. Economic decline experienced by the countries starting in the mid 1970s through the 1980s, followed by the IMF and World Bank prescribed structural adjustment programmes being implemented in each of the affected countries had the combined effects of limiting government capacity for assistance. At the same time, households own capacities to cope difficult due to unstable economic situation reflected in increasing and unstable prices for basically all commodities have been adversely affected. Meantime incomes have only increased at very slow paces with actual purchasing power eroded during the intervening period. In Zambia the price of the main staple increased from 219 Kwacha per 25 Kilogrammes of breakfast meal to over 2000 Kwacha within a period of one year due to a combination of currency devaluation and removal of consumer subsidies.

The hardships being faced by the urban low and medium income families who in most cases supplement the low incomes in rural areas through remittances is said to have severely curtailed this long standing family support system, thereby placing hitherto recipient families under further stress.

Civil Conflicts

Conflicts in Angola, Mozambique and South Africa had lead to extensive damage to infrastructure at least in the first two countries, displaced thousands of people and placed tremendous burden on neighbouring states who had to shelter refugees in addition to their own internal economic difficulties. The population that remains within the war torn country may not be effectively reached due to restrictions placed by the warring parties, leading to un necessary loss of human life to starvation.

Erosion of Coping Mechanisms

Drought is endemic in most countries of the region and within localized areas people have over the years developed ways of coping with normal drought conditions. However, each drought stresses the affected population to some extent and in the process of adopting various coping strategies the resilience of the communities to adequately cope is increasingly eroded. Insufficiently mitigated droughts and often times relief activities undertaken without due appreciation of the people's own coping strategies and the need to strengthen these within the context of relief, have left the communities more vulnerable to future droughts. In this way, some groups have lost invaluable survival techniques that their fore-parents used for decades. For example the Tonga of the Gwembe Valley in Zambia and Zimbabwe used to have an extensive knowledge of gathered vegetables and roots that sustained them during drought years since their areas are drought prone. They also grew mostly drought tolerant grains such as sorghum and millets. Some of the knowledge and processing practices have since been lost because usually relief comes in early enough to preclude the practice of such mechanisms.

SPECIAL VULNERABILITY OF WOMEN AND CHILDREN

When drought strikes, two things are almost immediately affected; water and food availability from own production. Except where water is required for animals, ensuring household food production and fetching of water are the responsibility of women even in non drought times. In Zimbabwe eighty percent of rural communal farmers are women whilst in Zambia women grow "food crops" while men concentrate on growing cash crops. Needless to say the same women provide the necessary labour for planting, weeding, harvesting and transportation that will be required on the men's crops. With recurrent droughts these responsibilities are becoming harder than ever to be fulfilled by women especially those whose households have a high dependency ratio as is usually the case in Female Headed Households (FHHs). FHHs make up 24 per cent and 18 percent of total households in rural and urban Zambia respectively and 30 per cent of the households in Malawi.

Despite making up the majority of the farmers women farmers are among the poorest of this category. They often do not have access to necessary production inputs such as draught power and other improved farm technology. In Africa, increase in agricultural production is a function of increased area cultivation determined by availability of labour, the one resource that female farmers are constrained in.

Women farmers in Africa are rarely considered "farmers " by credit ad extension agents because they usually grow non marketed crops that are not earmarked for support through these systems. Thus these critical inputs for improving the yields and increasing area under cultivation usually by pass the majority of food crop growers, the women. Women also do not usually have collateral to support their loan applications. This is so because most of the land used for growing the food crops is owned by some male members of the family whose written consent must be produced in order to borrow against such land. In countries like Zambia, women undergo tremendous trouble to secure title deeds to land without the consent of their husband. This is because women are regarded as minors not qualifying to own land in their own right. Group loans for which collateral is normally waived are also not very accessible to women since they often do not qualify to belong to "farmer" organizations.

In this way, women have continued to be confined to growing crops that have only gone into

providing food for the family with very little surplus for sale. Thus they have remained subsistence farmers without much chance of breaking out to produce more than the consumption needs. Most women with a little help have even more capacity than men to produce sufficient to break out of the perpetual poverty. In drought these production mechanisms that are solely rain dependent are highly vulnerable with very low capacity to recover in the short run.

Women assume the primary function of looking for gathered foods to meet the shortfall during a drought which is seen as a mere extension of the food production function. This in addition to the roles of fetching water and firewood all of which become more difficult to find in nearby places during drought. In this way women expend a lot of energy and time in trying to find these necessities. Because of these assumed functions of assuring family food supply, women do not hesitate to enroll in food-for-work programmes, giving the impression that such programmes specifically target women.

Furthermore, women's alternatives for assuring the livelihood of their households are severely limited during drought because they receive lower wages than their male counterparts in any type of work or employment. In addition, income generating activities such as fishing, cattle sales and charcoal burning are the domain of men who have the skills and energy to fully participate in these (UNZA, 1993).

In times of shortage the average African woman would place her own needs for food behind that of her children and spouse. The latter have first call on any food that the family has especially when the scarcity starts getting severe even though her own physiological needs may be more than these two groups as is the case in late pregnancy and lactation. In this way the woman becomes more vulnerable to energy and nutrient deficiency.

The woman is also the primary care giver in the family in case of illness. Childhood illness proliferate during drought including fatal contagious diseases like cholera. The woman is placed at further risk often life-threatening and increases exhaustion levels due to the constant calls for nursing. Besides maintaining home and personal hygiene among her family members become more taxing due to the difficulty involved in finding water and fuel for cooking (Ibid 1993).

Children are particularly vulnerable during drought due to different pressures. To begin with their physiological state is still very insecure, requiring high value food, health and care. All these three aspects are difficult to assure during drought. Infectious diseases proliferate during drought including diarrheas which play such havoc with children's health and nutritional status. Mothers are constrained in the time available for care and by hand that can be spared would be fully employed in assuring survival needs for the whole family such as working or gathering foods or doing piecework in order to find extra income to buy food. With the general reduction in household food availability children would be the first to manifest signs of deficiency in either nutrients or energy. Increases in child malnutrition follow even in the best run drought relief operations. In countries of the SADC region children malnutrition is a chronic problem with almost half the under five population stunted. With such baseline figures the situation of young children is precarious indeed during any additional stress.

School children are not spared during drought in that they have to pitch in and help maintain the family by either helping look for gathered food. As family food stocks become depleted, there comes a time when school going children leave home for school without breakfast nor a packed meal to eat at school. As soon as this level is reached absenteeism becomes common in schools with many children opting to stay at home and engage in more immediately productive ventures, thereby missing valuable opportunities for learning. Sometimes even the teachers are preoccupied with securing their own food needs such that even the quality of learning is affected.

Women in conflict situation who have to leave their homes to refugee camps face different types of hardship during a drought. The movement from their familiar territory cuts them off from the traditional support structures that act the first line of defence to cushion drought impact. Although the UNHCR provides the basic ration with water distribution if the need arises, there usually is need to supplement this ration if only to make it more familiar to their home diets. But living in unfamiliar territory limits the options available for gathering and inter family support networks. Many of the women and children are also in a state of emotional trauma due to separation from other members of their families.

COPING WITH THE 1991/92 DROUGHT

Virtually all countries within the region went through the drought without significant loss of life despite the tremendous odds pitted against them, collectively and individually. There was demonstrated a perfect situation of maximum utilization of available resources and cooperation starting from the affected communities going through the ranks to the national and international structures. Although the national governments and the international plus local NGOs should be recognized for their tremendous efforts in moving and distributing relief, credit is due to the local populations within the affected areas who drew upon their long established survival mechanisms to avert the ultimate effects even in areas where relief was late in coming such as Kalomo in Zambia.

In countries such as Botswana, success could also be attributed to a good government response mechanism that has been established over years of drought experience. It was clearly evident that those countries and communities that had some degree of institutional memory accumulated through previous experience of a similar situation were better prepared in responding to the severe situation presented by the drought. The following are some of the strategies employed in the different situations to ameliorate the effects of the drought:

HOUSEHOLD COPING MECHANISMS

Communities that have lived in drought situations have developed some long term strategies for minimizing the impact of low rainfall which they expect in some years. These take the form of diversifying crop production with the full knowledge that different crops respond differently to reduced water supply, they tend to grow drought tolerant crops such as millet and sorghum as main for grain, plant early and have well developed knowledge of the locally available substitute wild foods including how to process them into safe foods if need arises. Such households also tend to diversify the forms in which they keep their resources always trying to spread risk. They tend to keep the more water resilient animals such as goats and other smaller livestock that can easily be liquidated for cash in times of need such as chickens

and ducks. They also tend to prefer donkeys for draught power instead of the more susceptible cattle. Thus when drought strikes they are generally less vulnerable.

During drought resulting in food and water shortage, households draw on these resources in order to minimize impact starting with those alternatives that commit the least of their resources and thereby threaten their long term livelihood sustenance. This is the general strategy adopted by the families within the region to stem the more serious affects of the drought. It must be said that the exact strategies adopted in each area were specific to the local situation and ultimately tailored to the resource situation of each family. Some are highlighted here to depict the situation.

Early survival strategies

Generally these strategies aim at prolonging the available food stocks with minimum engagement of household productive resources. They include reducing the overall number of meals take by the households, reduction in ceremonial food sharing such as feasts and weddings celebrations etc. In areas of Southern Province, Zambia, a survey at the beginning of drought found that households were having as few as one meal a day. The households also try to supplement household food stocks through increased collection and consumption of wild unconventional foods and increase participation in casual labour for food which often brings in little more than the occasional meal for the day as was the case in Malawi (Chisala, 1993).

In order to cushion young children against severe impact of food shortage mothers opted to breast feed children longer than is the normal case so that at least this source of food was assured. This is a general strategy adopted at times of food shortages.

Medium term strategies

As the unbroken food and water shortage intensified, households relied more and more on acquired food sources as their own stocks became depleted. This stage calls for the ability to mobilize resources. At this stage engagement of household resources started with selling of assets, beginning with liquid assets such as chickens, goats, clothes etc. In male headed households where labour is usually more skilled, men went out of the family to do piece work or burn charcoal for sale or intensify the fishing activities in order to obtain money for food. Options within female headed households are less rewarding with activities such as selling of wild gathered foods. In fact most of the activities that are done as pastimes in times of plenty were intensified to serve as a source of extra income upon sale.

The strong family ties characteristic of the societies in Africa also came into play with initial food sharing within the affected area. Those family members who were working away from home sent in sums of money to help their relatives back home. But these systems are increasingly coming under pressure due to the constant erosion of the wages earned even in urban areas. The proportion of relatives requiring long term assistance is also putting further pressure on the family networks as a result of the AIDS pandemic in the region that leaves many children totally orphaned within months. Nevertheless, some families were still able to send some members to stay with relatives in other areas until the situation improved as part of the coping mechanism.

In response to water shortages families adopted strategies such as reduced number of baths, overall less use of water; recycling of water to use for different purposes etc. Most of these strategies put the family at risk of contracting and spreading diseases such as diarrhoeas and skin infections. As water sources are dried up, people started sharing the remaining water points with their livestock, thereby putting the families at further risk.

Migration occurred eventually mainly due to water stress for animals than for food scarcity reasons.

IMPLICATIONS FOR RECOVERY AND LONG TERM SUSTAINABILITY

The degree to which individual households engage their household assets and the type of assets used up will determine their ability to recover from the affects of drought within a short space of time. Their baseline vulnerability and therefore their range of options will determine their capacity to withstand the pressure to dispose of their productive assets and avoid endangering their future livelihoods. Therefore external support agents would do well to carefully monitor the coping mechanisms so that assistance can be timed to preclude loss of productive assets such as seed, draught animals, hoes and axes and indeed permanent migration.

Excessive exploitation of natural resources such as woods for charcoal burning and fuel wood for sale; over fishing and grazing and increased logging could damage the eco-systems and make them more susceptible to future drought.

Nutritional deprivation of young children and pregnant women have long lasting implications which can be carried through life.

INSTITUTIONAL SUPPORT

All national governments in collaboration with NGOs and international donors were able to put in place drought relief operations to support the affected communities. With the exception of Botswana, most other countries responded to the drought in the characteristic unprepared manner, with setting up of delivery structures from scratch. Nevertheless, the response was overall laudable with very valuable innovations in resource mobilization and collaboration between the different players for a common goal. Unlike earlier emergency relief programmes, there was a lot of thought and effort put into incorporating development concerns in the cities, mindful of recovery needs and probably out of sheer necessity, more attention paid to mobilization of community resources. The region also demonstrated a lot of cooperation in order to ease hardship in member countries through minimizing red tape in the transportation of relief food to land locked Zambia, Malawi and Zimbabwe.

In Malawi, Zambia and Mozambique indigenous and international NGOs worked side by side with Government and Donors to execute relief operations in water, health and food. For the first time in many years NGOs were allowed central stage to put to use their skills at working with communities to bring about relief. In Zambia, the NGOs rallied together and implemented drought relief tailored along the chronic situation in their geographical areas of operation. This knowledge served well in easing the problems associated with identification of vulnerable

groups for assistance and also to decide on the best alternatives to help the communities both in the short term and long term. The exercise helped the NGOs as well to network among themselves as well as with government and infuse some of their accumulated experience to direct further policy with regard to relief.

Botswana was the exception to the haphazard response because due to long exposure to drought, they have very well established regular mechanisms for government response. This is supported by an equally well articulated information system that provides timely warning to trigger off response in designated government structures. Botswana is also different in that it is in a position to mobilize resources from within government to respond without undue reliance on outside support. This situation is actually reported to be under pressure due to repeated drought and the declining performance of the mining sector. As much as Botswana can be said to be successful in skillfully combining development with relief activities, the system is still largely government driven, with minimal incorporation of people's coping abilities to make the system more sustainable.

LESSONS FOR VULNERABILITY REDUCTION AND DROUGHT MITIGATION

Drought only served to highlight the extreme vulnerability of the region to external shocks and exposed the degree of unpreparedness among the countries to respond. This situation has developed over many years over which general development has failed to take off in the region.

The answers to reducing the collective vulnerability of the region including that of the individual families and communities lie with the local population. These should however be assisted to build up their inherent capacities through properly thought out assistance.

Droughts are predictable and long term preparation can help trigger response in a timely manner as has been demonstrated by the Botswana system.

The most significant relief operation is in reducing individual vulnerability through targeting long term development assistance. Donors should be as ready in disbursing such non emergency assistance as they are during drought.

Women and children have special physiological and social constraints that limit their capacity to cope during severe stress. They should be targeted for specific assistance.

Timely warning systems are an integral part of drought preparedness. So is a well elaborated response mechanism.

Technology that help improve productivity and save time while safeguarding the environment need to be made more accessible particularly to women.

Civil strife is an unnecessary complication of an already precarious situation in the region.

In mitigating drought both food access and availability should receive due attention. People's coping mechanisms should be central to the design of appropriate response from outside institutions.