



USAID STRATEGIC ECONOMIC RESEARCH AND ANALYSIS – ZIMBABWE (SERA) PROGRAM

MAIZE MARKETING AND PRICING IN ZIMBABWE

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List of Aabbreviations

AMA:	Agricultural Marketing Authority
CAADP:	Comprehensive African Agricultural Development Programme
CBZ:	Commercial Bank of Zimbabwe
CCZ:	Consumer Council of Zimbabwe
CCI:	Consumer Price Index
ESAP:	Economic Structural Adjustment Programme
GDP:	Gross Domestic Product
GMAZ:	Grain Millers Association of Zimbabwe
GMB:	Grain Marketing Board
GTAZ:	Grain Traders Association of Zimbabwe
MAMID:	Ministry of Agriculture, Mechanization and Irrigation Development
MT:	Metric Tonne
OR:	Old Resettlement
SGR:	Strategic Grain Reserve
SI:	Statutory Instrument
USD:	United States Dollars
ZIMACE:	Zimbabwe Agricultural Commodity Exchange
Zim ACP:	Zimbabwe Agricultural Competitiveness Programme
Zim Asset:	Zimbabwe Agenda for Socio-Economic Transformation
ZEPARU:	Zimbabwe Economic Policy and Research Unit
Zim VAC:	Zimbabwe Vulnerability Assessment Committee
ZCFU:	Zimbabwe Commercial Farmers Union
ZCTU:	Zimbabwe Congress of Trade Unions
ZFU:	Zimbabwe Farmers Union
ZIMSTATS:	Zimbabwe National Statistical Agency

EXECUTIVE SUMMARY

The Agriculture sector is central to the Zimbabwean economy with bright prospects for the country to register a higher path of economic growth through agriculture-led development. There is need for an efficient agricultural marketing system to ensure a competitive agricultural sector. Maize production is strategic to food and national security and government intervention in the sector is justified for the attainment of these social, economic and political and objectives. However, despite long standing efforts by government to induce progress in the maize sector through market and price interventions such as input subsidies, price controls, trade restrictions and stock holding, maize production has been stagnating, with Zimbabwe slipping into being a net importer of the commodity. The country's policy efforts in the past have been inconsistent and *ad hoc in* nature, pointing to a lack of strategic thrust to guide the sector's marketing and pricing policy regime. These developments result in an unstable as well as less conducive business-operating environment under which planning, and eventual medium- to long-term private sector investment, become constrained.

The country needs to draw lessons from the past and adopt stable policy and institutional interventions to ensure that the intended benefits of food security and economic growth through agriculture can be realized. Input subsidies have failed to deliver expected results due to administrative failures such as (1) delayed disbursement (2) inadequate packages (3) poor targeting and (4) corruption. Availing price incentives to non-productive farmers, coupled with the challenge of delayed payment of proceeds from sales through the Grain Marketing Board, imply that no meaningful income gains accrue to farmers. The policy menu of input subsidies and price support are inadequate to unlock productivity gains among Zimbabwe's newly resettled farmers who are currently battling with a multiplicity of supply side factors. Some of these supply side bottlenecks include climate change induced weather pattern variability and drought risks thereof, weak human capacity (that limit utilisation of good agronomic practices) in commercial farming, limited access to working and investment capital, , lack of agro-ecological specialization, institutional failures (corruption, inadequate extension and research, among others), administrative and governance challenges in land management. With limited productivity and limited supply of maize in the local market plus import restrictions, maize consumption, maize meal prices, consumer prices, inflation and wage pressures have been adversely affected.

There is a generally observed conflict of interests in policies aimed at improving food security but at the same time paired with producer price support to improve the incomes of farmers. Higher prices for producers frequently lead to higher consumer prices, which reduces real incomes and is in conflict with the food security objective because it ends up harming maize consumers, most of whom are smallholder farmers themselves. A

higher price for maize, a raw material in the food processing industry also induces higher production costs, and increases product prices that further suppress effective demand, particularly for urban workers. Thus, the combined effects of poor local supply, price hikes and import restrictions have resulted in industry contraction and real wage declines that work collectively to suppress maize consumption by both farmer and urban workers. Poverty for the rural population will remain high unless concerted efforts are put in place to ensure productive livelihoods for those dependent on agriculture. Farmer incomes remain low due to low productivity. High unemployment with contraction of industries following increases in maize prices and import bans result in low incomes, and may lead to urban to rural migration which will create further pressure on natural resources in the rural areas

The SGR programme and input subsidies have meant a huge expenditure by government, forcing it to live beyond its means. Government borrowing from the open market has worsened the liquidity situation, increased interest rates, decreased investments, and ultimately weakened economic activity. Spending on public stocks and input subsidies also implies opportunity costs, *vis-à-vis* other alternative investments. The crowding out of the private sector in grain and inputs trading activities has further limited the fiscal space and general employment, as well as incomes for the population. Expenditure on SGR implies high consumption expenditure at the expense of investment expenditure. Poorly packaged input subsidies for smallholder farmers have yielded very little productivity growth due to the lack of better targeting methods, which unless complemented with other measures cannot yield positive productivity gains.

The Study recommends strategic planning for maize marketing and pricing policies. Medium- to- long-term stable policy and institutional interventions are required in order to ensure that the intended benefits of food security and economic growth through agriculture can be realized. Some of the major recommendations of the Study are:

- **Price incentives** for non-productive farmers are counter-productive as they induce inefficiencies. Since they have a limited impact, efforts should be directed towards a holistic approach towards supply oriented factors in maize production through climate change adaptation measures, human capital development, agro-ecological specialization, conducive land administration and governance, institutional capacity and technology development, as well as a proper targeting and administration of input subsidies.
- **Two-tier marketing system that provides for the setting of floor and ceiling prices:** In order to balance the need to protect smallholder farmers and at the same time promote industry viability, a two-tier marketing channel similar to the

one that was in place during 1996 that provided GMB the latitude to set floor and ceiling prices, should be considered. The GMB would then procure grain at the floor price for the SGR and cereal price stabilization purposes, whilst the rest of the market could procure within the floor price and the ceiling. Another option would be based on the understanding that we have liberalized our domestic markets and exchange control regimes, thus creating a basis for an open grain market system, a regime which would allow private millers, traders and farmers to trade freely on the open market.

- **Policy on Genetically Modified Organisms (GMO) technology:** On technology, the GMO inconsistency implies promoting GMO friendly industries outside the country at the expense of local industries. It is thus recommended that the country revisit its position on GMOs in light of increasing trade with the global economy.
- **SGR Management Policy:** The SGR policy will need revisiting to streamline the existing levels of stock holding in line with what is attainable, with sound inventory management practices, using experiences from neighboring countries such as Zambia and Malawi.
- **GMB Reservoirs (Silos) Infrastructure should be commercialized:** The current initiative of leasing excess infrastructure to private players should be promoted to reduce inefficiencies, and the pressure on public funds to maintain idle infrastructure. Further engaging the private sector through joint ventures and public private partnerships through a Warehouse Receipt Systems (WRS), as proposed by MAMID, to facilitate grain storage and trade in the country could be considered.
- **Financing of SGR Grain procurement:** The dependence on Treasury funding for SGR has proved unreliable under the current fiscal scenario, and poses a risk to guaranteeing the strategic mobilisation of grain for food security purposes. This compromises risk management, and the role of the SGR as a risk mitigation instrument, minimising its capacity to respond to food security related emergency response possibilities. Government should consider dedicating a fund to guarantee availability of the basic commodity when needed.

Government should consider creating a dedicated fund for the SGR through the enacting of a statute, such as the AIDs Levy, to ensure some guaranteed funding for this strategic food security instrument. There is also a need to diversify the commodity base of the SGR to include other basic and nutritious commodities

such as beans, ground nuts, small grains, cow peas, cassava and rice. This is to avoid the risks of depending on one commodity and strengthen our perspective on food security to include health and nutrition.

The organization and management of the SGR within GMB requires clarity. There needs to be no conflict of interest between the public management of a social entity, a role GMB assumed upon inception, and its current role that now have a commercial slant. Clearly drawing lines of management and operations for the two corporate dimensions (i.e. public and commercial) will help better ensure key stakeholders' (the public and government) expectations on accountability, corporate governance and transparency, and ensure greater efficiency and effectiveness in the management of GMB.

In conclusion it should be noted that the issues discussed in this Paper are well aligned to proposals under existing high-level policy commitments in agriculture such as Comprehensive African Agriculture Development (CAADP), Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim ASSET), and the Draft Agricultural Policy Framework, with particular reference to marketing. The paper is therefore an effort to objectively contribute towards influencing public policy on the development of an efficient maize marketing system in Zimbabwe, which will promote agricultural development and the contribution of agriculture to national output and societal welfare.

1.0 INTRODUCTION AND BACKGROUND

Agriculture occupies a central place in the Zimbabwean economy, contributing 15-18% of the country's Gross Domestic Product (GDP), over 40% of national export earnings and 60% of raw materials to agro-industries. Over 70% of the population derives its livelihoods from the agricultural sector (Government of Zimbabwe, 2009). Zimbabwe has endorsed the Comprehensive African Agriculture Development (CAADP) Roadmap with a belief that a higher path of economic growth is attainable through agriculture-led development. CAADP targets improved expenditure on agriculture (10% of GDP) towards four strategic pillars which are (1) extending the area under sustainable land management and reliable water control systems; (2) improving rural infrastructure and trade-related capacities for market access; (3) increasing food supply, reducing hunger; and improving responses to food emergency crises; and (4) improving agriculture research, technology dissemination and adoption.

The National Agricultural Policy objectives in the Zimbabwe Agenda for Sustainable Socio-economic Transformation (Zim Asset) and the Draft Agricultural Policy Framework (2012-2032) are well aligned to the CAADP Roadmap, targeting food security, export competitiveness, financing agricultural infrastructure and operations, sustainable use of natural resources and improved incomes and employment (GoZ, 2009, and MAMID various reports). An efficient agricultural marketing system is an integral component of a competitive and sustainable agricultural sector development agenda. The issue of markets has been emphasized in the country's economic development blueprints as stated above. CAADP has recognized investment in improving rural infrastructure and trade related capacities for enhanced market access amongst its four pillars. Zim-Asset has a similar focus on agricultural markets interventions as part of key strategic areas to improve the performance of the agricultural sector for overall economic development.

The Ministry of Agriculture, Mechanization and Irrigation Development (MAMID)'s Draft Agricultural Policy (2012-2032) also emphasizes the need for an efficient marketing system as integral for a competitive and sustainable agricultural sector. There is thus a common consensus at all levels towards development of an efficient agricultural marketing system for growth and development in the agricultural sector.

In recognition of the role of markets, the Government of Zimbabwe has been using marketing and price instruments to ensure that sector objectives are achieved. Maize production holds key to food security; in the consumer basket of basic goods, maize components are prominent and constitute about 11% of the total value of the basket

(Consumer Council of Zimbabwe, 2014). In cognizance of the strategic role of the crop in Zimbabwe, maize has been exposed to a diversity of market and price interventions. Of serious concern to the sector has been the policy inconsistencies and lack of detailed impact assessment as the country moved from one policy position to another. The list of policy interventions implemented over years are (1) input subsidies, (2) price controls, (3) the Strategic Grain Reserve (SGR) facility, and (4) trade restrictions.

The motive for Government interventions in the maize sub-sector are justifiable in line with the country's food security objectives of promoting food self-sufficiency, famine relief, price stabilization, improved consumption, higher farm incomes, and agricultural growth at large. This is important particularly given that food security is one of the main components of national security, thus making it a social and strategic obligation for the Government to put measures in place which engender an environment that enhances and sustains food security. The debate on the appropriateness and effectiveness of these market interventions in the maize sector requires detailed research to generate evidence on the economy-wide impact of these marketing and pricing policies on the sector (production, milling, stock feed and livestock, farm income and consumption), and the macroeconomy at large (agricultural growth, national income, investment, employment, poverty, household welfare, inflation and wage pressures).

This Study was carried out in the context of the overall economic strategy for enhancing national and household food security and nutrition as elaborated in Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim-Asset) and the MAMID draft agricultural policy document (2012-2032). The Study analyzes the impacts of past and current maize marketing interventions and uses the outcomes as a basis to derive appropriate marketing arrangements that will enable agricultural sector objectives to be achieved.

1.1 Historical Overview of Grain Market and Pricing Interventions in Zimbabwe.

Historically, a diversity of policy interventions has affected the maize sector in response to changing socio-economic circumstances. Discriminatory colonial era policies (Maize Marketing Board under Maize Control Act of 1931, Maize Control Amendment Act of 1940, Grain Marketing Board of 1950) were designed to favor market access and prices towards white farmers at the expense of black farmers and consumers. In 1967, the government introduced the Agricultural Marketing Authority to administer the GMB and other marketing boards for cotton, meat and dairy. At independence in 1980, the control of grain marketing was continued through the established institutions but with efforts to engage and service smallholder black farmers and consumers. The Grain Marketing

Board buying price was determined by a committee that included Ministry of Trade and Commerce for the benefit of consumers, as well as representatives of smallholder farmer groups. Producer and retail selling prices were set uniformly throughout the country for the marketing year. Up to date the system still uses consultative processes in setting producer prices but a lot of questions have been raised as to the level of consultations, with inputs from other interest groups such as farmers not adequately included in the final price decision.

As part of the Economic Structural Adjustment Programme (ESAP), grain market liberalization came to being in the 1990s. A two-tier marketing channel emerged by 1996 with GMB mandated to: (a) set prices to operate as floor and ceiling prices (stabilization), (b) procure produce at floor prices for SGR purposes, as well as being the sole importer and exporter. At the other end, private millers, traders and farmers were allowed to trade freely and all subsidies removed. In 1994, the Zimbabwe Agricultural Commodity Exchange (ZIMACE) was formed and was the hallmark for the liberalized maize marketing system with private players and GMB effectively competing on the market. Market liberalization was blamed for the noted increase in the maize price and its products. For instance the price of maize meal rose by 21% in 1998, a situation that triggered food riots thus prompting the Government to reintroduce price controls on maize meal in 1998.

The period 2000-2009 was characterized by major structural changes in the agriculture economy. This included the Land Reform, natural disasters, political crisis and the economic meltdown. In an effort to ensure food security and price stabilization under these difficult circumstances, the Government applied a series of inconsistent market and price interventions. In 2001 market interventions and price control measures (The Grain Marketing Notice Statutory Instrument (SI) number 235A of 16 July 2001, Statutory Instrument 387 in December 2001) were reintroduced. Maize and wheat became controlled products and farmers were ordered to deliver maize to GMB within 14 days after harvest, marking the end of private grain trade and ZIMACE, and the dissolution of standard grading systems.

After 2002, due to drought and other difficult economic circumstances, the government allowed large millers to import maize through import licenses as a measure to ensure food security. These import licenses were issued under a memorandum of understanding with the Ministry of Agriculture, with special pricing conditions and a quota. Following subsequent economic difficulties and droughts, other private millers were also allowed to import maize through an import permit system. The challenges of hyperinflation in the economy culminated in the introduction of a multiple currency system in early 2009. This policy regime saw an end to GMB's monopoly in the market as a free market was allowed with competition among all players. The import license

system was still operational and it required that whoever wanted to import the commodity had to apply for a license.

In 2012 and 2013, MAMID through GMB and AMA set floor prices that were higher than prices prevailing in the region. In addition, AMA SI 147 of 2012 and SI 140 of 2013, requiring registrations and payment of significant fees for buyers of grain products through a multiple stop and payment import permit system, adversely affected participation of the private sector in grain marketing. On 8 August, 2014, the Ministry of Agriculture, Mechanization and Irrigation Development (MAMID), through AMA, gazetted SI 122 of 2014 AMA (Minimum Grain Producers Prices) Regulations 2014. The SI fixed the minimum procurement price of maize at \$390/MT and this price was higher than any other comparable maize pricing system anywhere in the world. To achieve the objective of the SI, MAMID also put measures to restrict or ban the import of maize meal and maize grain from South Africa, Zambia and Malawi (which was still holding until recently). In January 2015, the ban was lifted but temporarily. These neighbouring countries have surplus grain which is available for export to Zimbabwe at landed prices ranging from \$265 to \$310/MT. The justification given for this high price has been that it was required to stabilize food prices and to ensure that farmers receive remunerative prices for their produce.

Thus the trend in grain marketing and pricing policy has been that in each agricultural marketing season, Zimbabwe’s grain industry has faced challenges on the appropriate grain prices and marketing arrangements for the crop. The impact of such *ad hoc* government interventions in agricultural markets is a matter for careful consideration to inform policy decisions. There are close synergies between maize production growth and agricultural growth in Zimbabwe as shown in **Figure 1** below. The combined effects of maize marketing and pricing policies, and other factors, have generally resulted in a stagnation in maize production and agricultural sector growth on a year-to-year basis, as shown below.

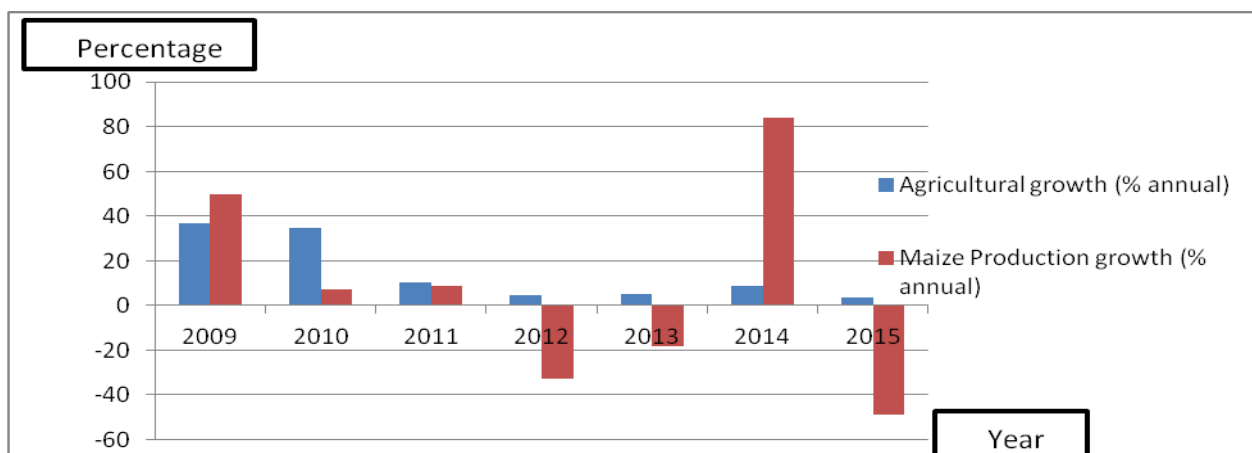


Figure 1: Growth Rate in Maize Production and Agriculture from 2009-2014

Source: Reserve Bank of Zimbabwe and Zim Stats

1.2 The Macroeconomic Context of Maize Marketing and Pricing Policy in Zimbabwe

Maize is a staple food crop in Zimbabwe accounting for over 50% of the average calorie consumption for about 13.1 million people (ZIMSTATS, 2012). In the consumer basic food basket, products derived from maize contribute about 10% of the value of the whole basket per month for a family of six (CCZ, 2014). Besides its use in human food, maize is a main energy source (consisting of 47%-75%) in the animal feed industry, supporting production of 37 million broilers and 1.5 million laying birds annually, 17,000 sow unit of pigs, and a dairy herd of about 23,000, amongst other livestock dependent on manufactured feeds (ZIM ACP, 2010, 2011 and 2012). An estimated 2.1 million MT of the commodity is consumed in the country annually.

In terms of production, the crop is grown by over 90% of the 1.3 million farming households distributed across the country, grown on over 60% of the total cropped area, taking up between 80% and 90% of the total land area under cereals, and consumes more than 50% of the fertilizers purchased in the country (MAMID crop assessment reports). The crop contributes about 14% to agricultural GDP and is second to tobacco, which contributes about 26% (**Figure 2**). Maize is thus considered a strategic commodity in the Zimbabwean economy, as a food security crop and agro-industrial processes raw material.

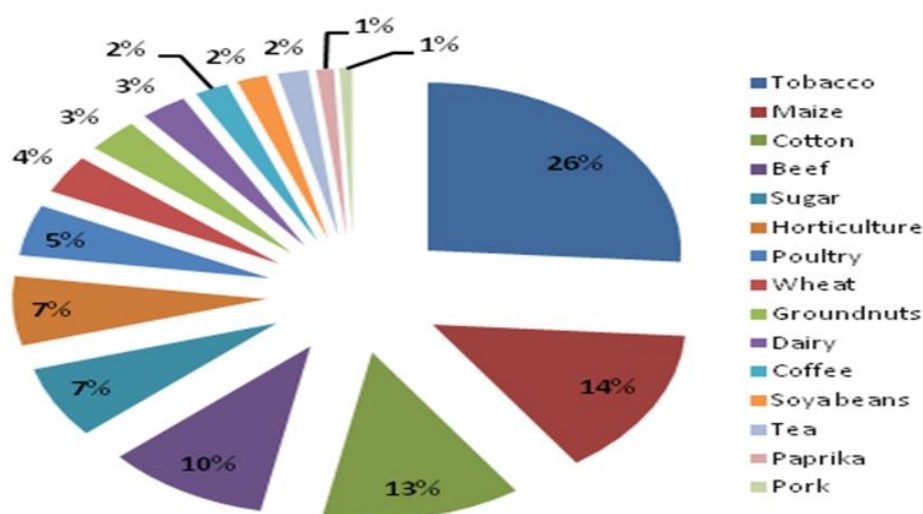


Figure 2. Contribution to Agriculture GDP 2010

Source: MAMID, 2012

The development of an efficient marketing system for a strategic sector such as maize is important for sustainable growth in the maize value chain (farmers, traders, agro-processors, and consumers/labourers), agricultural growth, and the development of the broader economy, given the agro-dependent nature of the Zimbabwean economy and the significant contribution of maize to the agriculture sector. Market interventions and controls such as (1) **input subsidies**, (2) **SGR**, (3) **price controls** (such as the gazetting of SI 122 of 2014 enforcing a minimum pan seasonal and pan territorial price of 390/mt), and (4) **import bans**, will have a profound impact on macroeconomic and price stability, food security, and the viability of the local grain industry. This paper thus articulates the impacts of maize market control on various actors in the maize value network and the overall macroeconomy.

1.3 Mapping Some Policy considerations

In concluding, the background and historical overview of the maize marketing and pricing system in Zimbabwe confirms the key role of agriculture-led economic growth, as noted in CAADP and Zimbabwe's national and agricultural sector policies. There is therefore, need for the development and implementation of an efficient agricultural marketing system to anchor a competitive, sustainable agricultural sector development and growth trajectory. Maize is a strategic commodity for food security and national security. Government's involvement in the grain sub-sector is justifiable because of the need to maintain the country's food security, promote food self-sufficiency, famine relief, price stabilization, improved consumption, farm incomes, and agricultural growth at large. However, despite long standing efforts by Government to bring about progress in the maize sector through market and price interventions, as has been noted, maize production has been stagnating and the country has remained a net importer of the commodity.

An important factor to note in the country's policy efforts has been the inconsistency and *ad hoc* nature of the policies based on the perceived requirements of the season. This scenario has created market uncertainty thus eroding business confidence, and compromising the ability of farmers and investors to undertake medium to long-term investment planning. Thus, the need for an sustainable agricultural marketing and pricing policy regime can not be overemphasized if the sector's contribution to GDP and poverty alleviation is to be maximised. In order to create a stable and conducive business environment for grain production and marketing, the country will need to draw lessons from the past, and reform policies to ensure efficiency in agricultural marketing. This will restore confidence in maize production in the medium- to- long-term. A positive economic outlook will require a stable and predictable agricultural grain marketing policy framework, and complimentary institutional interventions to unlock the viability in

agriculture, and build the requisite productive capacity to ensure food security and economic growth.

2.0 METHODOLOGY

This analysis of the economy-wide impacts of maize marketing and pricing policies is based on an evaluation of production trends, productivity trends, price variation, food security status and poverty levels, and macroeconomic variables such as gross domestic product, agricultural growth, inflation, wages, private sector activity, and other qualitative indicators. Critical policy interventions that were evaluated included (1) input subsidies, (2) SGR activities, (3) price controls and (4) import bans. The research design for such kind of analysis required a control and experimental group to be defined, to enable comparisons.

For simplicity, the period between 2009 and 2014 (post dollarization) was taken to demarcate the period of minimal markets and price interventions, and used as a basis to compare with those periods where there were serious interventions. In the case of interventions (1) and (2) the whole period involved implementation of these policies and thus comparative analysis was guided **by with** and **without scenarios**. For interventions (3) and (4), 2009-2011 was considered the control period, with close to a free market situation characterized by floor prices, two-tier marketing system, import permits and limited input subsidies. The period 2012-2014 was the experimental period, with high floor prices and later a minimum price, registration requirements, import permits and in some instances complete bans, and high subsidies. During this period Government brought in several other control and market distorting interventions in the grain industry over and above the traditional ones.

This Study used a literature review, secondary data, and key informant interviews to obtain information and data. General macroeconomic theory on national income concepts and the multiplier effects was used as a basis to analyse the economy-wide impacts of input subsidies, SGR activities, price distortions and import bans. Secondary information on expenditures on SGR and input subsidies was sourced from MAMID and GMB, while macroeconomic data on national income, inflation, wages, social accounts, and balance of payment accounts was sourced from the Ministry of Finance and Economic Development. Further information on maize price trends within the country and in the world market, maize input-output data, and production trends was collected from reliable sources such as MAMID, ZIMSTATS, Zimbabwe Farmers Union (ZFU), AMA, Grain Millers Association of Zimbabwe (GMAZ), SAFEX, ZIMSTATS, Consumer Council of Zimbabwe (CCZ), GMB and Zimbabwe Congress of Trade Unions (ZCTU), amongst others.

The reference group interviewed in the grain industry were maize producer representatives (ZFU and Zimbabwe Commercial Farmers Union (ZCFU)), Grain Millers Association of Zimbabwe (GMAZ), GMB, Grain Traders Association of Zimbabwe (GTAZ), and the regulatory authorities (MAMID and AMA). They were consulted to obtain their insights on the impact of maize marketing and pricing controls on the sector and the macro-economy at large.

3.0 ASSESSING THE MICRO AND MACROECONOMIC IMPLICATIONS OF MAIZE MARKETING CONTROL

Discussed in this section are the impacts of four maize market and price interventions in Zimbabwe namely (1) input subsidies, (2) SGR, (3) price controls such as the gazetting of SI 122 of 2014 enforcing a minimum pan seasonal and pan territorial price of 390/mt, and (4) import bans. It is unrealistic to try to separate the four interventions as they are usually applied concurrently. The administration of SGR is almost always coupled with setting of floor prices and import and export restrictions. It is therefore, not possible to disentangle the effects of SGR activities and other policy instruments applied with it. The section presents firstly the sectoral impacts of market and price distortions on incomes and consumption of maize producers, particularly smallholder farmers.

Given that agriculture is the backbone of the Zimbabwean economy supporting over 70 percent of the population living in rural areas, and maize being a staple food crop, the sectoral impacts on maize price distortions cannot be under-estimated. The study also looked at the impacts on poverty in the agricultural sector that is attributable to the policies mentioned above. Changes in the price of maize, a raw material in agro-processing will have potential impacts on the viability of maize value chain industries, consumer prices, wage pressures and inflation. Secondly, the study will discuss the macroeconomic impacts of government expenditures on input subsidies and SGR, the resultant Government Debt through open market transactions, and the multiplier effect of Government spending.

It will also assess the opportunity cost of maintaining the SGR facility and input subsidies, vis-à-vis other alternative investments such as private sector activity in the market, as well as the crowding-out effect on private players (input suppliers, grain traders, millers, and animal feed manufacturers) resulting from Government's involvement in input and output markets. All these factors will have far reaching impacts on the macroeconomy, national income, inflation, wage pressures, interest rates and overall economic performance.

3.1 Sectoral Impacts of Maize Market and Price Interventions

3.1.1 The effect on incomes of maize producers

Maize market and price distortions in Zimbabwe have been designed with the objectives of stabilizing food prices and ensuring that farmers receive remunerative prices for their

produce. Input subsidies and the setting of higher pan seasonal and pan territorial floor prices for maize concurrently imply that farmers are subsidized at two levels in the value chain. This ought to create serious incentives for maize production in the country in line with the food security and self-sufficiency objectives. In order to understand the effects of such markets and price distortions on incomes and consumption of maize by producers, this section reviews the geography and the market potential of farmers producing maize in Zimbabwe. Maize production trends, performance indicators and consumption were analyzed in relation to the support rendered.

3.1.2 Maize production geography and typology of famers

In Zimbabwe, maize is grown in all agro-ecological regions and across all provinces by diverse farmer categories (communal, Old Resettlement (OR), A1, A2, Small Scale Commercial and Peri-Urban farmers) because of its strategic role as a staple food crop. Mashonaland Provinces (Mash West, Central and East), Midlands and Manicaland are high potential areas in natural regions of rainfall IIA, IIB and III where the natural agro-ecological and topographical characteristics best suit the agronomic requirements of maize production. The bulk (81% including Peri-Urban) of the maize produced in the country come from these high potential regions with the remainder (20%) produced in Masvingo and Matabeleland (North and South).

The latter regions are dry, dominated by natural regions IV and V which are too dry for successful crop farming without irrigation. Besides the geographical and agro-ecological dimension of maize production in Zimbabwe, an important factor is the typology of farmers producing maize in the country. Dominant maize producing farming sectors in Zimbabwe are communal, A1, and old resettlement farmers in order of importance who contribute 87% of the crop, while the others contribute only 13%.

3.1.3 Distribution of input subsidies and price support

The free input support programme normally targets smallholder farmers in communal, A1 and OR areas. Commercial farmers (A2 and large scale) in some cases (e.g. 2010-2011 seasons) received partially subsidized inputs. The total support availed to all maize farmers has generally been increasing from USD 60 million in 2010, to USD 153 million in 2014 (**Table 1**). Besides the support on inputs, the setting of floor prices above the market determined price also implies a product subsidy. The disparity between local maize prices in comparison to SAFEX maize price over the years is indicated in **Table 2** below.

Indicator	2009	2010	2011	2012	2013	2014
Input subsidies (USD millions)	-	60	66	30	160	153
Maize producer prices (local) (USD/MT)	275	285	285	305	388	400
Import parity price (USD/MT)	217	235	341	348	308	242
GMB procurement (MT)	63,459	244,942	212,622	81,190	33,273	220,366
Procurement by Private sector (MT)	247,183	86,951	150,285	160,820	166,376	143,672
Total price subsidy (USD millions)	16	16	-20	-12	15	56
Grand total (USD millions) (Input subsidy plus price support)	16	76	46	18	175	209

Source: MAMID, SAFEX and own calculations

In 2011 and 2012, the domestic prices were slightly lower than import parity price, indicating that domestic producers were being taxed by the price system, while in the other years producers were subsidized. This situation could be the reason behind the rigorous control measures that were effected during the latter part of 2012 up to date. Overall, considering input subsidies and price support, there is a positive net transfer to farmers throughout the years that resulted in farmers getting a higher income from maize production. The price and input subsidy level increased by more than 10 times between 2012 and 2014, from US\$18 million to US\$209 million, with increased input support and price support. This subsidy is paid for by the Government from the Consolidated Revenue Fund (CRF) through the the Vote of the Ministry of Agriculture, Mechanistion and Irrigation Development (MAMID). Both taxpayers, individuals and corporates, (including in this case private millers) also contribute to the CRF through corporate tax.

The net positive transfer to farmers implies a huge incentive for farmers to produce maize. **Table 2** below however, shows fluctuating and generally a downward trend in maize production in the country from 2009 and beyond.

Indicator	2009	2010	2011	2012	2013	2014	2015
Maize area (million ha)	1.5	1.8	2.1	1.7	1.3	1.7	1.5
Maize output (Million MT)	1.2	1.3	1.5	1.0	0.8	1.5	0.74
Yields (kg/ha)	0.810	0.700	0.693	1.000	0.63	0.85	0.48

Source: MAMID Crop Assessment reports

Records of production trends from 2009 to date, show that the area under maize has remained fairly high, averaging 1.5 million hectares per annum. Despite the input subsidies and price support, the national average maize yield has been low, with average yields of below one tonne per hectare for most of the years, despite use of high yielding improved varieties with potential of over ten tonnes per hectare, and the increasing support of maize price and input subsidies. One reason has been the serious challenges with the appropriateness, targeting and administration of input subsidies and price supports, contributing to policy failure in stimulating productivity and production.

Given the diversity of farmers producing maize, the impact of price support and input subsidies will depend on the production and market potential of the specific farmer categories. Three groups can be delineated from these farmers on the basis of their production capacity and market orientation. The country has (1) surplus producing farmers (20%-30%), located mainly in high potential areas of Mashonaland, Manicaland and Midlands, (2) grain self sufficient but not surplus (20%), and (3) deficit producing households (60%) mainly located in dry regions of Masvingo and Matabeleland.

The benefits to farmers derived from the price support schemes is valued at USD 16 million in 2009, USD 16 million in 2010, USD 15 million in 2013, and USD 56 million in 2014 (**Table 1**). This only accrued to a few farmers who either sold excess produce or to those farmers who may not be producing in excess but instead chose to sell at the onset of the season to procure later towards the end of the marketing season. On price support, a major concern has been the logic of supporting both high potential and low potential farmers, as well as the administrative challenge of delayed payments with GMB taking up to 12 months or more from the day of delivery to pay farmers. The concept of pan seasonal and pan territorial pricing is also another factor of concern. With pan seasonal prices, there are no incentives for farmers to store and take advantage of seasonal fluctuations in prices, and this can actually induce farmers to sell all at the onset of the season only to procure later.

Pan seasonal pricing does not encourage the development of distributional networks and effectively taxes farmers close to the market while subsidizing those in remote areas. Furthermore, findings from this research noted weaknesses in the administration of input subsidies such as delays in distribution of subsidized inputs, inadequacy of input packages and inefficient targeting, all of which rendered the programme ineffective.

The resultant effect is a mismatch between the level of support, productivity and production in the maize sector (**Figure 3**). Despite an upward trend in the provision of maize subsidies and continued price support, production and productivity have remained low, confirming the limited impact of the policy instruments on maize production capacity and hence agricultural sector performance.

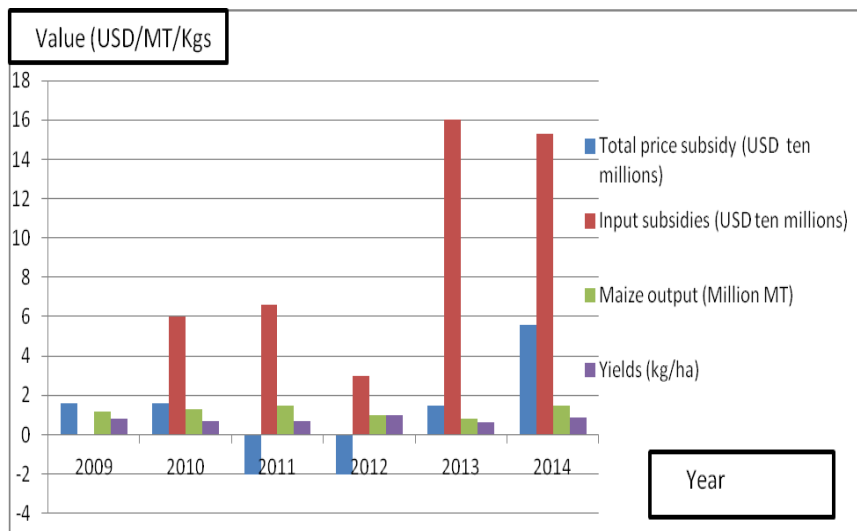


Figure 3: Input Subsidies, Maize Output and Yields in Zimbabwe

The differences in competencies and capabilities of farmers producing maize in Zimbabwe have implications on the application of policies such as input and price support such that the country is able to maximise benefits from these interventions. Input support programmes for maize production should target those farmers in high maize potential areas such as Mashonaland Provinces, Manicaland and Midlands in natural regions I, II and III in order to benefit most from the subsidies. This is contrary to the current input distribution system that disregards agro-ecological specialization and focuses on uniform access for all. Given basic maize agronomic requirements, donation of high value inputs in low potential areas such as those in natural regions IV, and V, will yield poor results because of the lack of other complementary conditions needed for successful maize production.

Thus, policy flexibility is required to provide subsidies on the basis of agro-ecological crop/livestock production capability to maximise yields, and hence production. Under such a policy regime, Matabeleland provinces including other regions with strong livestock production potential would receive livestock support subsidies to enhance productivity in the livestock sector, and thus build a livestock economy and specialised agri-business and industry to strengthen national livestock production capacity.. The same will apply for agro-zones stronger in cereals production, which will facilitate the development of stronger cereals value chains in those regions. Such specialised economies will create strong domestic market linkages and trade capacities in cereals and livestock, among other agricultural products, boosting farm level incomes, and yielding economy-wide poverty reducing multiplier effects.

On the other hand, given the current position in which very few farmers are producing surplus for sale, price support that is meant to boost farmer's incomes will not achieve much as this will benefit only a few farmers (20-30%). Policy efforts should rather be directed towards boosting production through productivity interventions (supply side factors) to ensure that farmers will benefit from the product price incentives. It should be noted that the price incentives related budgetary outlays depicted under **Tables 1** is actually an over estimation, since limited Government finances prevent full administration of the price support programmes.

When Government announces floor prices higher than elsewhere in the world, GMB then procures maize commodities from farmers at the announced floor price which is very attractive to farmers. However because of financial limitations, payments are delayed for periods in excess of one month, and may even exceed 12 months.

"The Grain Marketing Board was unable to timeously pay for delivered maize as it was taking between 25-300 days to pay farmers. Late payment of maize delivered by farmers to GMB resulted in farmers selling to private buyers who lure them because of their prompt payment. This resulted in low levels of maize in the Strategic Grain Reserve"¹.

When the payments are eventually settled at a future date, no adjustments are factored in to reflect inflation and time preferences related to the income. This practice has been condemned by stakeholders, considered as harmful to farmers by creating wrong expectations and incentives, and encourages speculative behaviour, which is counterproductive. In the 2011 season, at a spot price of USD 285/MT, it is estimated that farmers lost USD 12.55/MT. The delayed payments deprived farmers of potential income earning of up to USD 8.9 million. In 2013, Government ended the season owing farmers \$8.2 million, and in 2014 Government had not paid farmers up to \$52.4million.

¹ GoZ, Report of the Auditor General, 2014, "*Management of the Strategic Grain Reserve by the Grain Marketing Board (GMB)*", page iii.

This delay will result in a loss to farmers of \$10.5 million if it is paid within a period of 12 months from delivery.

3.1.4 Conclusions on the impact of maize market controls on production and incomes

In conclusion, input subsidies and price support that ought to have created a huge incentive for farmers to produce maize have not managed to induce any meaningful production change, as productivity still remains very low. Inefficiencies in the operations of the support programmes such as delays in inputs release, inadequacy of input packages, delayed payments, and inefficient targeting, were the main contributing factors to policy ineffectiveness. On price support, this instrument is considered inappropriate given the existence of a very small proportion of surplus producing farmers (20-30%), such that a price incentive will not have an impact because of the limited number of beneficiaries.

Delays in payment defy the logic of the price incentive as farmers are deprived of the full value of their crop. The main policy focus at the moment should be directed towards supply-side factors to effectively boost productivity and competitiveness. Adopting a policy that addresses the supply-side related factors constraining productivity will have a positive bearing on maize production, in contrast to the implementation of protectionist maize marketing policies. Furthermore, input subsidies alone are not enough to unlock the productivity potential currently suppressed by a multiplicity of factors such as climate change, weak human capacity in commercial farming and poor agronomic practices, lack of agro-ecological specialization, institutional failures (corruption, extension, research), and administrative failure in land management. There is need to consider a holistic approach to unlock productivity gains in maize production besides dealing with administrative failures in input distribution.

3.1.5 Impact on consumption

There are a number of factors that affect maize consumption, chief among them population, price, incomes, changes in tastes and preferences and maize supply. According to Gwara (2011), maize consumption is positively related to supply and price. Given the trade restrictions in Zimbabwe, maize consumption is largely dependent on domestic supply. For the rural poor with limited income streams, domestic production largely influences consumption although some purchases can be mobilized and in some instances donor provisions availed. The maize production pattern discussed earlier showed fluctuations, with no meaningful increases in production to meet domestic needs. According to estimates, the country requires about 1.5 million tonnes for human

consumption and an additional 0.3 million tonnes for industries. Domestic production has been consistently in deficit of national requirements, thus suppressing consumption given the limited capacity of the country to import maize. Maize floor price increased significantly during critical years of shortages such as 2011-2012 and 2012 -2013, and was further increased to a minimum price of USD 390/MT in 2014.

High market prices resulting from either supply factors or through government minimum grain prices that are above the competitive benchmarks imply a cost push for grain processors, which will be transferred onto consumer products as processors strive to maintain viability. Growers, particularly grain deficit farmers who constitute (60%) of the total grower population, are also part of the rural and urban population who are net purchasers of the commodity. Generally low-income households in both rural and urban areas, spend a disproportionately high proportion of their incomes on food given the basic nature of food. According to **Table 3** below, food is an integral part of the consumer basic basket (urban family of six), and maize products constitute 11% of the value of the whole basket excluding beverages.

Indicator	2009	2010	2011	2012	2013	2014
Consumer basket (USD)	488.11	499.95	545.35	572.00	564.72	590.63
Weight of food (excluding beverages) items in the consumer basket	33.66%					
Number of maize products (excluding beverages) in food basket	5 out of 10 food items					
Weights of maize products (excluding beverages) in the food basket	11.2%					
Cost of maize components (excluding beverages) in food basket (USD)	50.40	54.52	69.60	66.36	62.90	60.94
Food security trends	82	85	88	81	75	94
<i>Source: CCZ, 2014 and ZIM-VAC 2014</i>						

Although data for the rural basket has not been compiled, the weight of food for a rural household is expected to be much higher than urban households, given low expenditure on non-food items such as domestic water, housing and low/no electricity usage.

Between 2009 and 2012 the cost of maize products increased in response to the increase in maize prices. However, the increases did not continue beyond 2012 although the maize price continued to increase. This was largely explained by low demand for the product from rural areas as farmers retained their product to mark their frustrations with non-payment by GMB, and general urban poverty created by

unemployment and low wages. Competition in the market also affected potential price increases, as formal and informal millers competed for the same consumers thus contributing to price declines despite the increased cost of raw material.

In 2014, a significant amount of processed maize meal that was stacked in wholesale and retail shelves for a period beyond expiry ended up being sold for a discount to animal feed manufacturers. A number of millers in maize milling business were noted to have shut down or reduced operations owing to viability challenges following the setting of a minimum price of maize at USD 390/MT. The wage freeze also further suppressed the demand for maize and its products. In the long run, it is envisaged that with decreasing profit margins resulting from a rigid price of the final product against increased cost of raw materials, the milling industry will contract, with employment and wages falling. This will be detrimental to consumption and threaten food security for urban consumers, and rural deficit farmers.

According to the ZIM-VAC 2014 Report, the country has not been able to eliminate food insecurity (**Table 3**). Food security, at the individual, household, national, regional, and global levels is achieved when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for a healthy and active life (FAO, 2001). The trends shown in **Table 3** indicate an improved trend in food security from 2009-2011; however, from 2011 to 2013, the proportion of food insecure households started to increase. This came down in 2014. The sudden decline in 2014 was attributable to a good season, improved input support programme, and marketing challenges associated with the introduction of SI 122 of 2014 that saw many formal buyers pulling out of the market and farmers skeptical of the GMB market withholding a substantial amount of maize from the GMB and trading through informal market channels.

This contributed to improved local food security with the cumulative energy deficit for rural households coming down to 20,890 MT in 2014 compared to 177,000 MT in 2013. Although the results of the 2015 vulnerability assessment are yet to be released, with a decrease in production by 49% from last season, it is expected that the proportion of food insecure households this year will increase substantially.

Generally, low levels of production, restrictions in maize imports and increased maize prices imply a decrease in consumption of the commodity through the laws of demand and supply. A decrease in supply of a commodity will trigger an upsurge in prices while an increase in price will result in lower demand.

3.1.6 Impact on maize meal prices, consumer prices, inflation and wage pressures.

Increased grain prices induced by Government policy have a direct impact on consumer prices and inflation, through consequent wage pressures. An increase in the cost of raw material for the milling industry, as shown by maize producer price trends in **Table 1** implies high costs of production for the millers. In order to maintain viability, the product price is adjusted to pass on the additional cost to final consumers. According to the price trends for mealie meal shown in **Table 4**, prices increased steadily between 2009 and 2011 but then started increasing more rapidly in 2012 to 2013, before falling marginally in 2014.

This trend is well aligned to the Consumer Price Index (CPI) trend which increased from 2009-2013 and dropped in 2014, indicating the strong association and contribution of mealie meal price to CPI and general inflation levels. The noted price increase of mealie meal from 2009-2013 was on account of cost push factors in response to increases in the price of maize grain. The minimum wage has been tracing a pattern similar to that of mealie meal prices movement (Table 4). This also proves that a positive relationship exists between the price of mealie meal and the wage rate.

Indicator	2009	2010	2011	2012	2013	2014
Maize prices (local) (US\$/MT)	275	285	285	305	388	400
Price of mealie meal (US\$/MT)	400.00	402.50	440.00	519.00	612.50	567.50
Consumer price index (CPI) trends (2012 as base year)	89.5	92.2	95.4	99.0	100.6	100.4
Minimum wage rate (US\$)	90.0	189.4	166.5	167.4	246.5	246.5
Inflation (annual)	-0.65	0.28	0.39	0.24	0.03	-0.07
Interest rates (annual averages)	25	23	22	21	22.2	20.1

Source: Zimbabwe Vulnerability Assessment (ZIM VAC) report, 2014, ZEPARU, 2014, GMB, ZIM STATS and CCZ reports.

Between 2013 and 2014, the minimum wage remained stagnant as the mealie meal price actually came down and CPI also decreased by 0.2 points. The reality on the ground is that industry workers particularly in the milling industry in Zimbabwe successfully advocated for a wage increase of 5% in 2014 in response to increases in the prices of basics.

Consequently, a number of millers in the maize milling business were noted to have shut down and reduced operations owing to viability challenges following the setting of a

minimum price of maize at USD 390/MT, competition and wage pressures. Although inflation is suppressed right now, in the long run, it is envisaged that with decreasing profit margins resulting from rigid prices of the final product against increased cost of raw materials, the milling industry will contract, employment will fall, wages will fall, supply will decrease and prices will eventually rise. This will be detrimental to consumption and threaten food security both for urban consumers, and rural deficit farmers.

3.1.7 Conclusion on consumption related impacts

In conclusion, maize consumption can be improved through production increases, lower prices for maize and increased incomes for consumers (rural farmers and urban workers). Failure of input subsidies and price support mechanisms to induce meaningful production increases in maize, due to administrative and other factors have also contributed to low consumption for consumers who depend mainly on domestic supply. Delayed payments to farmers by GMB has also been blamed for the notable erosion of buying power for farmers, who are also consumers.

Further, guaranteed grain prices that are above the competitive price implies a cost push for grain processors which will ultimately be passed onto consumers as processors strive to maintain viability. Maize and maize meal price changes have a strong influence on the CPI and inflation. Given the structure of the maize meal industry, competition has prevented further price increases. In the long-run, further increases in maize prices under the current industry structure will trigger contraction of the milling industry, employment cut backs, and inevitably suppress wages and hence effective demand. The contraction in production on account of higher raw material prices will in the short- to- medium term trigger a bout of maize-meal price spikes, with negative consequences for both urban and rural consumer welfare.

There is a generally observed conflict of interests in SGR policy as it strives to improve food security but at the same time is paired with producer price support to improve incomes of farmers. Higher prices for producers frequently lead to higher consumer prices, which reduces real incomes and is in conflict with the food security objective of the scheme. This ends up harming maize consumers, most of whom are smallholder farmers themselves. Thus, the combined effects of the ineffective input subsidies and inappropriate price support to stimulate productivity have resulted in a contraction of maize production.

3.1.8 Impact on poverty in the agricultural sector

Poverty in general exists when people lack the means to satisfy their basic needs. In this context, the identification of poverty among people first requires a determination of what constitutes basic needs. Looking at the basic consumer basket in Zimbabwe either from ZIMSTATS analysis or CCZ, the main components are food and non food items. The agricultural community in Zimbabwe strives to produce food, firstly for themselves, and the excess for the market to generate income that will contribute towards attainment of other basic needs. The smallholder farming sector which is the norm in Zimbabwe post-land reform, relies mainly on subsistence farming and has little surplus for sale to satisfy basic needs and other non-basic needs.

It has emerged from the previous discussion that policy support efforts to boost agriculture production have yielded very little because of administrative failures, poor targeting, and inappropriateness of some policies, and lack of a holistic approach in dealing with a multitude of supply oriented factors. The current performance in the sector is pathetic with average maize yields barely reaching a tonne per hectare for smallholder farmers (CA, OR, SSCFA and A1) compared to the existing potential of over 10 tonnes per hectare. **Table 5** below show the current yields for all farming sectors in Zimbabwe.

Table 5: Trends in average maize yields by farming sectors.

Sector	2010/11	2011/12	2012/13	2013/14
CA	0.25	0.2	0.46	0.59
OR	0.4	0.7	0.48	0.82
SSCFA	0.5	0.5	0.55	0.99
A1	1	0.6	1.28	1.11
A2	1.8	1.6	1.90	2.55
Peri-Urban	2.5	2.8	1.60	1.14

Source: MAMID, crop assessment reports

With this poor productivity performance of farmers, there is no way farmers can earn a meaningful living from maize production. This problem is further increased by delayed payment by GMB for maize delivered during a specific marketing season, as has been documented earlier. This erodes the value of the farmer's produce and results in more poverty for the farmers.

An increase in the price of maize beyond competitive levels and subsequent import bans will create viability challenges for the milling industry that will result in contraction of the sector. Some milling companies have already shut down business in the last

quarter of 2014 following the announcement of SI 122 of 2014. Unemployment and inflation resulting from limited supplies in the long-run will force some urban workers to migrate to rural areas, a situation that will increase pressure on natural resources and cause environmental deterioration of rural areas.

3.1.9 Conclusion on poverty related impacts

According to the Zim Vac Report of 2014, the prevalence of poverty in Zimbabwe was estimated at 63%, with 16% estimated to be in extreme poverty. Poverty is more widespread in rural households (76%) compared to the 38% in the urban areas. Rural poverty has increase from 63% in 2003 to the current 76% in 2014. Nationally, the average household income for April 2014 was USD 111, an increase from last year's average of US\$95. Food items constituted the greatest share of most rural households' expenditure at 58%. The monthly income in April of USD 111 was far below the food poverty line of USD 157.6 per month in 2014.

Evidence from the research therefore indicates that the poverty scenario in agriculture and in the rural areas is far from being resolved. Despite initiatives to support production and more incomes, people have remained poor, earning incomes lower than basic needs. Farmer incomes have not improved due to low productivity and delayed payments for produce delivered to the GMB. High unemployment with contraction of industries following increases in maize price and import restrictions account for low incomes and may lead to urban to rural migration which will create pressure on natural resources in the rural areas.

4.0 MACROECONOMIC IMPACTS OF MARKET AND PRICE INTERVENTIONS IN MAIZE

SGR and input subsidies have cost implications on government expenditure and the macroeconomy through national income and the multiplier effect. This section covers an analysis of the management of the SGR, including expenditure on the strategic food security instrument facility, input subsidies schemes, and their implications on Government debt and fiscal pressure.

4.1.1 The Strategic Grain Reserve facility

The Grain Marketing Board (GMB), the country's parastatal in grain trade and marketing was established under the Maize Control Act of 1931. The mission of the GMB is to ensure food security at household level through agricultural production support, marketing, logistics and value-addition. Its basic responsibilities are to provide local farmers with a guaranteed outlet for their excess controlled products and to ensure the availability of adequate supplies for the local market, either from internal production or from imports. A "controlled product" is an agricultural product declared by the Minister of Agriculture, Mechanisation and Irrigation Development (MAMID) as controlled in terms of the Grain Marketing Act, and maize has been such product. Among other mandates, the GMB is expected to-:

- i) buy and sell any controlled product which is delivered to or acquired by it,
- ii) provide storage, handling and processing facilities,
- iii) maintain Strategic Grain Reserves for Government in line with Government policy,
- iv) import and export agricultural products as it may consider necessary and,
- v) establish more depots so as to stimulate agricultural products, particularly in the production of small grains.

The act of accumulating cereal (maize) has been in place to ensure buffer stock for price stability, social safety net for vulnerable households, and emergency relief stock in times of need.

Currently GMB has a total of 84 warehouses with a long term storage capacity of 0.75 million MT plus 3.75 million MT of shades and open spaces. Each year the country earmarks about 500,000 metric tonnes of physical stock of maize and an additional 436,000 in monetary equivalency. These set targets for SGR have not been met in

recent years. **Table 6** shows disparities between actual procured physical grain for the SGR and that expected over the years.

Indicator	2009	2010	2011	2012	2013	2014
GMB procurement (MT)- local	63459	244942	212622	81190	33273	220366
GMB procurement (MT)- foreign	417	3580	-	-		18880
Total SGR (MT)	63876	248522	212622	81190	33273	239246
Deficit requirement for SGR (MT)	-436124	-251478	-287338	-418810	-466727	-260754

Source: GMB various reports

It can be noted that the Government has not been able to procure required grain as prescribed due to financial limitations. Using an annual requirement of 120kgs per capita, the nation requires about 1.56 million MT per year to feed its population of about 13 million people, excluding animal feed. In some years (2009, 2012 and 2013) actual procurement barely reached one month requirements for the country, while in others (2010, 2011 and 2014) procurement just exceeded one month's requirements.

The current desired stock level of 500,000 MT in physical stock plus 436,000 MT in money equivalency is considered too high: firstly, against what the country can afford given that this level has never been attained in the past years, and secondly, comparing this with countries in similar circumstances such as Malawi and Zambia which have even higher populations. Malawi which has a population of around 16.36 million, has pegged its optimal stock at 60,000 MT and has been able to hold stock above this limit at around 140,000MT (IFPRI, 2010) annually, while Zambia with a population of 14.54 million pegs its stocks at around 300,000 MT, all of which are much lower than Zimbabwe in physical quantities and relative to population. Obviously from these cases, Zimbabwe has pegged its SGR at much higher levels and that is the reason why it is struggling to attain it.

The GMB as an agency handling the SGR is also running a parallel commercial unit. This causes a serious conflict of interest in the agency's management of a social entity (SGR), and a private entity (commercial section). There is a need to delineate management and administration of the two entities to ensure transparency and accountability of public funds being channelled to the SGR.

Figure 4 below shows the actual versus planned SGR facility costs (in USD) for the country from 2009-2014.

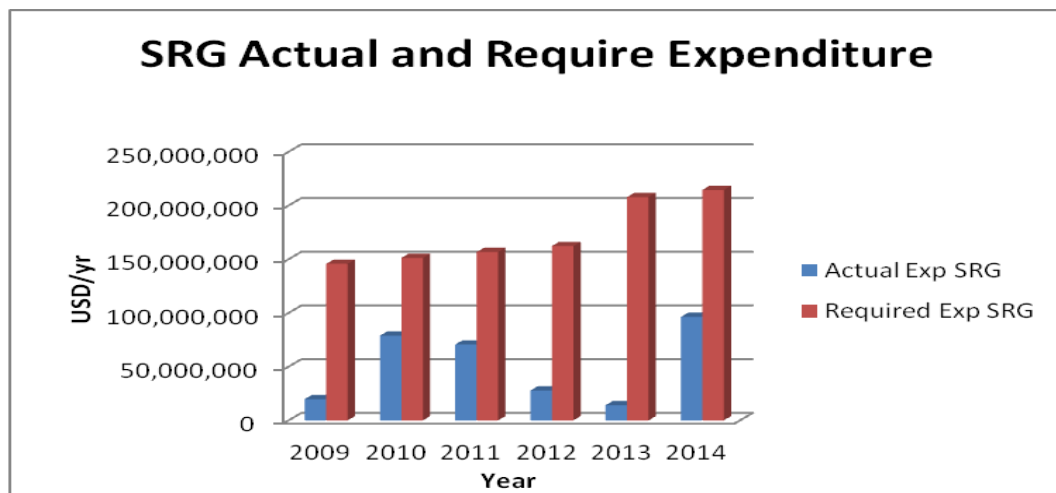


Figure 4. Actual Versus Expected SGR Facility Costs in USD.

The deficit gap between actual costs of financing the SGR and what would be optimally desirable funding requirements for this strategic food security facility, confirm that the SGR is unable to meet its principal objectives of guaranteeing food security and price stability due to resource limitations. The programme is obviously not feasible given the limited resources the country has. A critical decision that the country will need to deal with therefore is whether it is economically sound to continue maintaining the current levels of SGR despite consistent failure to meet set targets.

Figure 5 provides an illustration of the framework that traces the full cost structure of managing the SGR. The direct costs for the SGR include storage costs, transport costs, inventory costs, acquisition costs and the costs associated with distribution.

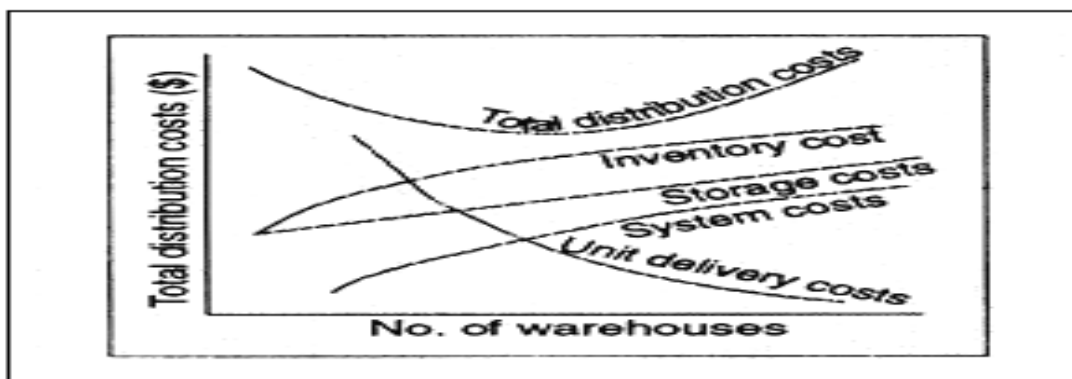


Figure 5. Framework for Total Direct Costs of Holding Cereal Stocks

Source: Food and Agriculture Organization, 1997

It is quite apparent from this framework that an efficient cost model ought to be followed in relationship to quantities stored and warehousing facilities used. It is however, not clear if the GMB is guided by this framework in its operations to ensure cost efficiency or not. In terms of capacity utilization, the GMB uses only 30% of its established long-term storage infrastructure, confirming a high degree of inefficiency in the utilisation of installed plant capacity or infrastructure. The established infrastructure will require services and maintenance irrespective of whether it is being used or not, and thus with the observed low capacity utilization, GMB is incurring huge fixed costs and overheads to maintain the infrastructure.

Feedback from some stakeholders point to the following challenges being faced by the GMB:-

- i. Dilapidated plant and equipment due to overdue repairs and maintenance;
- ii. Depleted motor vehicle fleet which needs urgent replacement;
- iii. Lack of logistics fleet;
- iv. Underdeveloped Information Communication Technology Infrastructure;
- v. Limited lines of credit – liquidity challenges.

The total amount of money needed for the capitalisation of the SGR amounts to US\$51 million which is required for silo rehabilitation, establishment of a logistical fleet, and the development of Information and Communication Technology Infrastructure (ICT).

4.1.2 Conclusions on SGR

In conclusion, the SGR level set by government for Zimbabwe has not been attainable over the years due to limited funding. Given climate change, with the country going through frequent climate related shocks such as droughts and floods, the concept of SGR remains relevant as a mechanism to stabilize prices and ensure emergency supplies. However, there is a need for policy direction on the size of stock holding for SGR given the country's vulnerability to climate induced maize supply bottlenecks. That aside, the right market signals to influence production and marketing decisions holds the key to a proper management of a food security instrument such as the SGR.

The current weak capacity utilisation of installed plant/infrastructure by the GMB is a cost to the economy. This is highly inefficient as the operation is incurring huge fixed costs. The need to ensure optimal utilization of the current plant capacity at GMB cannot be overemphasized if the government is to get a good return for its investment in this public entity.

A serious cause for concern in the operations of the SGR has been the dependence on unreliable Treasury funding. There is need to establish a viable funding model for the SGR to guarantee its sustainability as food security instrument. The management and organization of the SGR facility within GMB at the moment is not clear from a public accountability perspective, with a lack of clear lines between the GMB commercial unit and the SGR.

4.1.3 Impact of expenditure on input subsidies and SGR

Government is spending money on supporting maize production and consumption through input subsidies and the SGR, with the latter providing a price premium above competitive prices to incentivise farmers. Over the years, the government has increased its allocation to the input support programme, for instance from 2010-2014, expenditure on input support increased by 155% from USD 60 million to USD 153 million (**Table 1**). Expenditure on SGR has been fluctuating, depending on availability of resources. **Table 7** below shows the combined expenditure by government on input subsidies (from **Table 1**) and SGR.

Indicator (million USD)	2009	2010	2011	2012	2013	2014
Costs of SGR	20	79	71	28	14	91
Total cost of SGR and Input subsidies	20	139	137	58	174	250

Source:

From **Table 7** above, we can see the increasing trend in GMB costs on SGR and input subsidies, totalling USD 250million in 2014, of which 39% was associated with SGR activities and 61% on input subsidies. Contrary to these costs, budget allocations have been very small. Allocation to the Agriculture sector from the National Budget has been very unstable, fluctuating between 4% and 25% of the National Budget. Input subsidies have been consuming between 9%-109% of the Agriculture Budget, while the SGR facility has been accessing 6%-58% of the Agriculture Budget (**Table 8**).

Indicator	2009	2010	2011	2012	2013	2014
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National Budget (USD millions)	1,391	2,250	2,750	4,000	3,860	4,742
Agricultural Sector Budget (USD millions)	343	448	122	337	147	391
Agricultural sector Budget (% of National Budget)	25%	20%	4%	8%	4%	8%
Input Subsidies (% Agriculture Budget)	-	13%	54%	9%	109%	39%
SGR (% Agriculture Budget)	6%	18%	58%	8%	10%	62%

Source: Ministry of Finance and Economic Development, Blue Books and MAMID reports.

The combined costs on SGR and subsidies imply a huge expenditure bill for government that will be met through taxpayer's income. The same taxpayers, particularly urban employees, are also consumers of maize and will suffer a decrease in effective demand for maize that will result in a decrease in consumption.

4.1.4 Government Debt

The bulk of the expenditures associated with Government financing of the SGR and input subsidies has been through credit financing. Government has procured the bulk of the seeds and fertilizer over the years from input suppliers on credit to support input subsidies, while grain procurement and handling for SGR was also undertaken on credit by delaying payments for farmers and facilitating payments through borrowing from the open market in the form of AMA-CBZ bills. In 2014, debt to input suppliers for seeds amounted to about US\$30.6 million (2015 National Budget Statement), farmers and AMA-CBZ bills of US\$103.8 million, and some money owed to GMB in the form of Agency fees. Maize marketing and pricing policies have thus contributed to government indebtedness, contributing 1.7% to the total national debt position of US\$8.4 billion (Table 9).

Indicator	Amount (million USD)
National (Government) debt	8 400
Debt to SGR (GMB and Farmers, interest from AMA bills)	103.9
Debt input supplier	30.6
Total SGR and input support debt	134.5
% of national debt	1.7%

The total debt for the country amounts to about US\$8.4 billion dollars of which 14% is domestic debt and 86% is foreign debt. According to data featured under **Table 9**, total debt in respect of the SGR and input subsidies constitute 11.5% of the total domestic debt and 1.7% of the national debt.

This indicates how unsustainable the current financing model for the SGR is.

4.1.5 Liquidity crisis created by Government borrowing for SGR and input subsidies

Government debt to the private sector (farmers and input suppliers) in the maize industry as articulated in the section above worsen the current liquidity crunch affecting the Zimbabwean economy through the crowding out of resources that would have been available for private sector investment through the domestic credit markets. Open market transactions by Government to raise money for grain procurement deplete financial resources from the open market hence curtailing the financial intermediation role of the banking sector. According to the quantity theory of money (Jhingan, 2005), there is a positive relationship between money supply and general price levels, assuming that the volume of trade and velocity of circulation of money remains unchanged. Thus a decrease in money supply can be deflationary to the economy, lower wages and interest rates (**Table 4**).

A decrease in money supply due to open market transactions will increase interest rates together with other factors, such as risk of doing business and poor investor confidence in the economy. Although declining, the cost of money in Zimbabwe is still extremely high when compared to regional levels. The average lending rates stood at 22% in 2013, which is nearly double the level observed in Mozambique (15.3%), the second highest in the regional sample, and slightly more than 3 times the levels observed in South Africa where the average lending rate stood at 8.5% (ZEPARU, 2014).

Government borrowing from the public to support the grain reserve policy and input subsidies has therefore worsened the liquidity crisis in the private sector. Interest rates have increased to non competitive levels due to shortage of money in the open market. This is detrimental to investment, employment and income growth in the economy.

4.1.6 Impact on consumption and national income.

A critical review of the nature of government expenditures on SGR and input subsidies and likely impact on the economy does not give a positive outlook. Consumption and

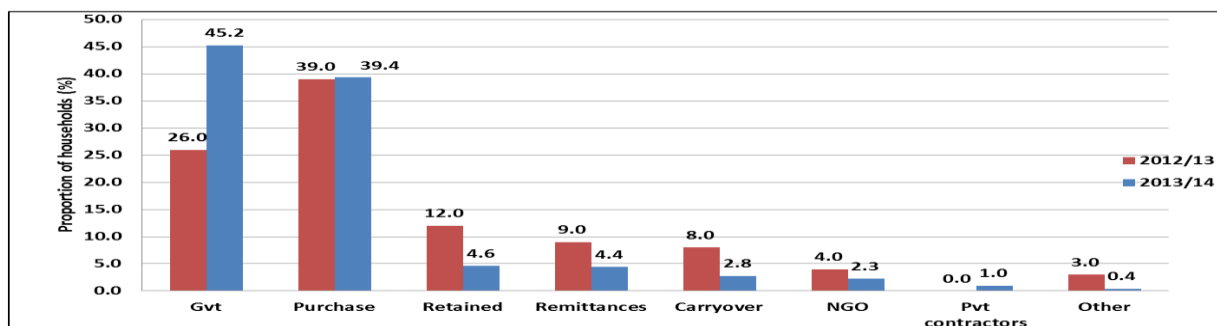
investment spending are determinants of aggregate demand and income from a macro-economic perspective. Firstly, the cost and debt associated with SGR is purely for consumption purposes which does not induce any multiplier effect on the macro-economy. High consumption expenditure at the expense of investment expenditure has an impact through the backward operation of the multiplier. Government has been allocating spending between 6% and 58% of the agricultural budget on procuring and handling grain for the SGR. This expenditure on consumption of grain is a drag on investment which leads to contraction of national income, employment and consumption through the backward operation of the multiplier.

The input subsidies, on the other hand, particularly for smallholder farmers, have yielded very little productivity growth due to poor performance in the smallholder sector. Yields in Zimbabwe for the smallholder sector have been worse than anywhere else in the region, averaging less than 1mt/ha. Borrowing for consumptive and non productive activities is detrimental to income growth and economic growth, and results in a negative impact on national income, causes poverty and a decline in societal welfare.

4.1.7 Opportunity cost and crowding out of private investment

The spending on public stocks and input subsidies also creates opportunity costs, as less funding and opportunities are available for other public programs which might be more efficient and effective at ensuring food security and price stability. Alternative private sector options include programs that support private storage, trade, commodity markets, insurance mechanisms and safety net programs, all of which can potentially contribute more to food security. Due to heavy expenditure by government on activities that have potential for private sector participation, there is limited space to accommodate private investment activities, and as a result government has not been able to progress on initiatives such as the Commodity Exchange and the Warehouse Receipt System.

In sum , the SGR and input subsidies have crowded out private sector involvement in grain and inputs trading activities. **Figure 6** below shows the level of dependency on government input supply as compared to market based supplies. In 2014 about 56% of households procured inputs from donations as compared to procurement through the market, and at the same time dependency on Government versus private supply increased from 2013 to 2014.



The availability of large amounts of donated inputs and grain crowds out private business from the open market. This is detrimental to private investment, employment, and capital formation.

4.1.8 Conclusion on Macroeconomic impacts of SGR and Input subsidies policy

The SGR programme and input subsidies have been costing government up to 112%, 119%, and 101%, of the total Agricultural budget in the periods 2011, 2012 and 2014 respectively. Due to limited funding, government relied on borrowing from the open market to facilitate its input support and SGR initiatives. Government borrowing from the open market that is currently cash tight due to limited foreign direct investments and local financial disintermediation has worsened the liquidity situation. This has increased interest rates, decreased investments, and in the ultimate analysis will result in low economic activity. The spending on public stocks and input subsidies also creates opportunity costs, vis-à-vis other alternative investments such as private sector activity.

The crowding out of the private sector in grain and inputs trading activities further implies less investment in these activities, limited fiscal space and general unemployment.. Expenditure on SGR implies high consumption expenditure at the expense of investment expenditure, and will have a negative effect through the backward operation of the multiplier. Poorly packaged input subsidies for smallholder farmers have yielded very little productivity growth and are a waste of national resources unless they are well complemented which other supply-side measures designed to yield positive productivity gains.

5.0 CONCLUSIONS AND POLICY RECOMMENDATIONS

This section documents some conclusions on the study, and also provides some practical policy recommendations that can be a basis for interventions to support producer prices and food security without generating negative macroeconomic consequences. The recommendations also target specific measures on the reconfiguration of the role of GMB to ensure that it effectively supports maize production and food security with the objective of maintaining viability and minimum strain on the National Budget. Possible options for joint ventures between GMB and private sector in grain storage, input distribution and food security are considered among other options in this regard.

5.1 Conclusions

Historical overview of policies and background: The study confirms the important role played by agriculture in economic growth and development as emphasized in CAADP, Zim Asset and the Draft Agriculture Policy Framework, and the need for an efficient agricultural marketing system as an integral component of a competitive and sustainable agricultural sector. Maize holds the key to food security and poverty eradication as it is a staple food crop and a main energy source in livestock feeds. Government's involvement in the maize sub-sector is justifiable on the need to maintain the country's food security, promote food self-sufficiency, famine relief, price stabilization, improved consumption, farm incomes, and agricultural growth at large. However, despite determined efforts by Government to enhance the production of maize through market and price interventions, maize production has been stagnating and the country has remained a net importer of the commodity.

The maize marketing and pricing policy in Zimbabwe over the years has not been able to engender a competitive agricultural production environment. With productivity levels remaining low, the marketing and pricing regime has been tantamount to extending unsustainable subsidy levels to compensate for production inefficiencies. The price and input support mechanisms have also been under-funded, inadequately implemented, poorly administered and not appropriately targeted, thus limiting their effectiveness in serving as food self-sufficiency, food security, and price stabilization instruments. Production of maize has therefore remained largely unviable and uncompetitive, thus reducing farm incomes. The pricing and marketing policy regime for maize have over the years engendered a highly unpredictable business-operating environment for the farming community, and one that makes planning for investment purposes difficult.

Incomes of maize producers: Input subsidies and price support have not managed to induce any meaningful change in maize production as productivity still remains very low. Inefficiencies in operations of the support programmes such as delays in inputs release, inadequacy of input packages and inappropriate targeting systems, have been the main contributory factors to policy ineffectiveness. On price support, the instrument is inappropriate given the existence of a very small proportion of surplus producing farmers (20-30%), such that a price incentive will not have an impact because of the limited number of beneficiaries. Delays by GMB in releasing payments to farmers once maize deliveries have been effected impair the full benefits of the price incentive, as this denies farmers immediate access to their earnings and utilisation thereof.

Furthermore, input subsidies and price support schemes alone are not sufficient to unlock the productivity potential of farmers currently constrained by a multiplicity of factors such as climate change, weak human capacity in commercial farming and agronomic practices, lack of agro-ecological specialization, institutional failures (corruption, extension, research), and administrative failure in land management.

Consumption of maize meal, consumer prices, inflation, and wage pressures: Failure of input subsidies and price support systems to induce meaningful production increases in maize have contributed to low consumption for consumers who depend mainly on domestic supply. GMB delays to pay farmers promptly upon delivery of maize, erodes farmers' income, thus compromising their welfare.

There is a generally observed conflict of interest in policies aimed at improving food security but at the same time paired with producer price support to improve incomes of farmers. Higher prices for producers frequently lead to higher consumer prices, which reduces real incomes and is in conflict with the food security objective of the scheme. This ends up harming maize consumers, most of whom are smallholder farmers. Increased price of maize, as a raw material to industry, impacts negatively on the cost of production. This is passed on to final consumers of maize-meal through an increase in product prices. This is more pronounced in the case of the urban workforce, due to erosion of incomes and hence loss of effective demand for maize-meal. Thus, in the ultimate, the combined effects of the ineffective input subsidies and inappropriate price support to stimulate productivity, have caused industry contraction and real wage declines that work collectively to suppress maize consumption by both farmers and urban workers.

Poverty dimensions: In terms of poverty of the rural population, despite initiatives to support production and more incomes, people have remained poor, earning incomes

below the poverty datum line. Farmer incomes have not improved due to low productivity and delayed payments. High unemployment triggered by contraction of industries following increases in maize prices and subsequent import bans result in low incomes, and hence loss of societal welfare.

Strategic Grain Reserve facility: The SGR level set by the Government has not been attainable over the years due to limited resource availability. Given climate change, with the country going through frequent climate related shocks, such as droughts and floods, the concept of SGR remains relevant as a mechanism to stabilize prices and ensure emergency supplies. However, the mismatch between infrastructure investment and investment in operations within GMB implies that idle infrastructure is not being utilized despite incurring significant outlays for maintenance. A serious concern in the operations of the SGR has been the dependence on unreliable Treasury funding that has caused delays in payments to farmers and failure to meet set targets.

Expenditure on input subsidies and SGR: The SGR programme and input subsidies have been costing Government a lot of money, which is beyond its means. Government borrowing from the open market to facilitate these programmes has worsened the liquidity situation. This has increased interest rates, decreased investments, and ultimately results in low economic activity. The spending on public stocks and input subsidies also implies opportunity costs relating to other potential investments such as private sector activity that could have benefitted from these financial resources. The crowding-out of the private sector in grain and inputs trading activities further implies less investment in these activities, limited fiscal space, and unemployment for the population.

Expenditure on SGR implies high consumption expenditure at the expense of investment expenditure, and this has an influence on national income through the backward operation of the multiplier. Poorly packaged input subsidies for smallholder farmers have yielded very little productivity growth, particularly given that they have not been properly targeted and not linked to objective considerations such as agro-ecological specialisation and production potential. For instance Matabeleland should specialise in livestock and game farming, given the agro-ecological conditions for that region, with that influencing the subsidy disbursement policy.

Thus, grain/ cereals based activities could also develop in agro-ecological zones that favour such cropping regimes, thereby building possibilities for eventual trade with the livestock specializing regions. This would trigger an inclusive agricultural growth model for Zimbabwe. Though this could be one step towards enhancing productivity and hence yield levels, this has to be complemented by interventions to improve the supply

response in the national agricultural production function, such as improved infrastructure, road networks, irrigation infrastructure rehabilitation, land tenure systems, agribusiness linkages, extension services, and marketing linkages, to optimise the development of an integrated agricultural model for Zimbabwe.

5.2 Policy Recommendations

- i) Zimbabwe should embrace the concept of agriculture-led growth and development as a road map to developing its way forward, given its advantages of land and natural resources availability. There is need for strategic planning in developing policies for market and price interventions in the maize sector to create a conducive business environment. Government should endeavour to create a viable and predictable business operating environment for the agricultural sector, one that provides scope for productivity growth, and innovation. Government should stem policy uncertainty by providing policy signals that stimulate production and investment in agriculture, affording private sector players sufficient scope to plan with some measure of certainty for medium- long-term investment projects.
- ii) In order to create a stable environment for grain marketing, the country will need to draw lessons from the past and re-orient its policy priorities to promote efficiency in agricultural marketing. A positive economic outlook will require medium- to- long term stable policy and institutional interventions to govern marketing of maize to anchor the sector's contribution food security and economic growth.
- iii) As a way forward on the subject of subsidies, government has to improve administration of input distribution to ensure timely disbursement, supply of adequate input packages, and target farmers in natural regions I, II and III who have a comparative advantage in maize production. Input subsidies alone are not enough to unlock the productivity potential of farmers in maize production. There is need to consider a holistic approach to address the supply oriented factors currently inhibiting realization of the country's maize production potential. This would cover addressing climate change related risks through climate adaptation, human capital development, agro-ecological specialization, conducive land administration and governance, institutional capacity, and technology development efforts.

- iv) In terms of technology, while Zimbabwe's GMO free policy is commendable to some extent, the critical challenge is the context of the policy in line with global GMO trends, the globalization of the world economies, and inability of the country to differentiate GMO and non-GMO finished products. This is creating unfair competition for the local industry as the country is promoting GMO tolerant industries in other countries by allowing importation of finished products with GMO ingredients. It is recommended that the country reconsiders its GMO policy position to maximise its agro-technological absorption capacity, and hence improve farm gate incomes.

- v) Price support for unproductive farmers and administrative failures in the form of delayed payments will produce very little income gains for the farmers. It is therefore, recommended that such efforts be suspended for now pending successful implementation of productivity gains as given in (3) above. In order to balance the need to protect smallholder farmers and at the same time promote industry viability, Government should consider a two-tier maize marketing system similar to that which was under implementation during 1996. This allowed GMB to set floor and ceiling prices (stabilization). GMB would under the circumstances then be empowered to mobilize or procure maize grain at the ruling floor prices for building SGR stocks only, whilst on the other end private millers, traders and farmers were allowed to trade and import freely on the open market.

- vi) Protectionist policies such as import bans and high tariffs have negative long term effects and should be avoided. If the local market is to be protected from imports, the target should be on promoting importation of raw materials rather than finished products to support established agro-processing infrastructure, promote local industry, employment and the national tax base. In the long term, local industry will benefit from competition by continuously improving their capabilities and competency to match international standards, and be able to compete effectively in regional and international markets.

5.3 Recommendations for the Grain Marketing Board

- a. Government should streamline the levels of SGR such that it is pegged at much lower levels than 500,000 MT plus money equivalency of 436,000 MT. The level should be consistent with avoiding unnecessary handling and storage costs. Given the increased availability of grain in the world market through trade, the country should be focusing on holding stocks for buffer purposes, say for 1-2 months (for emergencies), a period that should be reasonable enough to allow government to mobilise from the world market. Given the population of 13 million people and the

monthly grain requirement of 10kgs/capital, the country will require maximum stocks of 260,000MT for a 2 month supply period. This is much lower than the current levels and compares favourably with other countries like Zambia with 300,000 MT, and Malawi holding up to 140,000MT.

- b. The GMB should devise mechanisms to deal with the storage infrastructure that it currently holds in excess of its operations, a situation that is resulting in inefficiencies. The current initiative of leasing excess infrastructure to private players should be promoted to reduce inefficiencies and pressure on public funds towards maintaining the idle infrastructure. Further engagement of the private sector through joint ventures of public-private-partnerships (PPPs) through a Warehouse Receipt Systems (WRS) as proposed by MAMID to facilitate grain storage and trade in the country should also be considered

- c. The dependence on Treasury funding for SGR has proved unsustainable particularly as reflected by the delays in payment of farmers.. The emergency nature of food relief and price stabilization mechanisms calls for a dedicated Fund to guarantee availability of the basic commodity when needed. There is need to create a reliable Fund for the SGR through an approved statutory instrument such as the AIDs Levy to ensure that the SGR can be managed well to meet its objectives. Food security is a national security issue and this makes the obligations for SGR a public one.

- d. According to the Grain Marketing Act, maize is the only commodity considered as targeted and destined for accumulation under SGR facility. There is a need to diversify to other basic and nutritious commodities such as beans, small grains, cow peas, cassava and rice to avoid the risks of depending on one commodity and its limitation as an energy source only.

- e. In terms of management, there is a need to provide clarity to the public on the management of SGR and the GMB commercial unit. Clearly drawing lines of management and operations for the two will help in promoting accountability and transparency in running of the SGR.

Lastly, it should be noted that the policy recommendations articulated in this paper have taken full cognizance of the current high-level policy pronouncements under the CAADP, ZIM ASSET and the Draft Agricultural Policy Framework (2012-2032), with

particular reference to marketing They are therefore complimentary and set to buttress government intentions. Proposed interventions such as (1) reviewing and capacitating marketing institutions such as the GMB, (2) promoting private sector engagement in product and input supply markets (3) liberalized marketing and (4) using established infrastructure in the GMB to facilitate operationalizing the WRS should be considered to strengthen its viability.

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7.0 Appendices

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