

FOOD SYSTEMS UNDER STRESS (FSUS) PROJECT

Country Profile:

BOTSWANA

BY

The Botswana FSUS Team

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# NATIONAL PROFILE OF FOOD SECURITY IN BOTSWANA

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## 1. INTRODUCTION

### 1.1 Country Background

Botswana, with a total land area of 582,000 km<sup>2</sup>, is landlocked sharing borders with the Republic of South Africa, Namibia, Zambia and Zimbabwe. Much of Botswana has been described as "flat with gentle undulations and occasional rocky outcrops". The thick and sandy layers of the Kgalagadi desert cover more than two-thirds of the country. Botswana is situated close to the subtropical high pressure belt of the Southern hemisphere. The country is as a result largely arid or semi-arid. The mean annual rainfall ranges from 650 mm in the extreme north-east to less than 250 mm in the extreme south west. The country's main natural resources are range and arable, wildlife, and minerals especially diamonds. Arable land covers only 5 per cent of Botswana's land area with the best arable land occurring in the east, in the freehold farming areas. However, unreliable rainfall has made arable agriculture a risky business. Extensive beef production occurs in the country since a good size of Botswana's land is suitable for cattle ranching purposes (MFDP, 1991, pp.3 and 5).

Botswana has been a food deficit country since independence making it highly dependent on imported cereals. Recurring droughts since the 1980's have lessened food supplies especially cereals, from domestic sources. It has been reported that "even during the best of years, the country has never produced half of its cereal requirements" (Mokobi, 1987, p.1).

### 1.2 Food Situation

Crop production as at December 1993 for the 1993/94 production year stood at 290,000 hectares and it was expected to be higher by the end of the season ( NEWP, 1994, p.1).

Table 1 shows the forecast for the major crops for the 1992/93 production season. The table shows that sorghum is by far the most important cereal crop in terms of area cropped and output followed by maize and then millet. Beans constitute the most important non-cereal crop. The increase in area planted has been attributed to the ploughing subsidy of P100 per ha, up to a current maximum of 6 ha. and the free seed programme (NEWP, 1993, p.3). The rains have started well in the 1993/94 crop production year with the level of rains being described as above normal. Crop output is therefore expected to be very good in 1993/94 compared to the 1992/93 cropping year.

Table 1: Crop Forecast for the 1992/93 season  
 (area planted '000 hectares; production '000 tonnes)

	Traditional Sector		Commercial (Pandamatenga)		Commercial (Others)		National Total	
	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.
Sorghum	247.0	24.7	7.4	11.1	1.6	1.1	256.0	36.9
Maize	78.0	4.4	0.7	1.1	0.3	0.1	79.0	5.5
Millet	21.0	2.0	0.0	0.0	0.0	0.0	21.0	2.0
Beans	24.0	1.9	0.0	0.0	0.0	0.0	24.0	1.9
Other	10.0	0.8	2.9	3.5	2.9	0.0	13.0	4.3
Total	380.0	33.8	11.0	15.6	2.0	1.3	393.0	50.7

Source: National Early Warning Project (NEWP), Report on the Food Situation in Botswana, April to June 1993, p.3

The shortfall in crop production, particularly cereals, is made up through food donations from the World Food Programme (WFP) and commercial imports which are vital to food security in Botswana. The supply of cereals to the country went on satisfactorily without any problems during the 1992/93 production year.

Cattle off-take to the Botswana Meat Commission (BMC) abattoirs was considered high compared to 1991/92 as a result of improved cattle condition due to better grazing and water availability. The conditions of cattle and those of sheep and goats were expected to deteriorate until the onset of rains around October 1993. The rains have so far been good in the 1993/94 production year and therefore the performance of livestock in general is expected to be improved compared to the 1992/93 production year.

### 1.3 Evolution of the Food Security Concept

Botswana has, prior to and since independence, been severely affected by the lack of domestic capacity to produce adequate food, particularly cereals (mainly sorghum and maize) for the mass of the population. This lack of capacity has been attributed to poor soils, inadequate and erratic rainfall, recurring droughts, and the relative lack of appropriate technology. Thus the country has had to rely on importation of cereals to satisfy its food requirements. The reliance on food imports to satisfy domestic food requirements has been thought to put the nation at risk in terms of food supplies particularly in the context of Southern African politics of the 1970's and 1980's, with a major portion of the food imports coming from South Africa or through South African ports.

At the household level food production to meet household needs was most often inadequate to permit satisfactory levels of food consumption. There were also inadequate levels of income to

provide access to food purchases from the market in situations where subsistence food production has been inadequate. Access to increases in income through employment opportunities, remittances and productive assets has also been described to be inadequate (MFDP, 1985, p.2).

In response to some of the problems discussed above the programme for the National Food Strategy (NFS) was launched in 1985. The major objective of the NFS was the reduction of dependence for basic food supplies on outside agencies for both households and the nation (MFDP, 1985, p.2). This objective implied the need for an improvement in security of access of households and the nation to basic foodstuffs and also the need to reduce vulnerability of households and the nation to uncontrollable outside forces such as drought and international instability.

Due to the inability of the country's agricultural sector to meet the basic cereal requirements of the country attributed mostly to unfavourable agroclimatic conditions and the high costs associated with the strategy of self-sufficiency, the Government in 1991 shifted its agricultural policy stance from that of food self-sufficiency to that of food security. In arriving at this decision the Government decided that "self-sufficiency made possible by high cost, heavily subsidised production is not what Government is seeking. Nor does Government desire food self-sufficiency that does not address the needs of the rural population for employment (self-sufficiency achieved by exclusive reliance on large scale commercial production)(MFDP,1988, p.87. Quoted in MFDP, 1991,p.258).

## 2. FOOD SECURITY POLICY, PROGRAMMES AND PROJECTS IN BOTSWANA

### 2.1 Government Policy on Food Security

In 1985 the Government of Botswana adopted food security at both household and national levels as a major policy objective as outlined in the National Food Strategy . In 1991, the nation's agricultural policy shifted from food self-sufficiency to that of food security as part of a new strategy of agricultural development in the country. This policy objective was to be applicable to both livestock and arable farming (MoA, 1991, p.39). The Government's policy on food security also stresses the strategic role of access to productive employment that would generate incomes to enable the people of Botswana to acquire "food for a healthy and productive life." This is especially so in situations where people are not able to produce food for themselves or are unable to produce enough food due to "unfavourable physical and climatic circumstances "(Sigwele, 1993, p.17). The food policy strategy aims at enhancing food production domestically where resources are cost effective with any shortfall in supply met from commercial imports.

## 2.2 Review of the National Food Strategy

### 2.2.1 Introduction

Botswana's National Food Strategy (NFS) was adopted in order to cope with the following problem areas (MFDP, 1985, pp. i - iii).

- i) inadequate food production as a result of low productivity particularly in arable agriculture;
- ii) poor nutritional status arising from generally low household incomes; and
- iii) food security viewed in terms of the inability of Botswana to rely on domestic food supplies produced mostly under rainfed conditions, and the consequent rising levels of imports in an unstable region.

### 2.2.2 Objectives of the National Food Strategy

The main objectives of the NFS were as follows:

- i) reduction of dependence of the nation on foreign sources of food supplies;
- ii) reduction of dependence of households on government and others to make up food deficits which cannot be produced by themselves.

## 2.3 Programme Components of the National Food Security Strategy

### 2.3.1 Programmes

Botswana's food security strategy consists of two major programme components: long term and short term programmes. Long term programmes are designed to deal with long term or chronic food insecurity problems while short term programmes are designed to deal with short term or transitory issues or shocks. These short term programmes may be considered as safety nets prior to the resolution of long term problems (Manamela, 1994 ). The two major food security programmes are discussed briefly as follows:

#### 2.3.1.1 Long Term Food Security Programmes (LTFSP):

Long term programmes to address food insecurity in Botswana may be categorised into two: programmes aimed at increasing food availability together with improved nutritional status, and those aimed at increasing access to improved incomes through the creation of employment and other income earning opportunities to enable households to purchase food which they cannot produce themselves. These

long term programmes are briefly discussed as follows:

### Increasing Food Availability

The current policy objectives of the agricultural sector in Botswana are as follows (MFDP, 1991, p.257):

- i) to improve food security at both household and national levels;
- ii) to diversify the agricultural production base for more income generating opportunities;
- iii) to increase agricultural output and productivity;
- iv) to increase employment opportunities for the rapidly growing labour force;
- v) to provide a more secure and productive environment for those engaged in agriculture; and
- vi) to conserve scarce agricultural and land resources for future generations.

The objectives as indicated above show a commitment by the Government to increase agricultural output and productivity in addition to commitments to food security, diversification of the agricultural production base and the creation of a more enabling environment for increased levels of agricultural production. The above objectives are being met through efforts aimed at increasing domestic food production with shortfalls made up through food imports mostly from neighbouring countries especially South Africa.

### Improvements in the Nutritional Status of the Population

The nutritional status of the average Botswana has improved over the years since independence. Available data suggest that the prevalence of malnutrition in children from 6 months to 5 years in Botswana has declined from about 25 per cent in the mid-1980s to about 15 per cent in 1990 (MFDP, 1991, p.17). Malnutrition rates, however, do vary within the country. They are known to be particularly high among remote area dwellers, in small villages, in the lands, and in the cattle posts. Information on regional variations indicates that malnutrition rates are generally high in Kgalegadi, parts of Kweneng and Chobe districts. Severe malnutrition is, however, known to be rare due to the "safety nets" in operation to deal with cases of malnutrition (MFDP, 1991, p.17).

### Increasing Access to Improved Incomes

A major policy objective of the Government of Botswana is how to decrease poverty and improve income distribution in

the country. Efforts aimed at improving incomes have included the creation of employment and the development of projects and programmes to increase incomes. It has been documented that formal sector employment growth has averaged about 9 per cent since independence compared to a population growth rate of about 3.4 for the same period as a result of tremendous growth in revenue from the export of diamonds(MFDP, 1993, p.15).

In order to increase household incomes in the process of sustained development there have been efforts at maintaining macroeconomic stability through appropriate fiscal and monetary policies, the provision of opportunities for employment through rural industrialization programmes, and opportunities for employment in the agricultural sector, and opportunities within the Financial Assistance Policy(FAP) for self employment and the development of the private sector.

### 2.3.1.2 Short Term Food Security Programmes

Short term food security programmes have been as follows:

- i) drought relief programme,
- ii) non-drought feeding programme, and
- iii) destitute programme.

The above short term programmes are briefly outlined as follows:

Drought Relief Programme(DRP):

The DRP is made up of two food access programmes ( human relief and rural employment ) and two food availability programmes ( agricultural relief and recovery, and water supply) (Mokobi and Asefa, 1988, p.259). The various programmes under DRP are elaborated upon as follows:

#### i) Human Relief Programme

Food is distributed to vulnerable groups such as registered destitutes, the elderly who are registered destitutes, primary school children and malnourished pre-school children, pregnant and lactating women selected on medical criteria, TB patients and remote area dwellers through a supplemental feeding programme. Food is provided at one meal per day on school days in primary schools to all pupils, and at health centres to medically selected preschool children, pregnant and lactating women. Feeding programmes are normally strengthened by nutrition education programmes to encourage the use of highly nutritive local foods (Mokobi and Asefa, 1988, p.259).

During the 1982-87 drought period all preschool children, all pregnant and lactating women, all children between 6 and 10 years not in school, registered destitutes and



remote area dwellers were eligible for supplementary food aid. In addition rural primary school children who were receiving one meal per day during the school term received take home rations for weekends and holidays (Food Studies Group, 1990. Quoted in Belbase and Morgan, 1993, p.17).

#### ii) National Rural Employment Programme

An important element of the national food security strategy is the creation of income earning opportunities. The national rural employment programme comprises a labour-based relief programme (LBRP) which provides employment in short-run seasonal public works projects at a wage rate which is below the national daily wage. Village development committees select the projects which are expected to provide relief to households affected by the droughts through immediate such income earning opportunities. Projects engaged in normally create useful village infrastructure. A notable project under this programme is the hand-stamping of sorghum grain into flour by rural women for school feeding on a piecework basis.

#### iii) Agricultural Relief and Recovery Programme

Under this programme farmers in the 1980s were assisted to increase agricultural production through the provision of free seeds, subsidized livestock feed and free vaccination services. Also funded under this programme was water supply improvement and a cattle purchase scheme whereby older cattle are purchased under a guaranteed price scheme. The current agricultural relief component is less comprehensive compared to the 1980s. There is now free botulism vaccine for all cattle but not additional subsidies on livestock feed and the cattle purchase scheme is no longer operational (Belbase and Morgan, 1993, p.9) Agricultural mechanisation under this programme is currently subsidized at P100 per one hectare of land ploughed and P40 per one hectare of farm area planted.

#### iv) Water Supply Programme

Under this programme funds are provided to district councils to enable them to meet the costs of water transportation and borehole maintenance in needy areas as a result of the drought. The rehabilitation of existing water systems and construction of new ones in areas of extreme shortage are also funded under this programme.

### 2.4 Structure of the National Food Security Strategy

The national food security programme is administered by the cooperative efforts of five government Ministries: The Ministries of Local Government, Lands and Housing (MLGLH), Agriculture; Mineral Resources and Water Affairs (MMRWA); Health and Education. The Food Resources Department (FRD) of MLGLH handles

the human relief programme with the cooperation of the Ministry of Education and the Ministry of Health. The FRD handles food-aid imports, local purchases and distribution to schools and health facilities. The agricultural relief and recovery programme is administered by the Ministry of Agriculture through its agricultural extension and veterinary staff. The Ministry of Mineral of Mineral and Water Affairs is in charge of all water supply problems. The Ministry of Health monitors nutritional levels and organises on-site feeding of malnourished children and vulnerable groups while the Ministry of Education ensures the feeding of primary school children (Holm and Cohen, 1988, p.35).

The main coordinating body at the district level is the inter-sectoral District Drought Committee (DDC) which is a sub-committee of the District Development Committee. The DDC includes representation from the District Council, Tribal Administration and Central government ministries at the district level including a representative of the Department of Wildlife. The committees provide information on district-specific feedback on drought-related and general food security needs to the central government.

The activities of the various government Ministries are coordinated by an Inter-Ministerial Drought Committee (IMDC) which is under the umbrella of the Rural Development Council of the Ministry of Finance and Development Planning (MFDP). The IMDC through its early-warning technical group collects and makes regular monthly reports on rainfall, soil moisture, crops production, wildlife status, nutritional status of the population, and the general food situation. The above information helps to provide policy directions for the various institutions involved in the implementation of drought relief programmes (Holm and Morgan, 1985, pp.470 - 471) (Mokobi and Asefa, 1989, p.261).

The "Drought Assessment Tour" (DAT) which was instituted in the mid-1980s provides information essential for the activities of the early-warning technical committee (EWTC). Teams of the IMDC and the EWTC members visit each of Botswana's ten districts during a single rainy season with follow-up visits in drought years. Extensive meetings are held with the District Drought Committees, and information is also collected from field visits and key informants. Information reviewed during the DAT includes meteorology, livestock and crop conditions, child nutritional status, prices, drinking water, school feeding vulnerable group feeding, public works and the status of wildlife (Belbase and Morgan, 1993, p.12). The DAT provides necessary information for the declaration of a national drought emergency or planning of relief and resource mobilisation efforts.

The Strategic Grain Reserve Monitoring Group (SGRMG) monitors food stocks, prices, procurement, transportation and distribution of food related to national and regional grain reserves in the country. The SGRMG also monitors food imports by the private sector and their distribution within the country. Information

from the SGRMG feeds into other information used by the National Food Strategy Monitoring Group (NFSMG) to provide longer-term policy guidance on food and nutritional issues (Belbase and Morgan, 1993, p.13).

Important aspects in improving the NFS include the following:

- i) improvement of the data base on the food economy;
- ii) programmes to increase food and seed production and to reduce fluctuations in production caused by drought;
- iii) strengthening of consumer and nutrition oriented programmes;
- iv) improvement of drought relief planning and implementation at the national and district levels.
- v) designing a programme for post drought recovery; and
- vi) establishing an adequate strategic grain reserve.

The above key areas necessary for the effective implementation of the NFS are briefly elaborated upon as follows:

#### 2.4.1 Improvement of the Data Base and Monitoring

Existing sources of data on food-related question have been of great importance to the implementation of the NFS. Such data have included the various reports of the national household survey. Data emanating from the Early Warning System for drought started in 1984 have also been useful in the implementation of the NFS. Data such as agricultural conditions, agro-meteorology, nutritional status and information on food supplies have been useful to the Early Warning Technical Committee which makes recommendations to the Inter-Ministerial Drought Committee in its works of monitoring and assessment of the food situation. However, efforts are also being made to assessment of the food situation in Botswana.

#### 2.4.2 The Strategy for Arable Agriculture

Small scale dryland farmers have been assisted under the Arable Lands Development Programme (ALDEP) implemented by the Ministry of Agriculture (MoA) with farm implements, draft power and infrastructure. Improvements of marketing and input supply and tillage methods have particularly been stressed. Commercial dryland farmers have been assisted under the NFS with grain price subsidies and Financial Assistance Policy (FAP) grants in addition to National Development Bank (NDB) loans given under concessionary conditions.

Food production under rainfed conditions in an arid and semi-arid environment has been risky. Possibilities of irrigation agriculture have been explored under the NFS. The experience of the Botswana Development Cooperation (BDC) as a producer and as a research organization in irrigated agriculture has been useful in the effort to develop new areas for irrigation.

Types of support being provided under irrigation development have included start-up capital for investors, employment-related grants, infrastructural improvements, marketing facilities, investments in water management and storage infrastructure, research and extension services.

The crop pricing policy of the Botswana Agricultural Marketing Board (BAMB) during the food self-sufficiency strategy of NFS resulted in a "reasonably favourable price regime which were inflated prices being offered to producers as an incentive to encourage domestic production of maize and sorghum in particular. However, under the import and export pricing policy of the Agricultural Development Policy of 1991, farmers are to receive a producer price that competes with the equivalent imported quantity (Sigwele, 1993, pp20 - 21).

The Financial Assistance Policy (FAP) which was initiated in 1982 provides financial assistance to new or expanding enterprises involved in business activities in the manufacturing and certain areas within the agricultural sector. Priority is given to activities which create employment. Financial assistance given to businesses which have successfully been appraised for economic viability and management capacity generally covers a proportion of the initial capital costs with diminishing assistance each year till the termination of assistance at the end of the fifth year.

#### 2.4.3 Household Food Consumption and Nutrition

The implementation of the NFS has depended to some extent on the promotion of the better use of available foodstuffs and the promotion of better access to food in the rural areas. Assistance to consumer cooperative groups have been continued and retail prices for basic food stuffs have continued to be monitored. The Ministry of Health's primary health care programmes have intensified nutrition education efforts during the implementation of the NFS. Efforts have been made to diversify types of food supplies such as fish, fruits and vegetables including veld products that have been available for consumption.

Relief and recovery programmes such as supplementary feeding, direct feeding of malnourished children, and increase of rural incomes through public works, have been used to improve the nutritional levels of the population in both drought and post-drought recovery periods. It is

hoped that the continued implementation of the NFS will lead to a situation where there is at least a minimum acceptable diet for all Batswana.

#### 2.4.4 Drought Relief Planning and Implementation

Measures that have been strengthened under the NFS implementation strategy have included supplementary and direct feeding, labour based public works, agricultural relief measures and emergency water supplies (MFDP, 1985, p.iii). Under the NFS the above institutional structure is being strengthened to enable the nation to cope better with future droughts. The strengthening of the existing institutional structure is expected to entail better training for management of the food system and improved operation and design of the labour programmes. Other measures being given priority attention in the planning and implementation of drought relief include the provision of adequate storage facilities at all levels in the distribution chain.

#### 2.4.5 Post Drought Recovery

In order to assist communities affected by droughts to adjust better to post drought situations the following measures have been undertaken (MFDP, 1985, p.iii):

- i) better targetting of supplementary feeding to those in need;
- ii) intensification of direct feeding and rehabilitation of malnourished children;
- iii) agricultural recovery measures which include provision of free seeds, mechanisation (including animal draft power) subsidies and destumping grants, to enable farmers to recover lost assests and productivity; and
- iv) supplementation of rural incomes through labour based recovery projects.
- v) Remote Area Dwellers (RADs) also called Basarwa are being helped to improve their living standards through the post drought recovery programme.

### 2.5 Impact of NFS on Food Security in Botswana

#### 2.5.1 Introduction

A major thrust in the food security strategy in Botswana as contained in the NFS over the past decade has been the drought relief programme (DRP). The main components of the DRP have been the following:

- i) Feeding Programme

- ii) Labour Based Relief Programme
- iii) Agricultural Relief and Recovery Programme
- iv) Water Supply Programme

An evaluation of the above programme for the period 1982 - 1990 was completed in 1990. Aspects of the evaluation of the DRP as they affect the impact of the NFS on food security in Botswana are presented as follows (MFDP, 1993b, pp2 - 4):

### 2.5.2 Feeding Programme

This programme has been described as having been efficient during the period 1982 - 1990 because it was relatively well targeted and it benefited the target beneficiaries (MFDP, 1993b, p.2). In the 1980s the programme is reported to have successfully stabilised nutritional status and proved to be a valuable form of income transfer. In the 1980s the feeding programme was targeted to broadly defined groups in the population such as all pregnant and lactating women, and all children under 5 years. At the peak of the programme about 60 per cent of the population was receiving food rations. However, as at the 1992/93 period, targeting of beneficiaries of the programme had been streamlined. Only medically selected pregnant and lactating women, for example, were eligible for supplementary feeding compared to the 1980s when all pregnant and lactating women were eligible for supplementary feeding. Effective targeting of the programme to reduce costs and improve efficiency remains as issue (MFDP, 1993a, p.2; MFDP, 1993b, p.2).

### 2.5.3 Labour Based Relief Programme (LBRP)

This programme has been assessed to have been effective in providing income supplementation with widespread benefits during the 1980s (MFDP, 1993a, p.2). During the drought period of 1982-87, for example, a total of 296,000 job opportunities involving 15,000 projects is reported to have been created. Of those employed 80 per cent consisted of women. Direct income transfers to beneficiaries in the form of wages amounted to about 63 per cent of the total cost of the programme for the period 1982-87. The LBRP is reported to have been effective in self-targeting of the poorest although data to support this assertion is lacking. Most of the infrastructure created as a result of the LBRP in the form of rural and social infrastructure were considered useful. The successes of the LBRP led to it becoming the central focus of the DRP during the 1992/93 year with considerable expansion. Close to 100,000 job opportunities covering about 3,000 project are reported to have been created.

The operation of the LDRP has not been without problems. A major problem with this programme in recent times, particularly in 1992/93, has been that of low productivity explained in part by the fact that the relief/welfare objective has taken precedence over productivity objectives. Thus in 1992/93, productivity is reported to have been compromised "as more, people were employed without any work to undertake and funds were paid out to idle labour". It has also been mentioned in the evaluation reported

that LDRP programme funds lack clear guidelines as to who is accountable and there are no control measures to avoid fraud. In order to improve productivity with the LDRP programme it has been suggested that there is need for skilled technical expertise at the district level to implement and supervise labour intensive public works programme and also there is the need for a greater use of private contractors (MFDP, 1993b, p.3).

#### 2.5.4 Agricultural Relief and Recovery Programme

This programme has been the most expensive financially of all the components of the drought relief programme. The largest component of the agricultural relief programme was the Accelerated Rainfed Arable Programme (ARAP) which was introduced in 1985/86. The range of subsidies provided to farmers under ARAP covered weeding, basic seeds, destumping, row planting, and ploughing. These measures are reported to have had some effect on arable production, at least in enabling most small scale farmers to maintain some links with arable agriculture sector despite repeated harvest failures, and in helping to achieve a recovery of crop production in the 1987-88 cropping season with the return of good rains (Belbase and Morgan 1993, p.19).

None of the agricultural components of the drought relief programme was targeted since they were intended to benefit all farmers alike. It became obvious later on that different production systems could not be covered effectively with the same indiscriminating programme. Subsidies in the livestock sector in the 1980s, for example, are reported to have mainly benefited large cattle owners at a time when more than 10,000 traditional farms were losing all their cattle. Targeting of the most needy farmers in the drought relief programme still remains an unresolved problem (MFDP, 1993a, p.3).

#### 2.5.5 Water Supply Programme

This programme is reported to have resulted in the provision of clean and dependable sources of water. Short run water needs are to be met through temporary supplies while in the long run the rehabilitation of old boreholes or the construction of new ones are the programme's objective (Holm and Cohen, 1988, p.33).

#### 2.6 National Food Security Research

More fundamental types of research need to be conducted within Botswana especially in the Western Region to fully appreciate the issues involved in food security. There is need for a more accurate information on the food insecure, where they are, the extent of the resources at their disposal and the effectiveness of the efforts aimed at alleviating their food insecurity. Also needed is the adequate coverage of research into the adequacy of nutritional quality and quantity of the food insecure. This information will enable the problem of targeting of food relief to be minimised. There is also a need for research on how to make the food security programme in Botswana generally more

effective. Research into management of finance in the procurement of supplies, factors that can enhance increase of domestic food production and accessibility to the food supplies will enable the food security programme in Botswana to be better executed with the available information.

While there have been some studies in the past aimed at assessing the effectiveness of programmes aimed at achieving national and household food security there are several areas for food security research that are yet to be tackled. The impact of the drought relief programme on the household's living conditions needs to be known for effective follow-up in the future (MFDP, 1993b, p.4). The question of effective targeting of beneficiaries in the drought relief programme also needs to be researched into so that present imbalances in the provision of food security to all Batswana can be corrected.

### 3. SOUTHERN AFRICA DEVELOPMENT COMMUNITY (SADC) FOOD SECURITY INITIATIVES AND BOTSWANA'S FOOD SECURITY STRATEGY

#### 3.1 SADC's Food Security Concept

SADC defines food security as "ensuring that all members of a household, nation, or region have access to an adequate diet to lead an active and normal life" (Carrol, et al 1992, p.22). This definition, according to SADC, has two essential elements: food availability through expanded production, storage and trade as well as food access through production, purchasing from the market and food transfer programmes (Carrol et al, 1992, p.22).

The SADC food security strategy has emphasized the importance of cash crops, and diversified agricultural, agro-industrial and other income generating activities to enhance household food security and the alleviation of poverty.

The principal elements of the food security programme within the SADC region have been described to include the following (Muchena, 1988, pp.7 - 8).

- i) development of mechanisms for the exchange of information,
- ii) reinforcement of national food production capacity;
- iii) development of intra-regional trade in food and other crops;
- iv) improvement of food storage, delivery, conservation and processing;
- v) development of cash crops and other agricultural enterprises;



- vi) establishment of systems for the prevention of food crises;
- vii) establishment of programmes for the control of major crop pests and diseases;
- viii) development of skilled manpower; and
- ix) development of mechanisms to facilitate the availability of appropriate production inputs from within the region and outside.

Three objectives of the food security programme in the SADC region are as follows (Dhliwayo, 1987, p.10):

- i) to satisfy the basic food needs of the region's population and progressively to improve food supplies to all people in the region, irrespective of their position in society;
- ii) to achieve regional self sufficiency in food supply to the maximum extent possible in order to reduce the region's dependence on external sources of food; and
- iii) to eliminate the periodic food crises which affect some areas or countries of the region.

SADC's food security strategy recognises that increasing food production will not necessarily improve food security or end hunger and malnutrition. The strategy therefore aims to increase regional, national and household food security by encouraging activities within the region that will enhance the ability of all people to have access to adequate diet. The SADC food security strategy emphasises the need to increase food production in member countries where this can be done economically. In the effort to increase household incomes through the creation of employment, the SADC food security strategy encourages crop diversification projects such as horticultural crops, export crops, dairy, livestock production, industrial raw materials, and projects to create off-farm employment (Almond *et al*, 1988, p.49.)

### 3.2 Botswana's Food Security Concept

The Botswana food security concept has been described as referring to "permanent access by all people to enough food for a productive and healthy life" (Sigwele, 1993, p.16). Within this concept is the recognition that an increase in food production or the physical availability of food is not a prerequisite to a permanent access to food. In order to improve household incomes leading to improved access to food, the Botswana food security strategy aims to use facilities such as the Financial Assistance Policy (FAP) to help households to diversify into alternative income and employment sources within

primary agricultural activities; agro-processing such as grain milling, timber hides and skins; manufacturing; tourism; wildlife management; informal and service sectors (Sigwele, 1993, p.19).

Recognizing the fact that the country's unfavourable physical and climatic circumstances, and technological know-how have not made it possible for Botswana to produce most of her food requirements an important aspect of Botswana's food security strategy is that the country will continue to augment its domestic food supplies with food imports through trade to satisfy the demand for food. Botswana is for the time being able to afford these food imports because of her strong foreign exchange position.

### 3.3 Relationship Between SADC and Botswana Food Security Concepts

SADC and Botswana Food Security concepts have many things in common. Both recognise the fact that food security exists when all individuals of the society or region have access to adequate food throughout the year. Various degrees of food insecurity may exist within Botswana and the region as a result of inadequate household or national income to purchase the food even if available.

As a result of the favourable foreign exchange reserve position of Botswana compared to other countries within the SADC region, food imports, mostly from South Africa, have featured prominently in making up for any shortfall in domestic food supplies. However, within the SADC region, some countries may not be able to afford to import in large quantities to augment domestic food supplies and may have to rely increasingly on food produced domestically or on food aid.

In both Botswana and SADC food security concepts there is a stress on strengthening household and national food security through increases in incomes made possible by increased employment. In SADC countries with a relatively favourable agricultural sector the generation of increased incomes is likely to come through increased productivity and employment generation mostly through the agricultural sector and then the non-agricultural sector. In Botswana as a result of the unfavourable agricultural soils and climate, increases in incomes and employment are less likely to be generated in the agricultural sector. They are more likely to be generated within the non-agricultural sector.

### 3.4 Influence of SADC Food Security Initiatives on Botswana's Food Strategy

As part of its food security strategy SADC has had a number of initiatives to enhance food security within member States of the region. These initiatives have culminated in a number of food security projects. Some of these projects are operational depending on the funding status of a particular project. Some of the SADC food security projects which have had some influence

on Botswana's food security strategy are briefly described as follows:

i) Regional Early Warning System

This is a SADC Regional Early Warning Unit (REWU) which coordinates the early warning activities of the ten National Early Warning Units (NEWUs) in the SADC member States. The REWU which is based in Harare provides computer enhanced satellite images of the Botswana Vegetation Index. The images cover ten day periods and they are faxed every two weeks. They are useful in their provision of visual support and other information useful to the work of the Early Warning Technical Committee in Botswana (Food Studies Group, 1990, p.15). This information is used in the forecasts of droughts and food situation reports by the Early Warning Technical Committee in Botswana.

The REWU analyses and summarises the food security situation received from the NEWUs in the form of national bulletins. This information is collated in the form of regular food security bulletins for the region as a whole. These summary bulletins are sent back to the SADC countries to enable them to monitor the regional food situation regularly (SADCC, 1992, pp.21 - 22).

ii) Regional Inventory of Agricultural Resource Base (RIARB)

The overall objective of the project is to compile and collate agricultural resource data in the SADC countries and estimate the potential for agricultural production in the region. The inventory provides a basis for agricultural land use planning in the SADC region. It will provide in map form data from a variety of sources. This project is now in its second phase. During the first phase of the project there was a comprehensive collection of maps, publications, reports and references which was beneficial to Botswana (SADCC, 1992, pp.23-24).

iii) Regional Post Production Food Loss Reduction and Food Processing

This project involves the reduction of post-production food losses in the region through the use of more efficient post-production operations and the establishment of rural facilities for storage, preservation, processing, distribution and marketing of food products. The implementation of the project is being coordinated by the Post-Production Food Industry Advisory Unit (PFIAU). The strategy of the PFIAU is to facilitate action in the post-production system in member States. It also conducts seminars and workshops aimed at facilitating discussions to identify potential areas within respective systems that require intervention. A number of projects to improve post-production system have been implemented in Botswana, Angola, Zambia and Lesotho (Dhliwayo, 1989, p.22).

iv) The Sorghum/Millet Improvement Programme (SMIP)

The Sorghum and Millet Improvement Programme (SMIP) for SADC

countries including Botswana was established in September 1983 and began operations in May 1984. The project is located at Matopos Research Station near Bulawayo, Zimbabwe (ICRISAT, 1993?, p.1). The principal source of demand for sorghum and pearl millet within the SADC region is in the rural areas where these two crops are used for home consumption and therefore important for food security. They are also used for the production of traditional beer which is an important source of petty cash income for many poorer households.

In Botswana sorghum and millet constitute 84.5 per cent of the total area cropped to cereals with sorghum being the dominant crop. Sorghum and millet constitute 80.3 per cent and 4.2 per cent respectively of the total area cropped to cereals (FAO Production Yearbook, Vol.44, 1990. Quoted in ICRISAT, 1993, p.59).

The growth rates of sorghum for the period 1979-81 to 1988-90 in terms of land area, yield per hectare and total production have been 7.4, 6.4 and 12.2 per cent, respectively. For millet the growth rates in terms of land area, yield per hectare and total production have been -2.0, 6.3 and 0.0 respectively (FAO Production Yearbook, 1990. Quoted in ICRISAT, 1993, p.66). Thus sorghum has been responsive to improvements in production technology and price incentives compared to millet.

#### 4. SUMMARY AND CONCLUSION

This paper has briefly examined the national food security profile of Botswana. The details of the food security strategy as outlined in the government's National Food Strategy document has been discussed. At the centre of the National Food Strategy has been the drought relief and recovery programme. The successes and inherent problems with various components as indicated in various evaluation reports for the period 1982 - 90 have also been briefly discussed. Also discussed in this paper is the relationship between Botswana's and SADC's food security concept. Although Botswana's food security strategy has been acclaimed as having been successful in preventing famine even in the severest drought years a lot still needs to be done with regard to making effective the implementation of food security programmes. Of particular importance is targetting of the programmes to those households which actually need to be helped.

Also of some interest to the development of human resources in the rural areas is how to avoid a situation where dependency on government programmes by those on food relief becomes endemic. The issue here is on implementing programmes that can lend to eradication of a dependency situation. For example, how can destitutes be made to gradually become self-reliant. The importance of research to come up with solutions to some of the problems indicated need to be stressed.

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