

The Seven-Year Drought, Household Food Security and Vulnerable Groups in Botswana

Thabo T. Fako
and
Louis Molamu

Abstract

This paper outlines the extent of absolute poverty and the vulnerability of various dependent groups that are found in the population in Botswana. The paper argues that the seven-year drought, 1981-1987, increased the proportion of households that have little or no household food security. These households increasingly became dependent on state hand-outs and assistance programmes which have had the effect of reducing household and individual self-reliance. Paradoxically, the increasingly disadvantageous socioeconomic and environmental conditions that prevailed during the drought years were associated with improvement in nutrition, positive national health statistics, and the general upliftment of the welfare of many communities.. This unnatural situation, however, is likely to mask rates of absolute poverty and potential future misery.

Introduction

After the discovery of diamonds, shortly after independence, Botswana rose from being one of the poorest countries in the world to becoming one of the few African economies that were classified by the World Bank as "middle income". In contrast with many stagnant economies in Africa, Botswana became the fastest growing economy in the world. Economic growth consistently exceeded population growth over the years.

The country became one of a few in Africa to achieve relatively low levels of debt; increasingly large budget surpluses; moderate inflation; a favourable balance of payments; Gross Domestic Product (GDP) growth rates of up to 13 percent per annum; per capita income of US\$ 2,584; substantial foreign exchange reserves; and one of the strongest currencies (the Pula) in Africa. The country also became the world's second largest producer of diamonds after The Russian Federation (Maendeleo, 1993).

The productive capacity of the economy is based primarily on the export-oriented diamond mining and cattle sectors. The diamond-led economy enabled government to increase revenues from P394 million to P4161 million between 1982/83 and 1992/93 (Ministry of Finance and Development Planning, 1993:12). In the same period, expenditure increased by 25.6 percent. The main expenditure has been on social services such as education and health, and on economic services such as roads, electricity and water. The Ministry of Finance and Development Planning (1993) has shown that since 1972, the average annual rate of growth in employment has been 8.6 percent, and the rate of growth in employment exceeded the rate of growth of the population and that of the labour force. These developments contributed significantly to the general improvement of the average standard of living.

Primary education has expanded rapidly in recent years. According to the Ministry of Finance and Development Planning (1993:9) by 1991, the proportion of 15-49 year olds who ever enrolled in formal education was 83 percent for females and 79 percent for males. The average enrolment for children of primary school age (7-13 year olds) in formal education was about 83 percent. Adult literacy was estimated at 74 percent and female literacy compared well to that of males below the tertiary levels.

Access to rural areas improved markedly due to a programme of rural roads construction. According to the Ministry of Finance and Development Planning at the end of 1990, Botswana had about 16,000 km of publicly maintained roads and tracks; with 32 percent (8328 km) tarred. The number of telephone subscribers increased from 10,000 in 1986 to 22,200 in 1990 (about 60 persons per telephone). The private fleet of vehicles increased by 9.8 percent per annum between 1985 and 1989. In the same period, the government fleet grew by 4.2 percent per annum (Ministry of Finance and Development Planning, 1993).

The Extent of Poverty

It has proved less difficult over the years to achieve economic growth than to ensure that higher incomes are earned by citizens throughout the economy. There is ample evidence of growing inequity as a result of the highly skewed income distribution which has tended to perpetuate relative and absolute poverty. According to the Ministry of Finance and Development Planning (1993:74), improvement in living conditions during the last two decades has not been evenly spread among districts, ethnic groups, classes of workers, households and individuals.

Statistical growth rates have tended to conceal the extent of poverty and the relative lack of participation by citizens in mainstream economic activities in

Botswana. Oommen (1983) has shown that a large proportion of productive activities are not owned by Batswana and a large proportion of the Gross Domestic Product (GDP) does not accrue to the citizens. Impressive rates of growth have been based on the mining and cattle sectors which are generally isolated from the rest of the economy. Very few citizens participate in, or benefit from these sectors of the economy. Many households remain without cattle and are unable to benefit from livestock sales that contribute to the GDP. Many of these households are also unable to plough due to lack of draught power.

The 1974 Rural Income Distribution Survey (Central Statistics Office, 1976) estimated the percentage of people without cattle at 45 percent while the 1981 census estimated it at 60 percent (Central Statistics Office, 1983). This shows an increase in the proportion of people who do not own cattle. Hubbard (1983) noted that middle income and poor people lost their cattle during the drought of the mid-sixties. As a result, they did not benefit from the 1970-74 rise in cattle prices and wage employment increases to enable them to invest in new and additional water sources for their cattle through borehole drilling. Only a few skilled or educated upper-income people who owned a herd of at least 40 cattle and produced 15 or more bags in crop production, benefitted.

The poor have generally not benefitted from the rise in the Gross Domestic Product since the 1970s. The 1974 Rural Incomes Distribution Survey (central Statistics Office, 1976) found that 45 percent of rural households had incomes below the Poverty Datum Line (PDL). In 1980, the percentage of people falling below the PDL was 54.5 percent in small villages and 46.5 percent in large villages (Colclough and Fallon, 1983). In both small and large villages, however, the incomes of those in absolute poverty were about 44 percent below the Poverty Datum Line. There continues to be far too many citizens seeking income from employment than there are income earning opportunities available.

Income differences between male and female, rural and urban, as well as the formal and informal sectors, are significant. Socioeconomic conditions in the rural areas have tended to work against the emergence of a strong income-generating and employment-creating rural sector. According to the 1991 Population and Housing Census 68 percent of all households had at least one person employed in the formal sector. These consisted of 93 percent (urban) and 56 percent (rural) households (Central Statistics Office, 1994).

Types of Vulnerable Groups

The poor live under conditions which make them vulnerable to potential health hazards that reflect the generally poor quality of life they endure. Many of the poor in Botswana include the following vulnerable groups: hired herdsmen; freehold farm workers; remote area dwellers; destitutes; female-headed households; and many low-income groups in peri-urban and urban areas.

In 1981, there were 21,000 hired herdsmen who provided income for an additional 120,000 people or 16 percent of the rural population (Botswana Government and UNICEF, 1986:40). Hitchcock (1978) found that their average income, which included payments in cash and in kind, amounted to P9.39 per month. Childers (1981) found average wages amounting to P11.15 per month. Jansen (1984) found that 83 percent of the herders received food supplements equivalent to P25.00 per month in wages.

The 1974 Rural Income Distribution Survey (Central Statistics Office, 1976) found that 65 percent of freehold farm workers lived below the Poverty Datum Line. According to the 1984 Employment Survey, (Ministry of Finance and Development Planning, 1984) there were 5,200 freehold farm workers of whom 1,100 were female, supporting an estimated 99,000 from their incomes.

Remote Area Dwellers (RADs) formerly referred to pejoratively as bushmen, live in areas that do not only have a poorly developed infrastructure but are also distant from services that are at higher levels of sophistication and development.

According to Childers (1981) there were 44,000 RADs in the population. They generally did not own any cattle and were rarely involved in crop production.

In 1985, there were about 8,550 destitutes who had no means of support through their own efforts or relatives and friends. The total number increased during the drought years when additional and temporary destitutes were identified in different communities - especially in the rural areas. The Food Resources Department estimated their number at 27, 236 in the 1984 drought year (Botswana Government and UNICEF, 1986:42).

Female-headed households constitute another group that has been subjected to unfavourable socio-economic conditions. According to the 1981 Population and Housing Census, 48 percent of rural households and 33 percent of urban households were headed by women (Central Statistics Office, 1983). Women's access to means of production has always been important for household food security. In recent years it has become clear that household food security was particularly at risk for many female-headed households. Such households, generally, tended to be poorer, owned no cattle or only a small herd, and had limited access to land and other productive resources.

Narayan-Parker (1983:24) found that 67 percent of the women in his Southern District sample did not plough because they lacked draught power and implements. During the 1982/83 drought year, about 56 percent of the households who ploughed used their own draught power (Central Statistics Office, 1983). The rest of the households either used borrowed or hired draught power. It was also observed that those who had draught power tended to plough more than those without it. As a result, they had better crop harvests.

In the general patriarchal system dominant in Botswana, men have tended to control virtually all aspects of community life. Men as heads of households were deemed to be the primary wage-earners. Women were expected to depend on their husbands, sons and male relatives. Whatever their age, traditionally, women were regarded as dependents of the households in which they lived. As a result, they tend to be excluded from participation in the formal sector.

According to the International Labour Force Review, about 38 percent of people in the global labour force during 1983 were women (Motshidisi, 1984:69). Of the total number of people in Botswana who had access to cash employment in 1981, only 31 percent were women (Tumkaya, 1984:155).

In the formal labour market, women occupy the least skilled, least paid and most insecure positions. The 1985/86 Household Income and Expenditure Survey found that some 80 percent of female-headed households earned incomes that were less than P300 per month while only 66.6 percent of male-headed households earned less than P300 (Central Statistics Office, 1988). Lack of access to employment opportunities has undermined significantly the economic position of women. With an increasing need for cash income for households, a substantial number of Botswana women participate in the informal sector (Alexander, *et al*, 1983; Narayan-Parker, 1983). However, informal sector activities have very low returns to labour. As a result, most of the de-jure female-headed households find it difficult to support their families with incomes generated from their activities in the informal sector.

In spite of their disadvantaged position, women carry almost total responsibility for raising their children as well as for the daily maintenance of other household members. In arable agriculture, their labour is needed for planting, ploughing, weeding, bird-scaring, harvesting, threshing and crop storage. Men are normally involved in ploughing and planting. The rest of the work is normally done by women.

Peri-urban dwellers are another group that live in insanitary conditions in overcrowded, low-income housing. The types and conditions of their dwellings bear testimony to the extreme poverty in which they subsist. According to the 1981 census, approximately six percent of the population resided in peri-urban areas where a noticeable preponderance of females and children lived without a secure income. The report on the Situation of Children and Women in Botswana noted that about two out of every three female-headed households in peri-urban areas were not certain of their daily meals. Their children were, therefore, prone to under-nutrition and the resulting deficiency diseases which impair normal physical, mental and social development (Botswana Government and UNICEF, 1986).

In general, populations living under poor socio-economic conditions have a high proportion of infections, infestations and a disproportionate incidence of nutritional deficiency disorders. These population groups tend to be subject to a vicious cycle which perpetuates their poverty. Their low educational levels and poor rates of literacy leads to poor chances of formal employment. This in turn results in poor general living conditions that begin with poor housing, poor nutrition, and overall poor health status. These factors tend to produce low health care utilization levels and high treatment defaulter rates which result in ineffectiveness of health intervention strategies and programmes. Due to high rates of unemployment as well as low incomes, many people among the poor have resorted to psychosocial coping behaviours which have the effect of lowering their quality of life. Many, including women, have resorted to excessive alcohol consumption and smoking behaviours which have serious health implications for them and their children.

The Population, Food Production and the Environment

Botswana is a relatively featureless sand-filled basin, two-thirds of which is the Kgalagadi desert. It is a country that is prone to drought. Since independence, drought has occurred in the following years: 1968-70; 1974-75; 1979-80; 1981-87; 1990-92. Botswana's climate is mainly arid or semi-arid. Rainfall is erratic and unevenly distributed; ranging from less than 250 millimetres in the South East to more than 650 millimetres in the North East. The rain comes in short intense storms which result in a rapid run-off and drainage during the summer season between the months of November and April. There are very few perennial rivers, pans and lakes. Due to very high temperatures, most of the surface water evaporates at a rate of 1.8 cubic metres per year. This has necessitated the use of boreholes which provide limited quantities of (often salty) fresh water in many small villages. Temperature extremes can reach 43°C in the hot summer month of January and below 5°C in the winter month of July. These conditions create an adverse climate for agriculture and other food production efforts (Cownie, 1989).

The population of Botswana is relatively homogenous when compared to countries in East and West Africa. However, it is more heterogenous when compared with its neighbouring countries such as Lesotho and Swaziland. In addition to the majority of the people who are Tswana speakers, there are also Bakalanga, Bayei, Basarwa, Ovambo, Bambukushu, Baherero, Asians and people of European stock in the country. According to the 1991 Population and Housing Census (Central Statistics Office, 1994), Botswana had a total population of 1,327,000 and a growth rate of 3.5 percent per annum. The growth rate was higher than the 2.8 percent average for Africa, 2.0 percent average for less developing countries and 1.7 percent average for the world. A high growth rate results in an unbalanced age structure whereby the number of children, that are dependent, is nearly equal to the number of working adults. The population structure is quite youthful with over 60 percent below the age of 30, 43 percent

below the age of 15 and 5 percent above the age of 65. This has serious planning and policy implications in relation to employment and the provision of social services such as health and education (Ministry of Finance and Development Planning, 1993:5).

The main features of the settlement pattern include: a heavy concentration of the population (more than 80 percent) in the East where arable land and water are more available and where infrastructure is developed; a significant portion (44 percent) of the population living in settlements that meet the statistical criteria for being classified as urban; the population that lives in designated urban areas being approximately 24 percent; the majority of the population living in small villages, agricultural lands and cattle posts (Central Statistics Office, 1994). Significant proportions of the population are easily classified as vulnerable groups. The majority of these vulnerable groups and households do not have the capacity to live above subsistence levels.

During the seven years 1981-87, the country experienced the longest, most severe drought ever recorded (Bhalotra, 1987). In that period, rainfall was 24 percent below normal. As a result, there was a decline in the performance of the agricultural sector. Food production levels dropped drastically (Ministry of Agriculture, 1991:12). Instead of growing by 7.3 percent, per annum as had been projected by the fifth National Development Plan (NDP-5), the contribution of the agricultural sector declined by 4.1 per annum by 1984/85 (Botswana Government, 1985a).

In the 1980's the government introduced a number of programmes which provided financial assistance to farmers to increase basic cereal production to self-sufficiency levels (Ministry of Agriculture, 1991:20). These schemes included the Accelerated Rainfed Agricultural Programme (ARAP) and the Arable Lands Development Programme (ALDEP). Other assistance schemes which were introduced in a bid to improve the productivity of the agricultural

sector were the Financial Assistance Policy (FAP), Small Projects (AE10), Services to Livestock Owners in Communal Areas (SLOCA) and Local Government (LG17). In spite of special programmes to enhance production, the agriculture sector grew at the rate of 3.4 percent per annum over the period 1985-89 (Ministry of Finance and Development Planning, 1993:72). This rate is lower than the rate of growth of the population, which was 3.6 per annum.

Botswana is among countries with the lowest crop productivity. Due to irregular and unpredictable rainfall, foodgrain production is generally characterized by fluctuations from one year to another. As a result of the recent seven-year drought, there has been a drastic decline in the performance of the agricultural sector. The overall agricultural component of GDP in 1984/85 was estimated to have fallen by 80 percent of its 1978/79 level. Motsemme (1985) noted that declining foodgrain production compounded by a rapid growing human population resulted in a declining per capita production from 159 Kg per annum in 1975/76, to 58 Kg per annum in 1980/81 and to a mere 7 Kg per annum in the worst ever drought year of 1983/84.

The drought entrenched structural poverty. Access to productive resources and the ability to sustain a subsistence way of life declined tremendously. According to Botswana Government and UNICEF, (1986) the number of households considered to be holding land declined from about 70,000 in 1980 to 58,000 in 1984. The number of households planting during this period dropped by up to 30 percent. Of those who planted, 83 percent harvested in 1980 while only 23 percent harvested in 1983. Estimated income from crops per planting household was P227.00 in 1980 and only P39.00 in 1984. The number of people engaged in arable agriculture declined from about 250,000 in 1980 to 190,000 in 1983.

The relative, and very often absolute, decline of the agricultural sector indicates that those who remain in the rural areas stand to be progressively impoverished during drought years and remain unable to feed themselves in non drought years.

In a non-drought year such as 1978, approximately 90 percent of all households produced harvests that were insufficient to feed themselves (Kerven, 1980).

Although the array of drought relief programmes is impressive, and has kept people alive, rehabilitation programmes have not been successful in reducing vulnerability to drought. An undesirable high level of dependency seems to have developed. Thus, in spite of an enviable development record that the country has achieved over the years, poor performance in the agriculture sector has had serious implications for food and nutrition, and for the quality of life of many of those who will remain in the rural areas for some time to come. During the drought years, many households lost their assets, particularly livestock, and migrated out of rural agricultural areas. This made it difficult for them to regain their former levels of production. The ability of future generations to eke out a self-sustaining subsistence life is virtually irretrievably lost.

Government Intervention and National Food Security

Botswana has a significant and permanent response capacity to drought through the Inter-Ministerial Drought Committee, the Department of Food Resources, the District Drought Committees and through the involvement of District and Village Extension Teams (Ministry of Finance and Development Planning, 1993:7). Over successive drought years, an effective set of programmes have been devised to quickly and flexibly assist categories of the population that are most vulnerable to the impact of endemic drought, persistent food deficits, declining incomes and shrinking employment opportunities.

The onset of drought, with its consequences for nutritional status and for the general economy, has prompted the formation of a comprehensive National Food Strategy (NFS) as a major component of the Rural Development Policy (Botswana Government, 1985b). The NFS covers medium-term priorities in a

number of sectors including nutrition, drought preparedness, food storage, different types of food production systems as well as those of drought relief and post-drought recovery.

The government introduced a strategy of food security in 1980 in order to store grain to be used during drought years. The World Food Programme (WFP) assisted the government by donating food which was stored as reserves. Grains from the reserves have benefitted some of the most vulnerable groups in the population. During 1985, about 54,900 tonnes of food valued at about 21 million US Dollars were provided by international donors. The projected number of beneficiaries for the 1986/87 drought year was estimated at 252,000 school children and 400,000 other beneficiaries among vulnerable groups (Botswana Government and UNICEF, 1986:54). In 1985, the Botswana Socio-Economic Assessment of Drought Relief presented results of a national survey which indicated that more than 90 percent of respondents were recipients of some kind of food ration.

Supplementary Feeding Programmes

Since Independence, the government has provided food supplements to medically selected children under the age of five, pregnant women and lactating mothers, primary school children, tuberculosis patients and permanent (Group A) destitutes. Supplementation of food was intended as a preventive measure to reduce the incidence of malnutrition among groups considered highly at risk.

In response to the current drought, and in order to assist various categories of vulnerable groups, the government expanded the supplementary feeding programme considerably in 1982. The medical criteria were dropped and the School Feeding Programme was extended to provide take-home rations at weekends and holidays. The total number of persons who benefitted from the

supplementary feeding schemes increased from about 359,000 in 1980 to 600,000 in 1984. Cereal food aid per beneficiary increased from 26 kg in 1981 to 52 kg in 1984. Children between the ages of six and ten who do not attend school, as well as individuals identified by communities as having no means of support due to drought, were also included. Temporary (Group B) destitutes who were catered for by District Councils in non-drought years were also included, and food rations were increased for all vulnerable groups (Botswana Government and UNICEF, 1986).

In 1985 an assessment of drought relief found that almost half (46.8 percent) of households had one or more children of school-going age who did not attend school. Of these children, 69 percent reported receiving rations through a health facility. In general, 89 percent of households eligible for health facility rations reported regular monthly supplies (Botswana Government, 1985a).

According to a report by the Botswana Government and UNICEF (1986:52) each primary school child was provided with 100 grams of sorghum flour meal, 15 grams of vegetable oil, 10 grams of dried skimmed milk (DSM) and 60 grams of beans daily. By March 1986, there were 235,750 beneficiaries of the School Feeding Programme. Its major advantage appears to have been improvement in the concentration of children as reported by teachers in several remote areas. It also appears to have accounted for an increase in school attendance and the reduction in absenteeism. However, due to shortages in various parts of the country, some schools found it difficult to prepare meals. In some villages, schools had to be rationed with water brought in by District Council trucks (in drums) from long distances.

An important addition to the supplementary feeding programme was the inclusion of Remote Area Dwellers (RADs) who received 12.5kg of maize meal, 3.5kg of beans and one litre of oil every month. Most of the RADs were Basarwa. It is estimated that approximately 20,000 RADs were reached through the

supplementary feeding programme in 1985/86 (Botswana Government and UNICEF, 1986). Nomadic behaviour, which resulted in constant relocation of settlements among the Basarwa, made the distribution of food to RADs somewhat inefficient compared to other vulnerable groups. In addition, many of the RADs settlements were in areas that presented some of the most difficult transportation and communication problems. As a result, food distribution in RADs settlements faced difficulties which resulted in irregular supplies.

The Direct Feeding Programme was designed to assist in the nutritional rehabilitation of two groups of children. The first group consisted of children less than 80 percent weight-for-age. These were provided with a daily meal consisting of cooked maize meal or instant corn soya milk (ICSM), with beans, vegetables, meat, oil and other foods which the health staff were able to purchase from a P200.00 fund made available for this purpose. Another group consisted of children of less than 60 percent weight-for-age. These children were given a high-energy protein mixture known colloquially as "Disco Milk", which contained 80 grammes dried skimmed milk, 60 grammes vegetable oil and 80 grammes sugar. By March 1986, there were 14,450 malnourished and 1,460 severely malnourished children identified throughout the country (Botswana Government and UNICEF, 1986:53).

Although there was an increase in the percentage of malnourished children, which reached a peak of 32 percent during 1983/84, later nutrition surveillance data showed a remarkable decline in the proportion of malnourished children from approximately 30 percent in 1982 to around 15 percent in 1986 (Maendeleo, 1993:95).

Paradoxically, the increasingly disadvantageous socio-economic conditions that prevailed during the seven years of drought have been associated with a general improvement in nutrition and in the general welfare of children in many communities in Botswana. This was largely due to the government's capacity to

distribute large quantities of food throughout the country. Another benefit of the supplementary feeding programme was an increase in the attendance of health facilities by different categories of vulnerable groups. Attendance of children in health facilities rose from 40,000 per month in 1978 to approximately 160,000 in 1987. This facilitated an increase in immunization coverage, nutritional assessment, growth monitoring, health education coverage and a general increase in the ability of health personnel to identify cases that needed follow up. There has also been an increase in the attendance of pregnant women and lactating mothers who invariably attended clinics as part of taking their children to the clinics.

Health facilities became major distribution points for supplementary feeding programmes. This contributed significantly to the association between food and health facilities. Although no studies have been carried out to assess the role of feeding programmes, in comparison to other government intervention and programmes on attendance in health facilities, indications suggest that removal of food from health facilities is likely to result in a drop in attendance. This is a particularly important question to be addressed by further research and by appropriate bodies concerned with post-drought recovery.

Nutritional Status of Children

According to the 1981 Population and Housing Census, Botswana had 445,102 children (Central Statistics Officer, 1983). This constituted 47.5 percent of the total population under 15 years of age. Of these, 46.8 percent were children under five years of age. Out of these, only 2.6 percent were enrolled in pre-school facilities. A significant proportion of children come from female-headed households, households dependent on informal sector employment, and other households with insecure and unpredictable sources of income. Children from

such households were the most vulnerable and at risk from the combined effects of poverty, drought, disease, malnutrition and ignorance.

Data from the National Nutritional Surveillance Programme indicates that during the seven years of drought, approximately one out of every four children attending under-five clinics was found to be underweight. During the drought years of 1982, 1983 and 1984, the percentage of malnourished children was 28 percent, 30 percent and 31 percent respectively. In non-drought years, the percentage of malnourished children is estimated to be about 26 percent. Significantly high levels of under-nutrition are due to generally low levels of food intake which in recent years have been worsened by the combined effects of poverty, drought, diarrhoea, dehydration, inadequate or poor environmental conditions, malaria, measles and parasitic infections. Nutritional deficiencies, complicated by the above conditions, account for at least one out of every three children who die in hospitals. Diarrhoeal diseases account for about 20 percent of recorded deaths in children under five years of age.

During the 1983-84 Epidemiological Survey (Ministry of Health, 1985) conducted as part of the National Health Status Evaluation which focused on the under-served areas, a total of 405 children under the age of five were investigated. The findings show that 14 percent of the children were stunted; 86 percent of the children had a height-for-age above 90 percent Harvard standard, which indicates mild stunting; 7 percent of the under-fives were wasted and 27 percent showed mild wasting. Weight-for-age findings from a similar survey indicate that 28 percent of the children were "at risk". No cases were less than 60 percent below weight.

In general, children's nutritional status is a sensitive indicator of health status and reflects seasonal food availability patterns. The highest rates of malnutrition are normally recorded during the planting season in the months of December and January and the lowest rates are usually recorded during the harvest months of

June and July. From an average of the 1979, 1980 and 1981 figures, the decline from January to July is of the order of 5 percent from a peak of 28 percent in January to a low of 23 percent in July.

Cohen (1985) makes an interesting observation on the overall national nutritional pattern. He observed, first, that seasonal variations in the prevalence rates became progressively less during the course of the drought, and second, that despite four conservative years of drought, the national rates were never more than two percentage points higher than the normal no-drought end-of-year peak prevalence rates. This could be explained by government's drought relief measures which ensured the distribution of food rations to vulnerable groups (60 percent population) and raised food availability (especially to rural areas) to higher than non-drought levels through increased cereal imports.

Conclusions

This paper has shown that the implementation of a good Primary Health Care programme and government's intervention through supplementary feeding of vulnerable groups during the drought years has resulted in reduced malnutrition rates for children under the age of five from around 30 percent in 1981/82 to around 15 percent in 1991. The school feeding programme contributed to the improvement in school enrolments, improvement in the nutritional status of school children and improvement in the academic performance of school children. Direct feeding and supplementary feeding also contributed to the attendance of child welfare clinics for many mothers.

The seven-year (1981-87) drought increased the proportion of households that had little or no household food security. These households increasingly became dependent on state hand-outs and assistance programmes which had the effect of reducing individual and household self-reliance. Paradoxically, the increasingly

disadvantageous socioeconomic and environmental conditions that prevailed during the drought years were associated with improvement in nutrition, positive national health statistics, and the general upliftment of the welfare of many communities.. This unnatural situation, however, is likely to mask rates of absolute poverty and potential future misery.

When food supplements are withdrawn and food production levels do not appreciably increase, in the future, malnutrition rates for children will, invariably, increase. Post-drought recovery efforts must, therefore, address this issue squarely, especially in the light of foreseeable declines in the performance of the economy.

Bibliography

Alexander, E et al

1983 *Informal Sector Businesses in Four Communities*, Applied Research Unit, Ministry of Local Government and Lands, Gaborone.

Bhalotra, Y.R.P

1987 *The Drought of 1981 - 1987 in Botswana*, Gaborone: Ministry of Works Transport and Communications.

Botswana Government

1971 *National Census Reports 1971* Gaborone: Government Printer.

Botswana Government

- 1980 *National Development Plan (NDP5) 1979-85* Gaborone: Government Printer.

Botswana Government

- 1985a *The Drought Situation in Botswana*, Inter-Ministrial Drought Committee, Gaborone: Government Printer.
- 1985b Report of the National Food Strategy, Rural Development Council, Rural Development Unit, Ministry of Finance and Development Planning, Gaborone: Government Printer.

Botswana Government and UNICEF

- 1986 *The Situation of Children and Women in Botswana*, Government of Botswana and the United Nations Children's Fund, Gaborone: Government Printer..

Central Statistics Office

- 1976 *The Rural Income Distribution Survey in Botswana 1974/75*, Gaborone: Government Printer.

Central Statistics Office

- 1983 *1981 Population and Housing Census: An Analytical Report*, Gaborone: Government Printer.

Central Statistics Office

- 1988 *Household Income and Expenditure Survey: 1985/86*, Gaborone: Government Printer.

Central Statistics Office

1994 1991 Population and Housing Census. Gaborone: Government Printer.

Childers, G.

1981 *Land Use and Development Planning for Remote Area Settlement in Southern District*. Southern District Council Kanye.

Cohen, M.

1985 *Changes in the Nutritional Status of Children in Botswana Over the last years*. (Unpublished by CSO) National Component of Continuous Household Integrated Programme of Surveys (CHIPS) Gaborone.

Colclough, C. & Fallon, P.

1983 "Rural Poverty in Botswana: Dimensions, Causes and Constraints" in D. Ghai and S. Radwan (eds) *Agrarian Policies and Rural Poverty in Africa*. Geneva: International Labour Organization.

Colclough, C. & McCarthy, S.

1980 *The Political Economy of Botswana: A Study of Growth and Distribution*. London: Oxford University Press.

Cownie, D.S.

1989 *Children, Women and Development in Botswana: A Situation Analysis*. Government of Botswana and UNICEF, Gaborone.

Hitchcock, R.K.

1978 *Kalahari Cattleposts* (2 Vols.), Gaborone: Government Printer.

Jansen, R.

1984 *Employment Creation on TGLP Ranches* Paper Presented at the 11th District Development Conference, Gaborone.

Kerven, C.

1980 *National Migration Study: Botswana Mine Labour Migration to South Africa*, Ministry of Finance and Development Planning, Gaborone: Government Printer..

Maendelo (Botswana)

1993 *Children and Women in Botswana: A Situation Analysis*, Ministry of Finance and Development Planning and UNICEF, Gaborone.

Ministry of Agriculture

1991 *Botswana's Agricultural Policy: Critical Sectoral Issues and Future Strategy for Development*, Ministry of Agriculture, Gaborone.

Ministry of Finance and Development Planning

1993 *Planning for People: A Strategy for Accelerated Human Development in Botswana*, Gaborone: Sygma Publishing.

Ministry of Finance and Development Planning

1984 *Employment Survey 1984*, Gaborone: Central Statistics Office.

Ministry of Health

- 1985 *Epidemiological Survey, National Health Status Evaluation Programme 1983 -1985*, Gaborone: Government Printer.

Motsemme, G.

- 1985 *The Food Production and Income Aspects of Nutrition*. Paper presented at the Workshop on the Situation Analysis of Children and Women in Botswana, October 1985, Francistown.

Motshidisi, K.K.

- 1984 "Women in Botswana: Strategies for Change", *Report on the National Conference for Women In Botswana - Strategies for Change*, Gaborone.

Narayan - Parker, D.

- 1983 *Cattlemen, Borehole Syndicates and Privatization in Kgatleng District of Botswana* (Unpublished Ph.D. Thesis, Boston University), USA.

Oommen M.A.

- 1983 "Growth with Equity: Some explanatory Hypotheses Based on the Structure and Pattern of Distribution" in *Botswana Economy since Independence* by Oommen M.A. et al, New Delhi: Tata McGraw-Hill.

Tumkaya, N.

- 1984 "The Economically Active Population and Economic Activity Rates by Age, Sex and Urban-Rural Residence" 1981 *Population Census*. Central Statistics Office. Ministry of Finance and Development Planning.