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THE ROLE OF MACROECONOMIC POLICY TOWARDS FOOD SECURITY IN BOTSWANA

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ABSTRACT

Macroeconomic policy plays an important role towards the attainment of food security in Botswana because the country is a high cost production area, due to very low, erratic and unreliable rainfall and soils generally not conducive for agricultural production and a small population of 1.7 million sparsely distributed over the land area similar to the size of Kenya or France. Botswana has a 39.5 months import cover from its foreign reserves, has maintained low inflation rates over the last five years, and a progressive tax system allowing low income groups access to relatively higher net incomes. Rapid urbanisation has resulted in significant amount of waste water worth reusing in emerging agricultural potential areas. Higher incomes have boosted demand for less land extensive agricultural activities like poultry and dairy farming. Land use planning for potential areas may be reassessed to include incentives for best uses of land to enhance production and generate employment.

Keywords

Food security	Waste Waters	Water Reuse
Commercial Farming	Urban Agriculture	Botswana

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1. INTRODUCTION

This paper discusses the role of macroeconomic policy towards food security in Botswana and examines the potential role that agriculture will contribute in achieving food security. Good macroeconomic management is considered a critical element towards the achievement of food security because Botswana is a net food importer, and the natural environment conditions are not conducive to agriculture. Specific targeted programmes to the most vulnerable groups in society should accompany good macroeconomic management. While the paper admits that Botswana is a high cost producing country, the paper acknowledges the existence of Batswana who depend primarily on agriculture for lack of alternative sources of income, either as a result of low education status or age. It concludes that Botswana can increase the role of agriculture in food security through sorghum production, and this requires improved focus on rural infrastructure development and access to high potential productive land. The paper begins with the understanding of food security in Botswana, then the nature of the Botswana economy and food security, the role of macroeconomic policy in food security, and whether the role of agriculture towards food security can be enhanced.

2. OBJECTIVES

The main objective of this study is to analyse the role that macroeconomic policy in Botswana has played towards the achievement of food security. This will be used as a basis of identifying whether agriculture has adequately played its role. The paper will also investigate whether individuals and social groups at risk have access to food based on overall food availability or supply, and whether the ability to acquire it is adequate. Finally, the study will look closely at the potential role that agriculture can play to enhance the attainment of food security objectives. Emphasis will be on sustainable agricultural projects and how they may be realised.

3. ASSUMPTIONS

a) The macroeconomic environment will continue to be good
b) Diamond revenue will be stable
c) Agriculture is not the main source of livelihood for rural households
d) Households' primary objective is to increase their incomes and choices
e) Batswana are willing to accept change in land use from communal ownership rights to property rights that exclude non-members and internalise externalities[2].
f) Changes in land use and planning will not deny poor households access to and ownership of land

[2] The cost of overusing the land resource such as overgrazing

g) Botswana continues to enjoy considerable flexibility in subsidising domestic producers as provided in the World Trade Organisation's (WTO) Agreement on Agriculture (AoA)[3].

4. METHODOLOGY

In order to provide an informed analysis of the role of macroeconomic policy in food security and the role that agriculture can play, this study used data from sources that are mainly in the country to reach its conclusions. The sources include the Central Statistics Office of Botswana, the Bank of Botswana Annual Reports, Annual Reports of Government Ministries of Agriculture, Finance and Development Planning and Local Government and Departments of Agricultural Research, Animal Health and Production, Crop Production and Forestry, etc. These specialise in different areas of food security concerns in Botswana.

The study also used telephone interviews with people working in the various areas of food security, such as agricultural marketing, private sector, parastatal and non-governmental organisations, for purposes of incorporating stakeholder opinion with regard to the role of agriculture in achieving food security. Information from the Early Warning System of Government coordinated by the Ministry of Finance and Development Planning was also used to understand the position of the policy development arm of government about how issues of food security are addressed.

In terms of literature review, the Internet and the Botswana Institute for Development Policy Analysis (BIDPA) Library were used.

5. UNDERSTANDING FOOD SECURITY IN BOTSWANA

Food security has been variously defined as access by all people, to enough food, for a healthy life at all times (The International Famine Centre, 2000; Ellis, 1992; FAO, 1997; and Menezes, 2001). In this paper, food security will refer to access by all people at all times to enough acceptable food for an active, healthy life (FAO, 1997). The emphasis will be on access to acceptable food, or whether people have sufficient command over food. The paper will investigate whether individuals and social groups at risk have access to food based on overall food availability or supply, and whether the ability to acquire it is adequate. In Botswana, chronic[4] food insecurity has not been reported, but transient[5] food insecurity is common. Food insecurity in Botswana is associated with high rates of crop failure and lack of employment and lack of savings for contingencies.

In Botswana, an extensive welfare programme addresses transient food insecurity (EWTC, 2002). This programme includes the destitute programme, the under 5 year old

[3] See http://www.fao.org Agriculture, Trade and Food: Botswana Country Case Study

[4] Chronic food insecurity is a continuous inadequate diet caused by persistent inability to acquire enough food.

[5] Transient food insecurity is a temporary decline in a household's access to enough food.

supplementary feeding programmes in health clinics, the supplementary feeding programmes for pregnant and lactating mothers attending growth monitoring health clinics. In addition, there is the primary school feeding programmes, old age pensions, the home based care programme and food rations to terminally ill patients.

The major food security concerns in Botswana are long term because of high rates of poverty, unemployment and income inequality. The proportion of people living in poverty in 1993/4 was 47 percent of the total population (Botswana Institute for Development Policy Analysis (BIDPA), 1997). The unemployment rate from the 2001 Population and Housing Census Data is 20 percent, much higher than the 15.8 percent figure from the 2000 MIS. Income distribution remains very skewed in Botswana with a Gini Coefficient of 0.54 making it difficult for most households to afford access to food from own sources (Central Statistic Office (CSO), 2000).

6. THE NATURE OF BOTSWANA ECONOMY AND FOOD SECURITY

BIDPA (2001) found that rural households in Botswana derive their livelihood from a multiple sources, and very few are dependent on any one source. Livelihoods are primarily based on a mixture of crop production, livestock production, and remittances from urban areas and urban villages, Government transfers and formal employment. 13.8 percent of the households depend for more than half of their income on formal employment. Another 6.8 percent depend primarily on remittances or Government transfers. In rural Botswana, as few as 2.4 percent of the population can be said to depend on arable agriculture and 2.8 percent on livestock[6]. It is therefore no longer true that either arable agriculture or livestock is the main source of rural livelihoods.

Botswana is characterized by recurring droughts, poor soils and the general application of inappropriate technology in subsistence agriculture that have made it difficult for the country to raise farm output productivity. This, in part, has resulted in the share of agriculture in GDP falling from 31.5 percent in 1975/76 (Ministry of Finance and Development Planning, 1985) to 2.4 percent 2000/01 (Bank of Botswana, 2002). The mining industry, dominated by diamonds that are mined through capital intensive methods, has been the main source of economic growth. However, diamonds account for only 3% of formal employment and have limited linkages with the rest of the economy. Thus, the sector does not generate adequate direct employment that can specifically address both high unemployment and poverty rates. There is a need for more efforts to focus on investing in science and technology development of agriculture in order to increase production and improve productivity that will facilitate the development of linkages with the agribusiness industry. Through this approach, more employment opportunities will be made available for the unemployed and provide them with capability to purchase food.

[6] "Dependent" in this context means deriving more than 50 percent of household income from that activity.

The 2001 Population and Housing Census data revealed that there has been a change in the breakdown of the economically active population (Table 1). This might suggest new livelihood challenges that require changes in the way rural households attain food security. Innovative science and technology adoption in agriculture might be one approach to reduce poverty, unemployment and inequalities if long term food insecurity is to be addressed more aggressively. The population that was based in lands and cattle post economic activities has shrunk from 15 percent in 1991 to 3 percent in 2001. In contrast, the number of people seeking work has increased from 14 percent to 20 percent of the economically active population. This could confirm BIDPA (2001) conclusions that agriculture was no longer the main source of livelihood and people are moving to other sectors to try to attain food security. The number of people who are self-employed increased from 7 percent to 10 percent of the labour force between 1991 and 2001; and the total number of employees rose from 63 percent to 66 percent of this population group in the same period. Most of the rural labour force has either joined the formal employment sector or is in self-employment or actively seeking work. Diversification that is based on adoption of science and technology to improve productivity in cereal crop production, horticulture, poultry, dairy and beef sectors should form the basis of future development. This approach should be supported by a requirement to target application to areas of relevant high potential. This will facilitate the creation of a competitive advantage and help create formal employment opportunities from agriculture based sectors. In this way, macroeconomic policy will have a direct contribution to poverty reduction and hence food security.

Table 1

Breakdown of Economically Active Population
(Census data) in percentages

Activity	1991	2001
Employee	63	66
Self-Employed	7	10
Family Business	2	1
Lands and Cattle Posts	15	3
Seeking Work	14	20
Economically Active	**100**	**100**

Source: CSO 2002

HIV/AIDS has a significant negative impact on agricultural labour as the people directly affected are in the economically active population. For example, in an affected agriculture dependent household, sick adults stop work on the land and family members spend more time caring for the sick adults. With less time on the land, household food deficit from own production tend to rise. Funeral expenses are high and erode the household capital as debt increases (Gillespie and Haddad, 2002). Labour saving technologies are required to bring back to life the already shrinking agricultural sector. Past BIDPA studies have shown that old and less educated people dominate subsistence agriculture. This does not provide an enabling environment for the adoption of appropriate technology solutions that can raise productivity and incomes in this sector in order to address long term food security concerns. Adoption of science and technology requires a better educated working age group, who are also keen to undertake agriculture. But these people are among the most affected groups by the HIV/AIDS scourge.

7. THE ROLE OF MACROECONOMIC POLICY IN FOOD SECURITY

The role of Botswana's macroeconomic policy towards the achievement of food security policy has been aimed at stabilising food supply, enhancing household access to food, and reducing the incidence of poverty (EWTC, 2002; MFDP, 1997; McCalla, 1998). This is demonstrated by the decline in the proportion of people living below the poverty datum line from 59 percent in 1985/86 to 47 percent in 1993/94 (BIDPA, 1997). UNDP (2002) also suggests a further decline of poverty to 36.7 percent in 2001.

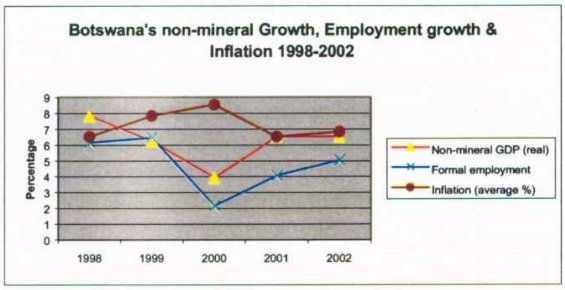
It is generally agreed that household food security can only be achieved if macro-level availability of food is guaranteed, and opportunities to access acceptable food either through own production, purchase or transfers are also available (Rooyen and Sigwele, 1998; McCalla, 1998; Southscan, 2002). Botswana's macroeconomic policy is mainly characterised by a tight monetary policy and an expansionary fiscal policy that supports an extensive welfare programme and empowerment schemes to help with diversification of the economy. This has enabled the country to successfully address transient food security concerns. For instance, no famine has been reported in the last twenty years and total malnutrition of under years children has decreased from 13 percent in 1999 to 9.3 percent in 2001 (Early Warning Technical Committee (EWTC), 2002).

Sen (1999) and Stiglitz (1999) also observed that peace, democracy and transparent participatory processes are critical elements necessary towards the achievement of food security and prevention of famines. This has formed the basis of Botswana's approach, which emphasises a prudent macroeconomic policy.

7.1 Growth and Monetary Policy

Botswana's stable macroeconomic policy over the last ten years has made a significant contribution towards food security. For instance, there was enough foreign exchange to cover 39.5 months of imports by December 2001 (Bank of Botswana, 2002). Average GDP growth rate of 6.9 percent over the last five years was higher than the population growth rate of 2.4 percent (CSO, 2001) during the period 1991 to 2001. An average annual 6.2 percent non-mineral GDP growth rate over the last five years (BIDPA, 2002) compared favourably with overall positive employment growth rates of 4.7 percent in the same period. Inflation also averaged 7.2 percent over the same period (Figure 1).

Figure 1



Source: BIDPA 2002

This represented a significant contribution towards food security as households could plan their food budget in advance with limited price change disruptions. This was helpful in stabilising food access by families over longer periods. The stabilised food flow in households was critical in the year 2000 when 80 percent of total consumption was purchased, and only 8 percent was from own produce (CSO, 2001).

7.2 Population and Incomes

Botswana's population growth rate declined from 3.5 percent per annum in the 1969-81 and 1981-91 periods to 2.4 percent per annum for the period 1991-2001. This trend, and a 6 percent economic growth rate in the last five years, could suggest that the demand for food was not likely to increase at an alarming rate in the short term.

7.3 Fiscal Policy

Botswana's fiscal policy has been characterised by carefully planned and limited spending. In the past, large scale spending on food security safety nets was limited to emergency programmes, such as the Drought Relief Programmes to address transient food insecurity problems that were prominent. Currently, increased demand to care for emerging vulnerable groups, such as the aged and orphans, primarily as a result of HIV/AIDs, require long-term funding for ongoing projects. As a result, this has brought about more spending in food and welfare programmes. To demonstrate this, the food and social welfare programme budget expenditure doubled from P160.3 million in 1997/98 to P320.9 million in 1998/99; and by 1999/2000, spending had rose to P372.2 million. In 2000/01, food and welfare programmes expenditure was 3.7 percent of total government expenditure, far higher than the 2.2 percent expenditure in 1997/98. In order to provide for increased government spending, the government replaced the sales tax regime with the more efficient value added tax (VAT) regime. BIDPA (2003) observed that within the short period that VAT was introduced from 1st July 2002, it raised, on average, more than twice the amount raised by sales tax per month during the same period in 2001.

This revenue collected through VAT is likely to contribute to the increased social welfare budget. Some Districts have alleged that the poor targeting of benefits under these safety nets have led to food surpluses among the poor households. To illustrate this, a hypothetical 7 member household with one destitute old lady, 3 orphaned children, 1 terminally ill patient, and two needy students will be used. This family could be entitled to a minimum P1500[7] worth of food a month. Separating allowances in this family, a destitute old lady is entitled to a destitute food coupon of P105 per month in rural areas and about P150 old age pension monthly and each orphan is entitled to a food basket of P216 a month. A terminally ill patient gets a variable food basket depending on medical assessment and this could exceed P1000 a month. Needy students who are also orphans are entitled to P400.00 a month to purchase uniform, toiletry, shoes, transport to and from school, attendance at day care centres etc. and this allowance may exceed the base of

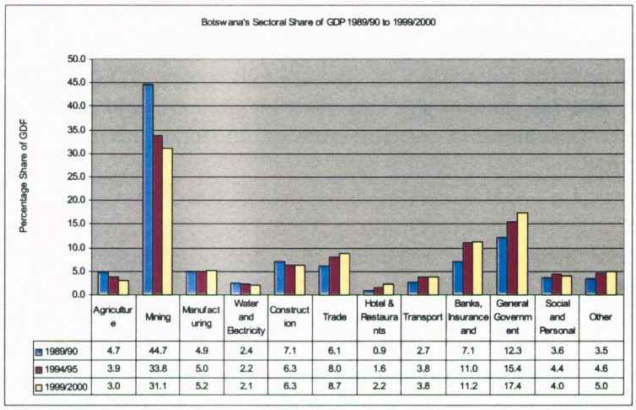
[7] Old woman entitlement = Old age pension + destitute allowance; Three orphaned children entitlement = P216 worth of food each; Two needy students entitlement = P400 for school needs such as uniforms for each student; one terminally ill mother (patient) entitlement = up to P1000 a month government support.

P400 a month depending on the needs assessment at the time. School fees and health services are free.

The major concerns raised about this intervention are its sustainability and the dependency syndrome it is likely to generate among the poor sections of society. In some cases, it is suspected to have brought about bitter emotions and divisions among the otherwise interdependent household economies of poor households. Families who have not lost a member as a result of death are more food insecure and would wish to be bereaved in order to increase their food security status. This change in social attitudes is thought to work against the HIV/AIDS prevention objectives in some cases.

During the 1997-2003 plan period (NDP 8), fiscal policy aimed to facilitate private sector development and ensure improved efficiency[8] in the use of Government resources (Ministry of Finance and Development Planning (MFDP), 1997). During this period, the non-mineral sectors' share of GDP was rising, while the shares of mining and agriculture were declining (Figure 2). This could be the reason for formal employment growth noted above. Formal employment enables households to access cash income that is necessary for food purchases in an environment where food production is not very good. The Citizen Entrepreneurial Development Agency (CEDA) has replaced the Financial Assistance Policy[9] (FAP) and is expected to increase sustainable employment opportunities that will increase more chances of household access to cash incomes.

Figure 2



Source: BIDPA 2002

The progressive tax system implementation ensures that the net cash income for low-income groups is higher than otherwise and facilitates their ability to purchase food. Low incomes up to P25 000 per annum are exempt from income tax. The introduction of the value added tax in 2002 is alleged to have affected the poor most, but this will be ob-

[8] Efficiency achieved through measures that included reduction of taxes to attract investors and introduction of cost recovery measures to save resources.

[9] FAP was the Government incentive scheme up to 2000 aimed at encouraging development in manufacturing, but also covered agriculture outside cattle ranching and dry land farming, small scale mining and service related activities in tourism.

served over time as basic food stuffs, mostly used by low income households, are not covered.

7.4 Food Prices

Food prices are a major factor affecting food security in Botswana. The poor spend between 50 and 80 percent of their income on food (Mellor, 1988). Botswana, which has to import most of the food it consumes, cannot influence food prices through production. Arable agriculture is constrained by low and erratic rainfall, endemic droughts (the last five years were all drought years (EWTC, 2002)), and uncertain and scattered water resources for irrigation (Ministry of Agriculture, 2000). Price stabilization and a stable macroeconomic performance are considered to have contributed significantly to stability in food security. Stability of prices enables households to plan how they will purchase food over a period of time. Price stabilization is encouraged through a tight monetary policy that has kept average annual inflation to one digit between 1997 and 2001 (Bank of Botswana, 2002), and liberalization of the economy that encourages competition among food sellers. This is facilitated by a continued development of good road networks across the country. However, BIDPA (2003) argued that the task of combating inflation is not made easy by the current drought. Nevertheless, the exchange rate movements over much of 2002 had a cushioning effect on the impact of imported inflation in Botswana.

8. CAN AGRICULTURE'S ROLE BE ENHANCED?

Past food self-sufficiency based agricultural policy in Botswana concentrated on input subsidies for both arable and livestock farming through the Arable Lands Development Programme (ALDEP)[10] and FAP, which were not successful in generating the desired employment in agriculture (BIDPA, 2000). In September 1999, agriculture's share of formal sector paid employees was 2.1 percent. Although both ALDEP and FAP were popular and successful distributive mechanisms of farm inputs, no increased productivity in subsistence farming production was observed. Reasons for low productivity included implementation during a prolonged drought period, inadequate monitoring, poor targeting in both programme design and beneficiaries. In addition, the land use and planning structures are inappropriate to facilitate increased productivity in agriculture.

8.1 Land access and land use planning

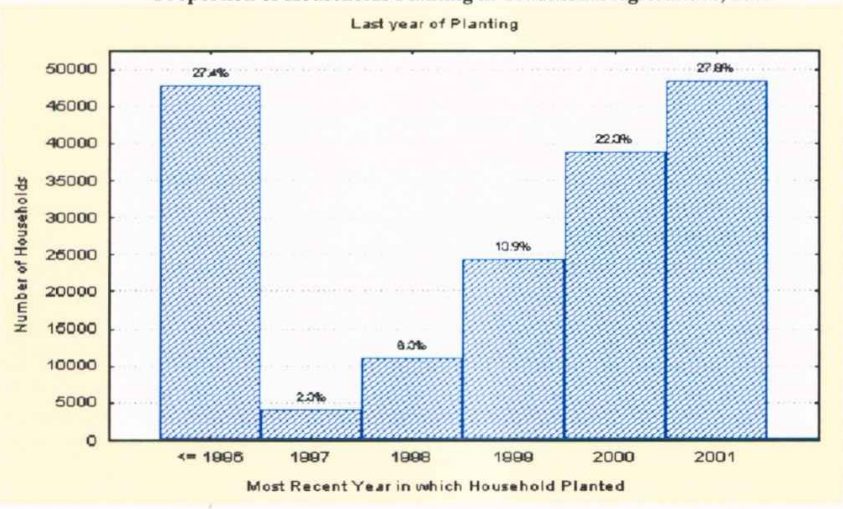
Most arable land in Botswana is held under customary grant that can be transformed into common law. A majority of these land grants are no longer used and are idle, which contribute to low levels of food supply from local sources (Figure 3). BIDPA (2001) found that a growing proportion of arable fields were not ploughed during the 1990s (see Figure 3 for the situation in 2001 when fewer than 30% of households in traditional agriculture were ploughing). In 2001 the under-utilisation of land was alleged to have increased after ARAP stopped (BIDPA, 2001). Although rainfall is considered to be the most important

[10] ALDEP was an input grant scheme targeted to smallholder farmers with less than 40 head of cattle, who ploughed less than 10 hectares of land. Its aim was to increase productivity in subsistence farming.

constraint for not planting in most years in Botswana, lack of willing labour is the second most important constraint. This perception could imply that labour saving technology, such as mechanised farming, would significantly increase the use of land. Potential farmers who may be able invest in new technology may not have access to land in high potential areas, or adequate land to enable economic returns to farming activities. A land tax may need to be introduced, where applicable, to provide incentives for farmers to use the land or lease it out to those who require it. This will address food security by enabling access to land through the market to those who need it and land rents to those who own it to buy food.

Figure 3:

Proportion of Households Planting in Traditional Agriculture, 2001



Source: Rural Development Policy Review, BIDPA, 2001

Despite relative potential for high sorghum yields in Botswana (Faure, 1997), the country has not achieve the minimum expected yield potential even in non-drought years (see Figures 5 and 6).

Figure 5

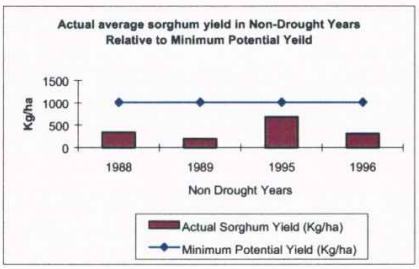
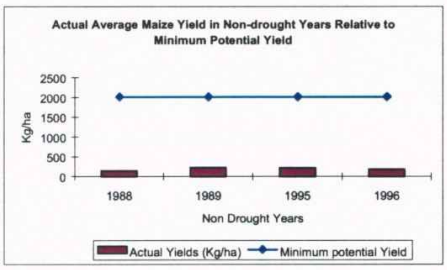


Figure 6



Source: Department of Agricultural Research 2000 and CSO 2000

Most soils in Botswana require timely planting, row planting and the application of phosphate and nitrogen fertiliser to increase yield potential. A good macroeconomic environment can enable the country to import and/or develop technologies, which if adopted could ensure appropriate plant population, and facilitate the mechanisation of field operations like weeding and harvesting. Increased local food supply could enhance strategic concerns of food security, as well as facilitate a faster development of agribusiness industry that can generate wider employment opportunities.

At present, most communal farmers produce enough food for 2-4 months each year at most (BIDPA, 2001). Small land plots contribute to lack of attractiveness to adopt relevant mechanised technologies that can be efficient and effective in large scale production units for sorghum.

Currently, a majority of people engaged in subsistence agriculture in Botswana are without education and are likely to be old (BIDPA, 2001). Young people with higher levels of education were more likely to participate in formal employment. A change in land use and planning, rural infrastructure and targeting of appropriate incentives is likely to induce increased production and returns to cereal crop sector. The local demand for sorghum has increased significantly in recent years relative to other crops like maize. The main reason is attributed to improvements in science and technology that led to value adding activities, such as grain milling.

8.2 Poultry Development

Poultry farming has a significant potential in Botswana (Malatsi and Moncho, 2000; Tahal Consulting Engineers, 2000; etc.). Since the introduction of the Ministry of Agriculture's Poultry Development Project in 1975 and the adoption of modern technology, the chicken population increased from 833 000 in 1980 to 21.5 million broilers and 300 000 layers in the year 2000 (Department of Animal Health and Production, 2001). In the

process, this sector created jobs for 4000 people, the majority of whom were women, by the year 2000. 73 percent of the jobs in this sector were in the small-scale sector that is spread across the country, while the rest was concentrated in the five major chicken producing companies.

Given the enormous growth experienced in this sector, more efforts should be made towards further development of this sector. Botswana imported 5.3 million live chickens valued at P12 million in 1998 against exports of 12 420 poultry valued at P1.135million. If Botswana can increase the output quality and production in this sector, then she stands a chance to benefit from balance of payments gains from reduction in imports.

The development of the poultry production industry should be linked to the development of backward and forward linkages as well. This requires specific attention to the development of poultry input supply industry of feeds, medicines and vaccines, etc. and forward linkages, such as poultry abattoirs, processing and other value adding activities in the poultry industry. In addition, infrastructure, such as water provision, should be incorporated in overall policy and marketing. A marketing outlet such as the Botswana Meat Commission might be an option. As evidenced from the amount of jobs already created, this sector has the potential to employ many more people, especially women, and address both unemployment problems as well as nutrition concerns, because poultry is mainly white meat that yields health benefits.

8.3 Dairy Production

Milk and milk products have contributed to household food security in rural areas, both as an income source and a main food source for a very long time – *kgomo e jewa e tshela.* The demand for milk remains high as it is used everyday in households as a tea complement and for, cereal consumption, as well as in schools, hospitals and the hotel and hospitality industry. In 1997, the country imported 90.4 percent of its liquid milk requirements (Ministry of Agriculture, 2000). Despite some dairy farming activities in the country, there is limited capacity to meet the demand. For instance, in Selibe-Phikwe, Satmos Dairy produces 1200 litres a day of competitive milk products against a daily demand of about 1000 litres of milk in the town's households only. Additional demand in government institutions and hospitals could imply more demand for milk.

Although dairy cow breeds of Friesian, Jersey and Brown-Swiss have adapted relatively well in the country's environment, production costs for most dairy projects in country are likely to remain high for some time because of high input costs and transport cost between the farm gate and the source of inputs. In addition, dairy farming in the country is a new concept implying that the fixed costs are still high compared to South African and Zimbabwean competitors. Dairy breeds are expensive and are imported from outside the country.

Whereas, Botswana is currently not competitive in the dairy sector, the potential is very high. There is an urgent need for government to consider a more proactive approach towards dairy farming development particularly on the basis of infant industry support. The

WTO Agreement on Agriculture for Botswana is very flexible and would not object to this. This dairy sector is critical for strategic food security concerns that include availability and nutrition requirements at all times. For instance, Botswana experienced a milk dry spell in 2001 when milk imports were restricted to prevent spread of disease outbreaks that were experienced in South Africa. The industry has a lot of potential in forward linkages that can generate the much need jobs to address unemployment, income inequality and poverty. Government can also incorporate the borehole drilling and or water supply assistance component to the diary sector development for fodder irrigation projects that will contribute towards long-term reduction of input costs to ensure the industry becomes sustainable and competitive.

9. CONCLUSIONS

The major food security concerns in Botswana are long term because of high rates of poverty, unemployment and income inequality. Good macroeconomic management has enabled Botswana to:

i) Have adequate foreign exchange to cover 39.5 months of imports. This means that in terms of national food availability, the country is food secure provided that there are no impediments to trade and outside sources have adequate supplies to sell.
ii) Increase spending on safety nets that can enable the vulnerable groups who need assistance to access food.
iii) Spend on the diversification process and empowerment schemes. Growth of the non-mining industry contributed to positive employment growth that opened opportunities for individuals to earn income necessary for food purchases.
iv) Maintain low levels of inflation in the country that that facilitated poor families' ability to plan and maintain continuous access to food over long periods.

This could imply that at present, the macroeconomic policy is adequately covering the country's immediate food security issues in terms of availability and access. Short-term food security concerns are also adequately covered by an extensive welfare system that may be unsustainable in the long term. There is an urgent need for the government to design efficient targeting methods that reduce wastes avoids a development of a dependency syndrome.

Subsistence agriculture is no longer the mainstay of rural livelihoods. More and more people are leaving the land to seek employment elsewhere. HIV/AIDS has had a significant negative impact on agricultural labour as the people directly affected are in the economically active population.

There is a need to re-examine the potential food security importance of subsistence farming in Botswana. In some areas, this might be an important contributor to food security, while in others, the potential is not there. This requires that other approaches, particularly large scale cereal production based on mechanised farming should be reconsidered. The importance of increased production in Botswana where relevant is about creation of farm employment near the areas of high population concentration and inputs for the value adding activities such as sorghum milling. The poor may use these opportunities to earn incomes and improve their food security situation.

A change in the structure of land use and management is necessary to facilitate the changes in agricultural activities. This could become an incentive to increase production and productivity in areas that have the highest potential. People holding land with the necessary potential to increase production and are leaving it idle, may be taxed to encourage better use of land. In addition, government should increase its focus towards infrastructure development, including the need to assist farmers to access water in potential areas. This is likely to trigger the necessary conducive environment for local agricultural trade that could lead to competitive international agricultural trade.

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