

An Analysis of the Role of the Agriculture Sector : Case of Zimbabwe

Mufaro Andrew Matandare

Faculty of Commerce, BA ISAGO University, Gaborone, Botswana, P. Bag 149, Kgale Hill Postnet, Gaborone, Botswana

ABSTRACT

The aim of this paper was to analyze the role of the agriculture sector in Zimbabwe. Hence, the types of agricultural products, the different classes of farmers and agricultural regions, the institutions supporting the agricultural sector, challenges faced by the agriculture sector and most importantly the contribution of agriculture to the economy of Zimbabwe were examined. It was found that agriculture in Zimbabwe mainly contributes through employment creation, contribution to GDP, food security, provision of foreign currency and supply of raw materials to other industries. It was found that agriculture used to be the mainstay of Zimbabwean economy more especially in the 1980s and 1990s. However, the trend is reversed in the recent years with the service sector taking center stage. Droughts, climatic change, infrastructural challenges, lack of access to finance, poor farming methods and relying on rain lead to extreme reduction in the Zimbabwean agricultural output to the extent that the country is now a food importer since it can no longer feed itself. The paper recommends that more radical changes in the agricultural sector are needed which includes additional adaptation measures to reduce adverse effects of climate change, huge cash injections into the agriculture sector and improvement of agro related infrastructure as well as education and extension services. The government of Zimbabwe should also direct efforts towards irrigation.

Keywords : Agriculture, Farming, GDP, Economic growth, Zimbabwe

I. INTRODUCTION

Economic growth and development is every developing country's number one goal priority. Faced with scarce resources especially capital, both human and physical, traditional agriculture becomes dominant and thus agriculture is playing a significant role in the development process of developing nations, (Mackie, 1964). Zimbabwe offers increasingly trade and investment opportunities in both productive activities and services, particularly in hotels and restaurants, transport and communication, manufacturing and tourism. These sectors over the last few years have exhibited phenomenal growth. Nevertheless the agriculture sector still plays an important role in the growth of the Zimbabwean economy.

Agriculture in Zimbabwe is also the largest employment sector, occupying over seventy percent of the labour force, MAMID (2014). Poverty in Zimbabwe is inextricably tied up with agricultural sector performance, for two main reasons. First, the agriculture

sector is the backbone of Zimbabwe's economy and will continue to be so for the foreseeable future. It provides livelihoods for the majority of the population. In addition, thirty percent of export earnings originate from agriculture sector and forestry as well as sixty percent of the raw materials, MoED (2004). It is thus a key sector in determining overall economic performance.

Secondly, the dualism of the sector has an important influence on the distribution of income and of the gains from economic growth. In broad terms, agriculture in Zimbabwe is dominated by two different systems of land tenure. On the one hand there is a commercial sector, dominated by medium-scale commercial farms. Here, land is privately owned, production is for the market and farms are run as commercial profit-seeking enterprises. On the other hand, there are communal areas, in which land is collectively owned and much of the production is family-based and subsistence oriented. This dualism not only affects income distribution within the sector but also has important consequences for the rest of the economy, particularly through its impact on the labour

market, (Davies, et al. 2001). These two factors mean that any poverty-reducing growth strategies in Zimbabwe must necessarily, but not exclusively, focus on agricultural expenditure.

Zimbabwe's exports are predominantly agriculture commodities, minerals and low value added goods. Opportunities to process these commodities before export are unlimited, (MAMID, 2013). Very strong backward and forward linkages exist among the agricultural, manufacturing, mining and commercial sectors. Due to these intricate linkages economic growth patterns during the last few years have been significantly influenced by droughts. Whenever the agriculture season is good, the performance of other sectors is correspondingly good and vice versa. During the last decade the whole Southern African region has been subjected to recurring droughts and this negatively affected the performance of the affected countries.

Most growth theories in the early nineteenth century propounded that economic growth requires more rapid growth in the industrial and service sectors than in the agriculture sector. National development plans and investments often focused on non-agriculture sectors. Government plans in the 1950s often assumed that increases in agricultural production would be forthcoming without much government policy attention and without much additional investment. The growth of the agricultural sector was assumed to be of low priority and hence could be neglected in an ambitious development program. Such industry first strategies, however often, led to serious food shortages, as, for example, in the USSR in the 1920s and in India in the 1960s, with resulting slower national growth, (Fulginitie and Perrin, 1993).

The essential interrelations between the agricultural and other sectors of the economy were not then understood. These interrelations were illuminated by Johnston and Mellor (1961), Jorgenson (1961), Fei and Ranis (1961) and Mellor (1984), who demonstrated the crucial importance of agricultural growth for rapid national economic development. Studies also showed that these linkages between the sectors increase with economic growth. Not only are increased flows of products from agriculture necessary to support growth in other sectors,

but also the agriculture sector in turn requires resources from other sectors for increased growth.

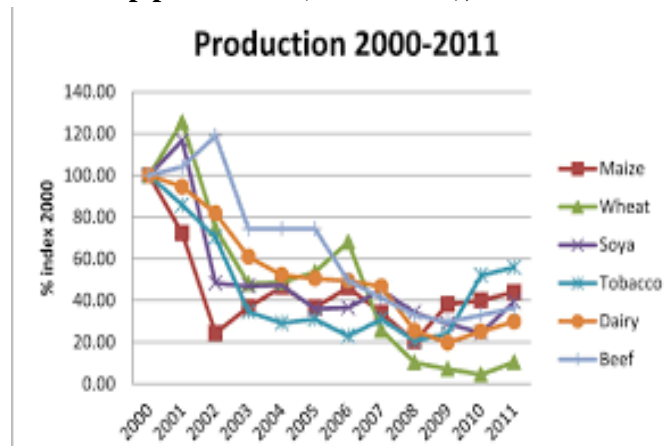
Thus agricultural sector's role in economic development is a very important one. In slow growing income countries, the lack of a vigorous agricultural sector appears to be a drag on total economic development, (Hayami and Ruttan, 1985). In the rapid growing developing countries, its contribution becomes dominant and perhaps the prime force in total economic growth by providing the necessary forward momentum needed to keep the growth process going.

Clearly and from previous studies, agriculture is the engine of the Zimbabwean economy, (Davis, 2001; Robilliard, et al. 2002). Because of strong backward and forward linkages that exist between agriculture and other productive activities and commercial services, the performance of the entire economy is heavily influenced by how the agriculture sector is faring. As a result, any positive developments in the agriculture sector filter through the rest of the economy. Backward and forward linkages between agriculture and manufacturing are particularly strong. The latter processes many agricultural outputs, while also supplying agriculture with many of its input requirements. Agriculture therefore plays a pivotal role in determining the wellbeing of the nation, (Ram, 1986). Government takes cognizance of the importance of agriculture and expenditure has been used for extension services and training programs aimed at imparting technical skills and good farming methods and practices to farmers. Many irrigation schemes have been established and dams constructed. These measures have boosted agricultural output and have introduced cultivation and other agricultural activities to areas otherwise considered to be unsuitable, thus improving the welfare of the beneficiary communities.

In the 1990s, Zimbabwe was a net exporter of maize before the fast-track land reform program in which thousands of people were resettled on farms formerly owned by about 4 000 white commercial farmers. Since then, Zimbabwe has failed to meet its food requirements, (Moyo, 2011). Although the agrarian reform program has enabled the majority of people to acquire land and contribute meaningfully to commercial agriculture and thousands of Zimbabweans who were hitherto confined

to peasant agriculture are producing commercial export crops such as tobacco, cotton, perishable vegetables, cut flowers, oil seeds and wheat, agriculture production has significantly declined. This is shown on figure 1:

Figure 1
Crop production (2000 – 2011), Zimbabwe



Source: FAO, 2012

From 2010 the government has come up with various policies in a bid to support the agricultural sector but declining agro-output remains a challenge for a country attempting to turn around its agricultural fortunes and once again become the bread basket of Africa.

II. Zimbabwe natural regions and agriculture

Zimbabwe is divided into five natural regions on the basis of soil type, rainfall and other climatic factors. The first three regions are suitable for intensive crop and livestock production whereas the remaining two offer limited scope for agricultural development, (CSO, 2000)

Region 1: Specialized and diversified farming

Rain: Above 1 050mm per annum and normally receives some precipitation in all months of the year.

Production: Afforestation and production of fruit and intensive livestock. In frost free areas - tea, coffee, macadamia nuts and other plantation crops are grown.

Area: 7 000 sq. km (less than 2% of the total of Zimbabwe).

Region 2: Intensive farming

Rain: 750-1 000mm per annum. In parts of the region crop yields in certain areas will

be affected by relatively short rainy seasons or dry spells during the season.

Production: Crops and intensive livestock production.

Area: 58 600 sq. km (15% of the total area of Zimbabwe).

Farming: Almost 74% is large scale commercial land, 22% is communal land and 4% is small scale commercial land.

Region 3: Semi-intensive farming

Rain: 650-800mm per annum. Fairly severe mid-season dry spells.

Production: Livestock production together with fodder crops and cash crops. Marginal production of maize, tobacco and cotton is practiced.

Area: 72 900 sq. km (19% of the total area of Zimbabwe).

Farming: Approximately 49% is large scale commercial land and 8% is small scale commercial land.

Region 4: Semi-extensive farming

Rain: 450-650mm per annum. Periodic seasonal drought and severe dry spells during the rainy season.

Production: Livestock production, drought-resistant crops.

Area: 147 800 sq. km (38% of the total area of Zimbabwe).

Farming: 62% is communal land, 34% is large scale commercial land and 4% is small scale.

Region 5: Extensive farming

Area: Too low and erratic for production of even drought resistant fodder and grain crops.

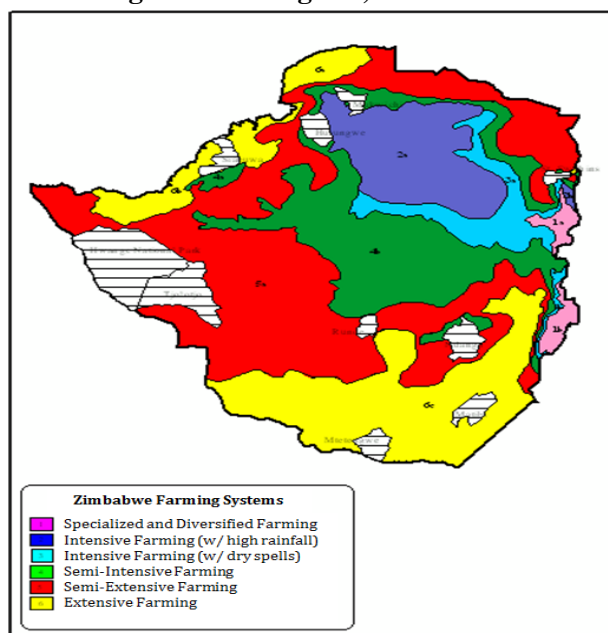
Production: Extensive cattle ranching or game ranching.

Area: 104 400 sq. km (27% of the total area of Zimbabwe).

Farming: Approximately 45% is communal land, 35% large scale commercial land and less than 20% national parks.

The number and area of large-scale commercial farms has been decreasing from 1980 to 2000 mainly due to the government's land redistribution program. After the fast track land reform in 2000 (A1 and A2 farmers) most commercial farms became medium-scale. The regions are shown on the map below:

Figure 2
Agricultural regions, Zimbabwe



Source: www.exploringafricamatrix.msu.edu

III. Ministries and institutions within the agriculture sector

Ministry of Agriculture, Mechanization and Irrigation Development (MAMID) is comprised of nine departments, six of which are technical and play a critical role in promoting and managing agricultural production in Zimbabwe: Agricultural, Technical and Extension Services (AGRITEX); Agricultural Economics and Markets; Research and Specialist Services (DR&SS); Agricultural Education and Farmer Training; Agricultural Engineering and Mechanization; Irrigation (DoIrr); and Livestock and Veterinary Services (DLVS). Numerous divisions, units, and sections fall under these departments. In addition, eleven parastatals and state enterprises are directly under MAMID oversight, all playing a pivotal role in assisting this ministry. The parastatals relevant to maize production are the Agricultural Development Bank

(Agribank), the Grain Marketing Board, the Agricultural and Rural Development Authority (ARDA), the Agricultural Research Council (ARC), the African Centre for Fertilizer Development (ACFD), the Farmers Development Trust (FDT), and the Agricultural Marketing Authority (AMA), (MAMID, 2014).

MAMID also works in collaboration with other government ministries and departments as well as stakeholders in the agricultural sector on all matters related to agriculture, food, and nutrition security. These stakeholders include actors in the private sector, farmers' organizations and other non-governmental organizations (NGOs), and developmental partners, including among others, the United Nations Food and Agriculture Organization (FAO), the U.K. Department for International Development (DFID), and the European Union (EU). Most of these institutions have structures at the national, provincial, district, and ward levels with some going down to the village and cell levels in order to assist the agricultural sector, (MAMID, 2014)

Agricultural bank of Zimbabwe Limited (Agribank) is a major purveyor of agricultural finance. Its main objectives are to promote agricultural production by providing credit for the purchase of agricultural inputs and for the development of agricultural marketing, (Mushamba, 2002).

IV. The role of agriculture in economic growth of Zimbabwe

Keynesian theory testifies that sectorial growth generates more income growth through backward and forward linkages and the effect of the multiplier in the short run. Growth of the agricultural sector supports the growth of the other sectors in the economy. Agriculture plays vital roles in the economy which include employment creation, contribution to GDP, source of food supply, raising more foreign exchange which can be used to purchase manufactured goods, capital goods and technology, raw materials for the agro-processing industries among other many roles, (Colman and Young, 1989).

a. Employment opportunities

Agriculture provides employment for rural people and in the agro based industries. Agriculture progressing also

permits the shift of manpower from agricultural to non-agricultural sector. In Zimbabwe agriculture sector provides employment to close to 70 percent of the population, (MAMID, 2013). Employment in the agricultural sector has been steadily increasing over the years in Zimbabwe. This is shown on the figure below:

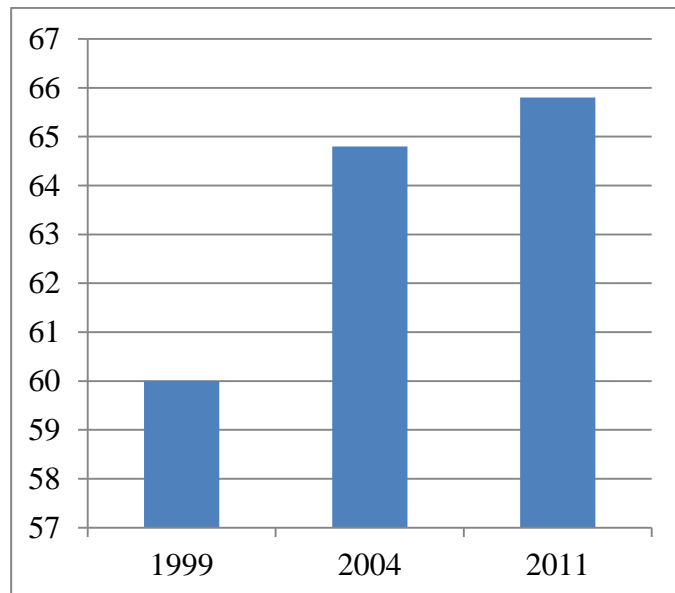


Figure 3. Employment in agriculture (% of total employment), Zimbabwe

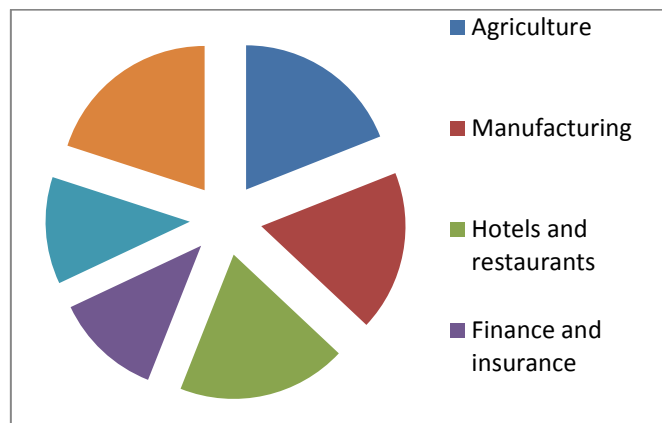
Source: WDI, (2017)

Although the agricultural sector has been severely affected by droughts it still remains one of the top employing sector in the country. In 1990, employment in agriculture stood at 60% and this rose to 65.8% in 2011 and currently is close to 70%.

b. Contribution to national income

Agriculture prosperity contributes immensely in fostering development. Leading industrialized countries of today were once predominantly agricultural. Currently in Zimbabwe, the services sector is increasingly becoming the biggest contributor to the country's Gross Domestic Product (GDP) ahead of critical sectors such as agriculture and mining.

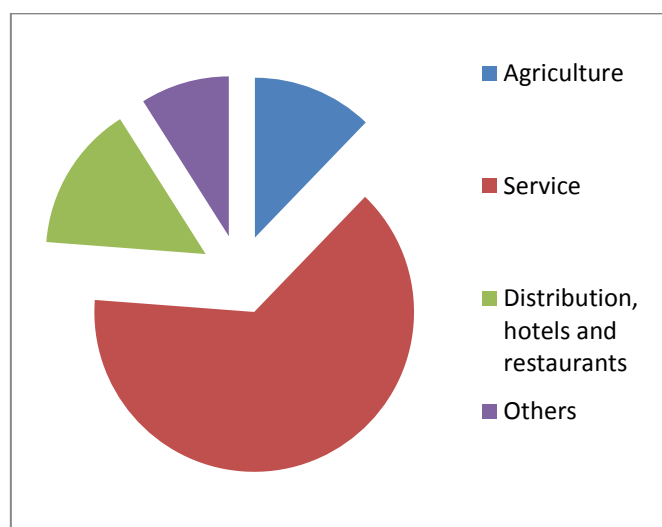
In 1999 agriculture was one of the major contributors to GDP in Zimbabwe contributing about 19%. Other sectors also contributed significantly to GDP as shown in the figure below:



Source: World Bank (2000)

Figure 4. Sector contributions to GDP in 1999, Zimbabwe

However due to the economic turmoil, land reform and droughts experienced by Zimbabwe, in 2016 the services sector accounts for about 64% of Zimbabwe's GDP and is increasingly becoming an important driver for growth and employment ahead of agriculture, manufacturing and other sectors. Distribution, hotels and restaurants account for 14.8% of GDP while agriculture accounted for 12.2%. This is shown on the figure below:



Source: World Bank (2017)

Figure 5. Sector contribution to GDP in 2016, Zimbabwe

In 1980, agricultural sector contributed 14% to the GDP, grew to 20.4% in 2001, but fell to 12.5% in 2015 and 12.2% in 2016.

c. Source of food supply

Agriculture is the basic source of food supply of all the countries in the world. Agriculture is the mainstream and back-borne of the Zimbabwean economy. Over three quarters of the Zimbabwean population derive its

livelihood from agriculture and related activities. Thus the agriculture sector is the mainstay of the Zimbabwean economy and anchors the country's stabilization programs and food security.

MAMID, therefore, always call upon the relevant authorities to seriously look at segmenting the country's crops into strategic clusters, focusing on food security, foreign exchange generation, as well as employment creation, and then sets specific targets that farmers should produce. It is also imperative that the coming years should be focused on enhancing agricultural productivity through specific interventions to deal with ensuring full take-up of allocated land, especially the A2 areas and full accounting and utilization of machinery on the ground, as well as increasing investments in boosting capacity in the sector, (MAMID, 2014). The targeted strategic crops geared towards food security and generation of foreign currency is shown in the table below:

Table 1. Targeted strategic crops, Zimbabwe

Food security	Foreign exchange
Maize	Tobacco
Wheat	Cotton
Potatoes	Fruits and vegetables
Soya	Bananas
Fruits and vegetables	Ground nuts
Bananas	Paprika
Groundnuts	Sugar cane
Sorghum / Millet	Citrus
Barley	Tea /Coffee
Sugar cane	Beef / Chicken
Citrus	Flowers
Tea / Coffee	Potatoes
Beef / Chicken	

Source - Monetary Policy Statement for the fourth quarter 2004 – Roadmap for 2005

In 2000 the government of Zimbabwe embarked on a land reform program and has enabled the majority of people to acquire land and sustain their food needs. This has enabled the general Zimbabwean population to have food security, (Anseeuw, 2012).

d. Foreign currency

Surplus from the agriculture sector can be exported to source for foreign currency. Tobacco has been the top foreign currency earner in Zimbabwe ahead of gems, precious metals as well as ores, slag and ash. According to a report by IMF (2017), in 2016, among the top ten exported products to world by Zimbabwe along with trade value are shown in the table below:

Table 2. Top agro-products foreign currency earners in 2016

Product	Trade value (US\$ millions)
Tobacco, partly or wholly stemmed/stripped	927
Sugar, sugar confectionery	58.9
Raw hides, skins not furskins, leather	29
Cotton	24.9
Wood	23.6

As shown above, the agriculture sector is one of the most important revenue earners for the country. Although agriculture on average encompasses no more than twenty percent of Gross Domestic Product, it is responsible for thirty percent of total export earnings, (IMF, 2017).

e. Raw materials

Supply of raw materials to the agro-based industries eg flour mills, rice shellers, oil mills, bread, meat, milk produce, sugar factories, wineries, textile mills etc is supported by the agriculture sector. In Zimbabwe, the agricultural sector contributes to other industries by supplying 60% of the raw materials required by the industrial sector, (MAMID, 2013). The agriculture is also heavily tied to other industries (goods and services), such as equipment manufacturers, feed suppliers, transportation, food retailers, restaurants and other sectors in the economy, (Anseeuw, 2012). In effect, a healthy agricultural sector is vital to the economy as a whole. Any significant problem in the agriculture sector could result in a concurrent negative impact on the industries that rely on agricultural sector for sources of raw material, (Mushamba, 2002).

V. Challenges faced by the agriculture sector in Zimbabwe

i. Climate change

Climate change contributes to Zimbabwe's economic challenges due to the increased frequency of droughts, floods and violent storms which have resulted in huge financial losses in agriculture. Losses faced by the vulnerable communities are overwhelming; these range from loss of livelihood, food insecurity, and hardship due to extreme environmental degradation and weather events, resulting in migration and displacement as well as other potentially devastating socio-economic consequences, (Binswanger-Mkhize and Moyo, 2012).

ii. Limited access to finance

Large gaps remain in supporting financial needs of smallholder agriculture farmers across Africa. 42

African nations in 2014; only 29% of adults in rural communities has bank account, with a significant difference between men (39%) and women (30%). Rural households are also excluded from formal credit sources with only 6% borrowing from a formal institution. Most rural people rely on family and friends or informal lenders, (USAID, 2015). In Zimbabwe, smallholder farmers are geographically dispersed, illiterate and resource poor, all of which worsens lending risks and costs. In addition, unpredictable weather patterns, irregular market access, long crop cycles and high costs of inputs make it even less attractive to financial institutions. Basically Zimbabwean rural farmers are poor and have low income level. Agricultural credit facilities are not so common in Zimbabwe and notably is that credit that can facilitate agriculture is not available easily, (Mushamba, 2002).

iii. Infrastructure challenges

In Zimbabwe, there is inadequate investment in agriculture infrastructure construction, few job opportunities for farmers, out dated rural social administration and public services in rural communities are still obstructing the development of rural and agricultural economy. Moreover, rural infrastructure like roads, health facilities, storage facilities, electricity, transport, education, and sanitation are insufficient to meet the requirement of agriculture growth, (USAID, 2015).

iv. Poor farming methods

Zimbabwean farmers stick to traditional, old and conventional practices as well as out dated implements for production in agriculture. Orthodox and Old methods of production cannot increase the production according to international levels. Resources are not utilized in right manner as cultivable area under double or multiple cropping is not sufficient in Zimbabwe. Farmers are not following the general principles of crop rotation; the constant cultivation of one or two crops exhausts the fertility status of soil, (Kapuya, 2010). The average crop yield in Zimbabwe has been declining since 2000. For instance, from 2000 to date, production of maize declined 79%, soya beans 66%, wheat 90%, citrus 50%, dairy 59%, fresh produce 61%, beef 67%, tea 40%, coffee 92%, (USAID, 2015).

v. Too much relying on rain

Rain dependency creates a huge challenge in Zimbabwe. The following concurrent drought seasons were accompanied with decreases in crop production: 1982/83, 1986/87, 1992/93, 1995/96, 2002/03, 2004/05, 2007/08, 2012/13, and 2015/16, (MAMID, 2016). Both variability and change in rainfall patterns affect stability of food supplies, food production availability, food

utilization, food prices and general access to food in the country. If rainfall fails then the Zimbabwean economy also fails to improve as agriculture constitute 12.2% of GDP.

VI. CONCLUSION AND RECOMMENDATIONS

Agriculture can play a pivotal role in improving the country's trade performance because there is substantial capacity to increase the volume of agricultural exports (beef, coffee, tea, paprika, sugar, cotton, tobacco), at the same time reducing the food import bill by also expanding the output of commodities such as maize, wheat, oilseeds, dairy and poultry. As shown by the discussion above the agriculture sector in Zimbabwe plays a very important role and contributes significantly to the growth and development of the Zimbabwean economy. Zimbabwe is endowed with abundant agricultural resources which provide vast opportunities for investment in the agriculture sector. Being an agrarian country, the agricultural sector of Zimbabwe's economy provides many opportunities to enhance economic growth. Hence, it is not until sufficient attention and corrective measures are taken by both private and public sector that Zimbabwe's agricultural output may increase.

Although agricultural production is facing many challenges and has been declining since year 2000, solutions are possible within the framework of the monitoring and analysis of the challenges themselves, and in the context of sustainable agricultural practices. The following recommendations are thus put forward:

- Whilst a wide selection of adaptation possibilities is available to deal with climate change more extensive adaptation than is currently occurring is needed to reduce vulnerability to climate change. This includes participation by government, private sector and communities
- The key to unlock the potential of the country's agricultural sector is huge cash injection to rejuvenate sagging fortunes of the once buoyant agricultural sector and mitigate the effects of perennial hunger. The government should provide low-interest loan facilities to farmers, provision of inputs, guaranteed purchase of agricultural products, payments of government grants and subsidies to farmers that would enhance farmers to increase production.
- The country is in need for serious investment in agricultural infrastructure. Machines produced

locally and those imported from abroad could be transformed onto added value for the GDP, or capital accumulation. Governmental investment plays a significant role in spending on the infrastructure, operation, and maintenance of infrastructure such as roads, dams, storage facilities and other agro-equipment.

- Another recommendation to deal with poor farming methods lies in education and extension services. This should include increasing farmers' skills and knowledge regarding advanced farming techniques in order to improve output. Research can also be geared towards increasing the farmers productivity either through improving the genetic material (stress tolerant or higher yielding varieties) or production systems (labour and land productivity, plant nutrients, agronomy, mechanisation).
- Zimbabwe has perpetual problems with drought and has to develop irrigation facilities to ease the challenge of food shortages. Drip irrigation or any other form of irrigation system could help the agriculture sector improve output and produce quality yields. The government should prioritize water control in rural infrastructure construction, including supporting water conservancy projects on small farmland, encouraging water-saving irrigation and restoring crumbling reservoirs.

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