

# The state of food security in botswana



About 25,000 people die every day according to the United Nations report ([www.unicef.org](http://www.unicef.org)) due to hunger, this happens because of an increase in food prices resulting in at least one billion people around the world suffering. The UN and the Food and Agricultural Organization (FAO) are working very hard to come up with the solutions to the global food scarcity and high food prices, which started at the beginning of mid-2008. The underinvestment in the agriculture sector has caused a silent crisis, which was worsened by the creation of a booming bio-fuel industry in which food crops are used for fuel instead of as food for eating (FAO 2008).

In addition, the recent global financial crisis affecting the economies of the countries, led to the loss of jobs to millions of people around the world, thus deepening poverty. The World Food Summit 2009 (WFS) estimated that “the number of hungry people could increase by a further 100 million in 2009 and pass the one billion mark”. The FAO director Diouf showed a concern on the issue by saying the following words:

“The silent hunger crisis affecting one sixth of all of humanity poses a serious risk for world peace and security. We urgently need to forge a broad consensus on the total and rapid eradication of hunger in the world.” ([www.fao.org](http://www.fao.org))

The world is faced with all the challenges which reduce the level of access to food by all, leaving many people with hunger. The World Health Organization (WHO) estimates, one third of the population is well fed, and one third is starving while the remaining one third of the population is under-fed. With these statistics, it shows that there is not enough food for everyone in the

world. The global food insecurity situation has worsened and continues to pose a threat for humanity. With the increase in food prices and transportation costs remaining high in developing countries, the number of people suffering from hunger has been increasing rapidly in recent years (FAO 2009). This increase in food insecurity has negative effects on gender equality and education, and it undermines the efforts of the Millennium Development Goals (MDG).

### **Objectives and scope of the study**

Poverty estimates indicate that 30.3 percent of the population in Botswana is below the poverty line (CSO HIES Report 2002), that is, nearly one-third of the population. Though Botswana's poverty rate declined from 59 percent to 47 percent in 1985 and 1994 respectively, there is still evidence of high poverty as indicated by the report. In 2002/3, the national income poverty was estimated to be 33 percent and subsequently stood at 30.2 percent in 2005/06.

The recent FAO (2009) statistics indicates that about 500,000 people in Botswana are food insecure mainly because they do not have access to quality food. For an import dependent country like Botswana, increase in prices due to high transportation costs and use of food crops for bio-fuels results in a decline of the country's import capacity (Steven 2000).

With macroeconomic policies that have proven to be efficient, competitive and sustainable in past years (BOB Annual Report 2008), the results from the FAO report and statistics of poverty rates in Botswana informs this discussion on what could be reasons leading to high rates of food insecurity in

Botswana. The paper will discuss how policies and strategies on food security can be implemented to assist Botswana to achieve her intended goals of reducing poverty and the level of food insecurity, the effectiveness of the policies that have been put in place; the impact of the climate conditions on the food production and the effects of trade liberalizations.

Management of natural resources and good implementation of agricultural policies are the most important determinants of food supply. Furthermore, the efficient support of markets, from the government have the capacity to improve the performance of appropriate roles each sector either the private sector or government in order to assist in curbing failing policies is important (Robinson 1997). These issues will be discussed in detail to analyse the situation in Botswana.

## **Chapter 2: FOOD SECURITY**

### **Introduction**

There are various conceptual development of thinking on how to define food security, different writers have differing definitions. Whenever the title is introduced in the study, it is important to look closely to find an explicit definition because of its intensity. Food security is a widely debated topic, given that it affects people across the globe. Diseases, famine, wars are the major contributors to food insecurity especially in the sub-Saharan African continent (Lado 2001)

The World Bank (1986) defined food security as “ permanent access to sufficient food by all people at all times for an active, productive and healthy life”, and this definition together with the FAO definition are widely accepted

by institutions and organisations (Stevens 2000). The FAO (1998) defines food security as “ the right of everyone to have access to safe and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be free from hunger”. Looking closely into the definitions, they seem to capture the most important components of food security which is the guarantee (availability) of having access (accessibility) to enough food (utilization) at any given time (Stevens 2000). These three components will be discussed further in the next section.

Furthermore, a situation whereby people have the right to enough food leads to a healthy and productive life, and this is determined by access to and availability of food. Accessibility to food has a close relationship to economic growth and poverty. The poor usually do not have enough means to gain access to food in the required quantities (Alversen 1997). Hubbard (1995) and Lado (2001) also provide a similar definition, these definitions indicate that people should be confident that food will always be accessible easily by having the economic right in order to maintain a healthy status.

There are no satisfactory definitions of food security, hence there are some other alternative ways of describing it. Some researchers use terms such as food crisis, famine, and food insecurity to come up with suitable definitions (Sen 1981). FAO defines food insecurity as a situation whereby people do not have adequate physical, social or economic access to food.

In order to be able to define food security, it is prudent to differentiate between the household level and the national level of food security. Kotze (2000) explains household level as having enough food to ensure a minimum

intake for all members of the household, while at the national level food insecurity exists because the country's food production and trade entitlements become problematic. If the country's production level becomes insufficient, it jeopardizes access to food by all, and also leads to inadequate supplies.

In conclusion, food security can be defined as access to physical and economic means by all groups of people at all times in order to meet their dietary demand and food preferences for an active and healthy life.

## **History of food security**

Food security has been in the public eye for many decades. The example provided by Tannehill (1988) of Julius Caesar's struggle with the spiraling cost of food subsidies in ancient Rome shows the historic trend of interests in the evolution of thinking about food security. The FAO report indicates that the food security concept started in the 1970s at a global food crisis meeting that was discussing international food problems. The reduction in the food supply and instability of prices on basic foods led to the World Food Conference that was held in 1974 (ODI 1997).

Maxwell (2001) characterized the history of thinking about the food security since the 1970s as a progressive conceptual development. Since the mid-1990s, more approaches based on the livelihoods approach have dominated the discussions of poverty and food insecurity analysis. Since then, there have been more programs initiated to embark on fighting the food insecurity level in the world. Different approaches have been adopted to assess, monitor and map the way forward of food insecurity and

vulnerability. A number of models have been developed and adopted by development countries in order to curb the problem of food insecurity. In the case of FAO for example, they came up with a program of refining the social economic analysis by expanding national food availability to include household and individuals (Devereux 2004).

## **Components of food security**

Food security can be determined by different components which are related to the definitions provided earlier. Stevens (2000) explains these components of food security as the determining sets of factors. These components are availability, accessibility, utilization and vulnerability. All the four components conform to the definition of the World Bank (1998) which is the guarantee (availability) of having access (accessibility) to enough food (utilization) at any given time by all people (vulnerability) (Stevens 2000).

## **Causes of food insecurity**

Different studies show that there are many causes of food insecurity in the world. In the Sub Sahara continent, the increase in food insecurity is a result of poor economic and social conditions such as the population growth, natural disasters, and also political disturbances play a major role.

The southern Africa countries most have a bad climatic condition as reported by the United Nations Environment Programme (UNEP 2005) and SADC monitoring unit. Furthermore, these poor weather conditions result in low production of agricultural goods thus affecting food availability and utilization.

Other contributors to food security will be discussed in depth, and these are as follows: Natural disasters, Low production of agricultural commodities, falling prices of agricultural commodities, Scarcity of land, Unequal distribution of food and resources, Lack of purchasing power, Political instability and Population growth.

## **CHAPTER 3: FOOD SECURITY IN BOTSWANA**

### **Brief description of Botswana**

#### **Economic policies**

Botswana gained independence in 1966, during that time, the economy was dominated by the agriculture sector which comprised of mainly cattle farming, and it contributed about 40 per cent to the country's GDP. Since then, the country enjoyed rapid economic transformation which placed Botswana on top of the list of countries in the African continent (CSO statistical bulletin 2006). In 1968 the economy of Botswana was mainly dependent on minerals such as diamonds. The mining sector now contributes about 51 per cent to the country's GDP dominated by the diamonds, while the agricultural sector showed a decline in share of the GDP thus contributing about 4 per cent (CSO 2006). The most drastic changes in the economy were seen in the 1990's due to the decrease in diamond prices globally, (BOB 2008). These challenges resulted in the country to come up with other alternatives, hence decided to diversify the economy by looking into other sectors such as tourism, agriculture and textile & manufacturing (BIDPA).



The IMF 2008 report indicates that economic growth has picked up especially in the non mining sector. Inflation has decreased stabilizing the targeted range by the central bank, though inflation risks remain (BOB 2008). Despite these structural economic changes, however the country is faced with high incidence of poverty, unemployment, and HIV/AIDS (IMF 2008).

The country depends heavily on imports mainly from the neighboring country South Africa. Minerals and beef exports accounted for 85 and 4.4 per cent, respectively, of total exports in 2009 (CSO monthly trade report 2009). On the other, 22.0 per cent and 13.3 per cent of machinery & equipment and food respectively shows the highest number of imports. Therefore, food remains the most important component of the import bill in order to meet the shortfall in most basic food commodities that the country cannot produce.

Due to its land lock position, Botswana's economic development is vulnerable to external influences. The country is easily affected by the unstable political regional situation in southern Africa.

## **Population trend**

The population of Botswana is approximately 1.7 million, leaving it in the 144th position amongst 193 nations in the world (UN). The population growth rate is estimated to be 2.4 per cent per annum (CSO, 2009). The population in Botswana is unevenly distributed, with 54 per cent of the population living in the urban areas and 46 per cent living in the rural areas (CSO stats update 2009). The main problem leading to the slow growth of population is mainly

due to the high prevalence rate of HIV/AIDS which stood at 17.1 percent in 2002.

## **Agricultural policies**

Botswana started to adopt food security policies since the 1970s, and the policies were mainly to promote self-sufficiency. In 1991, a shift in the policy from self-sufficiency to food security was seen whereby the government, banks and donors, farmers worked together in order to fulfill the intentions of the policy (BOB 1990).

In 1972, the Botswana Rural Strategy was launched aimed to increase the level of production and improving the market facilities in the rural areas and creating rural employment opportunities. As part of its National Development Plan (NDP), a policy known as Accelerated Rural Development Program (ARDP) was formulated in 1973. Later in 1975, another program called The Tribal Grazing Land Policy (TGLP) aimed at maintaining optimal balance between the people, land and livestock (GOB 1972). As a way of showing commitment to availability of food to the people, the government in 1985 approved a National Food Strategy Policy for formulation and implementation of whole range of food security related programs ([www.moa.gov.bw](http://www.moa.gov.bw)).

Furthermore, the government introduced other programmes in line with the NDPs such as The Arable Land Development Programme (ALDEP) which was aimed at assisting small-scale farmers in increasing cereal production to promote self-sufficiency. The small farmers were provided with subsidies by the government to buy capital inputs such as farm implements, draft power

and fencing. Another program called The Accelerated Rainfed Arable Program (ARAP) was launched. It provided farmers with short term assistance to help them recover from the drought season. During the NDP 6, the government allocated more funds to the agricultural sector, subsectors such as arable farming was targeted. The Financial Assistance Policy (FAP) programme was introduced to provide capital and labor grants to dairy farming, irrigated agriculture, poultry and small stock farming (Sigwele, 1991).

Recently, the government reviewed all these policies to come up with new schemes that will increase the level of food production in the country. Certain constraints were identified such as non committal by farmers after receiving funds from the government (MOA 2006). The government also provided farmers with training skills and increased the budget on research and development to increase knowledge on achievements of self-sufficiency. However, with all the good initiatives by the government, the unfavorable climate conditions in Botswana made it difficult for the government to achieve the priorities of attaining self sufficiency programs due to periodic droughts (MOA 2006).

## **Health**

Botswana has achieved remarkable advances in terms of achieving good health status. In order to achieve the goals of reducing poor families economically and socially, providing access to good health facilities will help to maintain good health status among people. The government should provide health programs , medication which everyone can access for free in order to enhance productivity and self reliance.

The government of Botswana has shown commitment to improve its health status by increasing the allocation of resources to the health sector. In the past decades, we have seen the health sector given between 5 and 8 percent share. More hospitals have been constructed in various villages and proper training of personnel has been a major investment of the government. (www. gov. bw).

Though Botswana is faced with challenges of high HIV prevalence rates and Malnutrition which has severely affected the economic and agricultural situation of the country, there has been a substantial change in the health system, this is proven by the improvement of survival indicators (CSO stats update 2009).

The government is trying to allocate resources evenly across the country through its implementation of the NDP's, but sometimes it fails to achieve this goal. Hence there may be some instances in which other regions get more developments than the others. This leads to most rural areas being disadvantaged and resulting in more health facilities in urban areas. People in the urban areas are better off as they can easily access the hospital due to good transportation systems. These differences may contribute more to the inequality and household poverty in Botswana. When people are ill or malnourished, they cannot contribute positively to the production of food hence affecting the agriculture sector.

## **Education**

Education is very important to the development of humanity creates better opportunities and choices for individuals. It empowers people to improve their

welfare through increasing productivity and offer potential chances to improve standards of living. If more people are not educated, they cannot adapt easily to new innovation skills and technologies for agriculture, hence hampering government programmes to support food- self sufficiency, economic achievement and social prosperity.

## **Climate and Environmental impacts**

Research has indicated that Botswana's climate change projections are vulnerable to climate change, posing a negative impact on the water resources and crop production. As currently there is no policy which deals with the problems caused by climate change, instead there are some recommendations that the government is trying to implement from the various studies that were conducted, a number of national policies are already in place responding to climate change. The government has demonstrated a high level of concern for environmental issues in the country.

The climate of Botswana is distinguished by both high temperatures and low rainfall. There is disparity in rainfall in various districts. The northern part of the country usually gets more rain than the other parts of the country. The CSO report further indicates that the " total land area of Botswana is 581, 730 square kilometers where most of the land is infertile due to the predominant sandy soils and the unreliable and low rainfall". The land is differentiated into two types which are, The Kalahari Sandveld covering 77. 2 percent of the land area and Eastern Hardveld covering 22. 8 percent of the total land area (CSO 2008). The soils around the country are comparatively all poor.

With its given conditions of weather, Botswana does not have a suitable area of producing more food because the physical and climatic characteristics are not suitable for food production. This variability is of critical importance to food security and the population's use of the environment.

## **Water and Sanitation**

Botswana is a water scarce country in the southern Africa region due to its unfavorable weather conditions. Statistics show that Botswana records high evaporation rates and low rainfall rates. There is concern about the low levels of water which are not able to meet the demand of the growing population and the economic expansion activities. The consumption of water has increased over the years and yet on the other hand water levels are declining mainly due to drought seasons, especially in urban areas.

The government of Botswana has adopted some imitative policies to provide and accelerate sanitation services with the aim of improving health conditions of the public. This was seen by an adoption of the Waste Management Bill of 1998, which resulted in the establishment of the Sanitation and Waste management Department ([www.gov.bw](http://www.gov.bw)).

Sanitation promotes dignity, safety and privacy especially for women and girls. Clean, safe toilets and hand-washing facilities at home and school help increase the children's ability to learn. Improving health status helps individuals to earn a better living. With effective sanitation in place, it means that the environment will be safer and cleaner for all activities thus allowing children to play activities in clean environments. Families will also be able to prepare safe food and keep cleaner homes. Having access to clean water

and good sanitation infrastructure leads to reduction in poverty and food insecurity (CSO Stats Update 2009). According to CSO report, about 84 per cent of urban residents have access to safe water.

### **Government approach to food security**

The government of Botswana demonstrates the commitment to poverty alleviation through various programs. Botswana signed the United Nations global declarations for the improvement of human conditions and the Millennium Declaration of 2000. “ Botswana is also a signatory to the International Convention on the Rights of the Child (1990); the International Convention on the Elimination of all Forms of Discrimination against Women (1979); the SADC Gender and Development Declaration; the International Conference on Population and Development (1994); and the World Food Summit (Rome 1996)”.

The government of Botswana has managed to adapt and implement good strategies towards poverty reduction and food security through its policies to alleviate poverty such as the Vision 2016, The National Policy on Rural Development, NDPs , the National Poverty Reduction Strategy and other policies,

As part of its commitment to poverty reduction and food security, Botswana has adopted a United Nations Millennium Declaration from which the Millennium Development Goal (MDG) integrates the eradication of poverty and hunger. In order for the government of Botswana to mainstream poverty eradication and hunger, the government came up with the Vision 2016 strategy which its main aim is to propel the socio economic and development

into a competitive, winning and prosperous nation. This strategy is aligned to the country's National Development Plan 9 which is currently active and also it is aligned to the MDG's. Furthermore they provide guidance on how the agriculture sector will be productive and sustainable, and how they will make positive changes to the economic development, poverty alleviation programs and food security by the year 2016 (Vision 2016 document, 2003).

## **CHAPTER 4: DATA ANALYSIS AND DISCUSSIONS**

In this chapter, I will look into the trends of data on Households methods of obtaining food, field and harvest size, Number of meals per day consumed by each member of the household, Level of trade statistics and other elements that are contributors to food insecurity. And also some case studies that have been done in the past about the situation of Botswana on food security.

### **4.1 Food Production Deficiency**

Botswana has a semi- arid climate, only five percent of the land is suitable for arable farming (FAO 2008 Statistics). This makes it difficult for the country to have support for food production in order to meet the demands of the consumers. In developing countries, the arable land use is deviating from its use of farming to industrial base thus resulting in number of farmers reducing (Brown 1995). In Botswana, a similar case is shown by a decline in the level of food production as indicated by figures 1, 2 and 3. Since 1995, the production level of food is insufficient, maize, millet and other crops are mainly affected until 2005. This poses to be a threat to the level of food security in Botswana because if food production reduces, many people will not be able to have access to food.



As compared to other countries, for example China, as a developing country is undergoing through some process of industrialization, their agricultural land has seen some land use changes to industries, housing and infrastructure leading to a decline in the arable land base. Similarly, a decline in the farming base has been experienced in developed countries, such as Japan. Japan produces about 47% of its calories and relies on imports from other countries. Before in 1960, Japan had about 11.75 million farms which declined to 3.13 million in 1992. Furthermore estimates shows that the economically active population in agriculture will be older hence a less number of people will be left in the agriculture sector (Mikishi Okada Association, personal communication, 1996).

From this research, we can see that the global world is becoming more food insecure with shortage of land for farming playing a major role. For the world to run away from poverty, they should take land as a very important resource. If developed countries and developing countries increases the levels of urban agriculture, may be countries will begin to bear fruits by creating conducive environment for food stability (UNDP 1996). In order to achieve this, countries should come up with good policies in land tenure and maximise the local food production as a strategy to stabilise world food resources.

Water is becoming increasingly scarce in Botswana. A number of countries throughout the world experience water shortages (Nicholas 1994). To enhance proper implementation of policies on food security, governments has to increase their expenditure on agriculture sector in order to promote agricultural production. But this has important implications for water

availability. Water scarcity is not currently a major issue in Botswana only, even in the entire world, hence it more attention is needed by policy makers and should not be neglected. Not only the irrigation agriculture will be affected, all other sectors are affected by lack of water. It should be recognised that a land-use decision is also a water-use decision. " A plan based on improving rain-fed agriculture through adoption of measures to make better use of rainfall brings trade-offs in that there may be less runoff to satisfy the water needs of downstream users and environmental functions. Planning for future food security requires integrated analysis of land-use and water resources issues" (Gowing 2003).

The agriculture sector in Botswana is composed of the livestock sub sector and farming sub- sector. The sectors include a traditional system and a commercialized system. The livestock contributes about eighty percent to the agriculture sector (Agriculture Census Report 2004). The above figure 4, shows a decline in the livestock population. Botswana is deficient overall in food production under the current state of technology due to drought. The decline in population of the cattle is mainly due to higher recorded numbers of animal mortality cases. Botswana is mostly affected by the Foot and Mouth Disease which affects the growth of livestock population (CSO Stats brief 2008).

## **4. 2 Employment and Inequality in urban and rural areas**

The agriculture sector share on Botswana's GDP has shown a decline, it stood at 3. 7 percent and 1. 8 percent in 1994 and 2008 respectively (CSO stats brief 2008). The cause in the decline is mainly due to the fact that from the previous analysis, we have seen that the food production reduced, and

the population of the livestock reduced. The 2002/03 HIES report shows that 21.20 percent of the population in Botswana is employed by the agriculture sector and this was the highest sector at national level. The agriculture sector further employs 50.3 percent of people in the rural areas leaving a problem of rural inequality due to the economy's primary reliance on the cattle sub-sector. Moreover, even in the livestock sector, there is a substantial inequality. The data shows a skewed distribution of ownership of resources. The report further shows that even though the agriculture sector employs a large proportion of the population, the income earned is lower in general as compared to other sectors. Only a minority of the population owns cattle and farming land while the rest depend on agriculture by working; they do not have cattle of their own. About 80 percent of rural households produced insufficient food to feed themselves, and the average household produces less than half of its daily caloric requirement (HIES 2002/03).

In rural areas, there are more single households headed by females than in urban areas. They are mostly affected by food insecurity as they are unable to feed and provide substantial care for their families (FAO 2000). This resulted in Botswana adopting strategies that can help the country in its diversification programs in order to alleviate poverty.

### **4.3 Food Consumption**

According to the FAO, food consumption refers to the amount of food available for human consumption as estimated by the FAO Food Balance Sheets. The data used was extracted from the FAO statistical database, however the actual food consumption recorded may be lower than the quantity shown as food availability depending on the magnitude of wastage

and losses of food in the household, e. g. during storage, in preparation and cooking, as plate-waste or quantities fed to domestic animals and pets, thrown or given away.

Food consumption per person is the amount of food, in terms of quantity, for each individual in the total population. Figure 5 shows food groups and the quantities consumed. From the figure, it can be seen that cereals excluding beer and milk excluding butter are the mostly consumed food category, even though showing a decline over the period. From a food security point of view, this is not a good sign of progress for the country's state of food security.

The starchy roots and alcoholic beverages follow as the most consumed food category in Botswana. The 2002/03 HIES report also indicates a shift in consumption patterns of households. Alcohol and Tobacco category remains the highest consumed food after the food category (HIES 2002/03). Research has shown that alcohol has a negative relationship towards food security because household's members spend more of their disposable income on alcohol rather than buying food, thus resulting in lack of access to food by other members of the household. In Botswana research has shown that high intake of alcohol has a positive relationship in contribution to high prevalence rate of HIV/AIDS (BIAS II 2005).

## **CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS**

Conclusions will be made on the basis of the data analysis, and also after discussing the policies aimed at improving the level of food security by the government, how effective are they implemented by policy makers, and then

will discuss what the government should learn from other countries who fairing well in maintaining low values of food insecure people.