A. Introduction

1. **Agriculture is a critical sector in the Zambian economy for providing jobs, growth, and livelihoods.** The agriculture sector is a source of food, employment, and income for more than 70 percent of the population. To enhance the sector’s potential in reducing poverty, the authorities have set out several agricultural policies and goals. The Eighth National Development Plan (8NDP) identifies the agriculture sector as one of the key national strategic areas that is critical in ensuring economic transformation and job creation. The key focus of economic transformation is industrialization premised on value addition in the agriculture sector and other relevant sectors. Specifically, the 2012 – 2030 National Agriculture Policy (NAP) goals include increasing the annual rate of growth of real crop GDP; increasing the value and growth rate of crop exports; contributing to the reduction of poverty, as well as ensuring food security among small-scale farmers.

2. **Government supports the agriculture sector primarily through the Farmer Input Support Program (FISP) and Food Reserve Agency (FRA).** The Fertilizer Support Program (FSP) was introduced in 2002 as a measure to contribute towards poverty alleviation under the Poverty Reduction Strategy Paper. During the 2009/2010 farming season, it was transformed into FISP (IAPRI, 2018; Chapoto, et al., 2016; Chapoto, et al., 2016; Funsani, et al., 2016). Through the Comprehensive Agriculture Support Program (CASP) under the 8NDP, the authorities aim at addressing challenges associated with FISP and envision increasing the agriculture growth rate per annum to at least 10 percent as well as increasing agriculture exports to above US$2 billion by 2026. The FRA was established in 1995 with the sole responsibility of administering the national food reserve (World Bank, 2021). Over the years, the function of the FRA has evolved into marketing and trading a designated agricultural commodity; purchasing, importing, selling, trading, or exporting a designated agricultural commodity; and establishing, managing, leasing, and maintaining a storage facility and equipment used in relation to a designated agricultural commodity.

3. **Climate change alongside policy implementation challenges are significant constraints to both production and productivity in the agriculture sector.** The largest proportion of farmers affected by climate change are small-scale farmers who mostly depend on rainfall for cultivation purposes. The threat has become even more pronounced over the years as the frequency and magnitude of droughts and floods has increased (IAPRI, 2021). As an improvement to the FISP and beyond, the CASP seeks to incorporate irrigation infrastructure as well as extension services to minimize the impact of climate change on the agriculture sector. Furthermore, policymakers

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1 Prepared by Bupe Chitumbo (Resident Representative Office)
2 [The Food Reserve Act, 2020 | National Assembly of Zambia (parliament.gov.zm)]
continue to put in place other adaption and mitigation measures such as climate smart agriculture (CSA) practices.

4. This selected issues paper seeks to provide an overview of the agriculture sector in Zambia with a focus on identifying constraints to production and productivity.

B. Contribution of the Agriculture Sector to the Zambian Economy

5. The share of the agriculture sector in GDP has declined over the past decade from 9.4 percent in 2010 to 3.4 percent in 2021. Over this period, the share of the industrial sector (including mining)$^3$ increased from 32.2 percent in 2010 to 42.5 percent in 2021 while the share of the services sector$^4$ decreased slightly from 52.8 percent to 49.9 percent (Figure 1). The decline in the share of the agriculture sector in GDP was primarily attributed to the variability in rainfall patterns as Zambia faced adverse weather conditions in the past (IAPRI, 2021; World Bank, 2019). Over the period, the average contribution of the agriculture sector to the GDP growth was small, at 0.1 percentage points relative to 2.8 percentage points and 1.3 percentage points from the service and industrial sectors, respectively. Episodes of sharp contractions in agriculture growth, notably in 2018 and 2015 were episodes of severe drought.

6. The agriculture sector is one of the main sources of employment in the country. However, over the last decade, employment in the agriculture sector decreased by 14.7 percentage points from 64.3 percent in 2010 to 49.6 percent in 2019 (Figure 2), mostly in the informal sector. The decline in employment could be attributed to the diminishing role of the private sector, especially commercial farming in the maize subsector (World Bank, 2022). The private sector has tended to invest in the agriculture subsectors, where there was less intervention by the government such as the seed industry (Box 1) (Chapoto, et al., 2016; World Bank, 2022; Kuteya, et al., 2020).

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$^3$ Industrial sector comprises the value added in mining, manufacturing, construction, electricity, water, and gas.

$^4$ Service sector consists of wholesale and retail trade, transport, and government.
Figure 1. Zambia: Agriculture Sector Contributions to GDP Growth, 2010–2021

Sector Share of GDP
(In Percent)

GDP Growth v. Agricultural GDP Growth
(In Percent)

Agriculture v. Other Sector Contributions to GDP
(In Percent)

Sources: World Development Indicators and IMF staff calculations
Box 1. The Role of the Private Sector in the Development of Zambia’s Seed Subsector\textsuperscript{1,2}

\textbf{Government policy in the agriculture sector is critical for creating a conducive environment for its development as well as its contribution to the economy and employment.} Seed policy reforms in Zambia have had a positive impact on the growth of the seed subsector. In the 1980s, the seed industry was predominantly controlled by a parastatal company, ZAMSEED. During this era, the seed industry was firmly under the control of the government, which determined how many or which seed variety was to be introduced. Evidence indicates that use of improved varieties (IVs) is an important ingredient to improved productivity of the agriculture sector. However, the role of the government in the seed subsector in Zambia was among the reasons for the low rates of varieties that were introduced at the time. The authorities would decide through a committee which variety would be useful for farmers and which should be permitted for distribution and sale. Also, low uptake of new varieties at the time could be attributed to the decline in funding of about 70 percent between 1985 and 1990 to research and extension services, which prevented the public sector from introducing new varieties. Other reasons that contributed to the low uptake of the IVs were price controls on food items and economic variables such as the fixed exchange rate.

\textbf{The limited variety of seed options, however, changed when policy reforms were undertaken, which put the subsector on a successful path.} The privatization drive that took place in the early 1990s led to the deregulation of the parastatal ZAMSEED as well as initiated the introduction of several legislations and amendments such as the Plant Variety and Seeds Acts of 1995, National Seed Policy of 1999, Plant Variety Protection Act of 2007, and endorsement of the COMESA seed trade harmonization regulations in 2015. The government played a critical role in facilitating the development of the seed subsector and actively interacted with diverse economic actors for its growth such as seed firms, food processors, consumers, cooperating partners and NGOs. Policy reforms introduced were backed by research and had been tried elsewhere.

\textbf{The country further adopted a system to standardize the quality of seeds and certified seeds that met the standard.} Post reforms, the incorporation of participants from the private sector has made the system more efficient and cheaper in regulating the quality and introduction of new seed varieties. Consequently, seed companies in the country – Zamseed, Pannar, Seedco, MRI, Pioneer, Monsanto and Kamano – are among the most reliable suppliers of quality seeds across sub-Saharan Africa. They satisfy both local and export markets. About 80 percent of seed supplied on domestic market is from the private sector whilst the remaining 20 percent is supplied by public companies.

\textsuperscript{1} Sowing Seeds of Success: A Regional Perspective on the Development of the Seed Industry in the COMESA Region (2020)

\textsuperscript{2} Seed Policy Reform in Zambia (2020)
7. The largest proportion of farmers, 1.5 million, are small-scale farmers who cultivate crops on a less than 20 hectares of land. The agricultural output from small-scale farmers represents about 80 percent of the domestic supply of grain. Many small-scale farmers tend to be poor and grow a limited crop variety as they do not have adequate resources to buy a variety of inputs. Therefore, the FISP is designed to distribute inputs at a subsidized price prior to the start of a farming season. Their farm produce, which is mostly maize, is then sold at a pre-set price to the FRA. Thereafter, the FRA sells the grain to both local and international markets. The preset price at which the FRA buys farm produce is designed to guarantee the price to producers as well as ensure a higher income for farmers (Chapoto, 2019).

8. There are over 3,000 commercial farmers, large and medium-scale farmers. Because of interventions from the FRA and FISP, many large and medium-scale farmers shifted away from maize production into soya beans, wheat, and other cash crops. For instance, the commercial farmers’ share of maize sales declined from 53 percent in 2003/2004 to 7 percent in the 2019/2020 agricultural season (World Bank, 2022; Chapoto, et al., 2016). Specifically, medium-scale farmers – those with 20 to 100 hectares of land - produce a more varied array of agriculture produce such as maize, soya, tobacco, and cotton. Similarly, large-scale farmers, those with over 100 hectares of land, produce diverse array of crops but mainly for export, including coffee, sugar, cotton, tobacco, and

5 2019 Rural Agricultural Livelihood Survey
6 2019 Rural Agricultural Livelihood Survey
maize. At the beginning of 2023, export earnings from agricultural products accounted for 19 percent of the non-traditional exports.\(^7\)

C. Constraints in the Agriculture Sector

9. **The key constraints in the agriculture sector include climate change, policy instability, and inadequate policy implementation.** Several studies as well as national policies and plans indicate that the sector is characterized by insufficient electricity supply, high cost of production, lack of credit, lack of market access, high pre-and post-harvest losses, low technology uptake, limited land rights, lack of crop diversification, high prevalence of pests and diseases, insufficient extension services, heavy reliance on rainfed production and other structural impediments. These factors contribute to the underdevelopment of the sector. In addition to the impact of climate change on the sector, country-specific policy issues are the main constraint. Successive national development plans (NDPs) have had a subdued impact on development outcomes due to the lack of adequate implementation. As a result, many agriculture constraints remain unresolved for prolonged periods of time and the sector underutilized (Chapoto, et al., 2016; Heusmesser,Christine; Kray, Helper, A, 2019; IAPRI, 2019; IAPRI, 2018; World Bank , 2022; World Bank, 2021; Ministry of Agriculture and Co-operatives, 2011; Ministry of Agriculture and Livestock, 2016).

10. **National agricultural policies have generally promoted the private sector as a key stakeholder in the development of the agriculture sector.** The NAP formulated for the period between 2004 to 2015 emphasized the role of market liberalization as well as promoted the private sector in developing the agriculture sector. The Government, however, remained a key stakeholder with the aim of ensuring that poverty among small-scale farmer was addressed. NAP2, covering the period between 2016 to 2020, focused on promoting the private sector as a key driver in the development of the agriculture sector. The basic premise of NAP2 was to ensure that farmers treated farming as a business, thereby encouraging profitability and competition. In promoting the growth of the sector, the policy emphasized the critical role of cooperatives.

11. **However, the private sector has not played a significant role in the agriculture sector due to limited policy implementation.** National agriculture policies identified several constraints on both the production and productivity side to ensure the development of the sector. On the productivity front, for example, the lack of investment in research and development, and weak extension services to farmers were identified as some of the impediments to the development of the agriculture sector. While on the production front, the lack of access to financing by small-scale farmers due to limited title deeds and low uptake of irrigation services by farmers were identified as constraints, among others. The limited implementation of policies to address the identified constraints has left the sector underutilized (Ministry of Agriculture and Co-operatives, 2011; Ministry of Agriculture and Livestock, 2016; Ministry of National Development Planning, 2020; World Bank, 2022).

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\(^7\) Zambia Statistical Agency: The Monthly Volume 239
12. **There is policy bias towards the production of maize. Maize is a relatively important crop under government support to the agriculture sector for strategic reasons.** The production level of maize increased over the last decade while yields remained largely the same. The increase in production was highly dependent on the amount of land area harvested, which was chiefly driven by climate considerations. At the same time this could be attributed commercial farmers were crowded out increasing the reliance on rainfed farming (IAPRI, 2021; World Bank, 2022). The stagnation in productivity persisted despite a policy bias encouraging the allocation of significant fiscal outlays in subsidizing the input and output markets over the period to boost production and productivity (Figure 3). The measures did improve food security at the expense of dietary and nutritional deficiencies, especially in rural communities where limited access to well-equipped food markets is prevalent (Chapoto, 2019; World Bank, 2022; Chapoto, et al., 2016; Heusmesser, Christine; Kray, Helper, A, 2019; Funsani, et al., 2016).

![Figure 3. Zambia: Maize Production vs. Productivity, 2011-2022](image-url)

**Figure 3. Zambia: Maize Production vs. Productivity, 2011-2022**

![Maize Production and Yield](image-url)

**Maize Production and Yield (in Thousand)**

- **Maize Production (tonnes)**
- **Maize Yield (hg/ha)**

![Maize Production vs Area Harvested](image-url)

**Maize Production vs Area Harvested (100 Thousand)**

- **Area Harvested (ha)**
- **Maize Production (tonnes)**

### FISP - Agriculture Budget Share

**FISP - Agriculture Budget Share**

**In Percent - Budget vs FISP Outturns**

- % OF FISP Budget to MOA Budget
- % OF FISP Outturn to MOA Budget

### FRA - Agriculture Share

**FRA - Agriculture Share**

**In Percent - Budget and FRA Outturns**

- % OF FRA Budget TO MOA Budget
- % OF FRA Outturn to MOA Budget

Sources: FAOSTATS, MoFNP and IMF staff calculations
Figure 4. Zambia: Children who are Stunted and Malnutrition, 2010–2020

Percentage of Children Under 5 Years of Age Who Are Stunted
(In Percent, modelled estimate)

Number of People Undernourished
(Million, 3-year average)

Prevalence of Undernourishment
(Percent, 3-year average)

Source: FAOSTATS
13. Studies demonstrate that diversification is critical in ensuring agroecosystem resilience and nutritional diversity. In many developing countries, the combination of high poverty levels and limited crop diversification predisposes small scale farmers to income uncertainty, high crop failure, and poor nutrition and health status. (Heusmesser, Christine; Kray, Helper, A, 2019; Chapoto, et al., 2016). In Zambia, for instance, the 2018 Demographic and Health Survey (DHS) indicates that 35 percent of children under 5 were stunted and 12 percent of children were severely stunted. Over the last decade, child stuntedness and malnutrition has reduced but remains elevated (Figure 4). The biased policy support towards maize production presents important health implications for people who depend on farming, as well as the poor. However, the extent to which diversification could be achieved is dependent on the proximity of ready markets, where farmers can easily access a variety of alternative food crops (Heusmesser, Christine; Kray, Helper, A, 2019).

14. Unpredictable trade policy further constrains growth of the agriculture sector. Studies reveal that Zambian policymakers tend to undertake unpredictable and ad hoc trade policy decision in the maize subsector, especially in times of shortages. More specifically, the frequent discretionary banning of maize exports has prevented the development of a reliable maize export base, and consequently led to perpetual limited access to markets for many farmers (Heusmesser, Christine; Kray, Helper, A, 2019; Chapoto, 2019; World Bank, 2022; World Bank, 2021). Despite the intentions of the government, the inconsistent policies in the grain market have tended to exacerbate the volatility of the maize price (Chapoto, et al., 2016). Furthermore, interventions by the FRA have not had the intended goal of increasing incomes for the poorest smallholder households. But discouraged investors from taking a long-term position in the sector, thereby limiting the development of the agriculture sector (Chapoto, et al., 2016; Chapoto, et al., 2016; World Bank, 2022).

D. Climate Change and Agriculture Sector

15. The agriculture sector is dominated by small-scale farmers who primarily rely on rainfed production. In the past decade, major episodes of reduced production and productivity in the country have been linked to adverse weather conditions such as flash floods and droughts (IAPRI, 2021). The resulting low agricultural production and productivity engender deforestation as farmers opt to clear more land to maintain or increase production and their income levels. In 2021, for example, the annual deforestation rate in Zambia was estimated at 300,000 hectares per year, which was among the highest in the world. Deforestation associated with agricultural activities is a significant contributor to greenhouse gas (GHG) emissions after charcoal production. Increased GHG emissions exacerbate the impact on the agriculture sector via unpredictable weather patterns in the long term. The impact on rainfall patterns within the country has been projected to be uneven depending on the region (World Bank, 2019). Climate change will therefore continue to be a major constraint to the development of the agriculture sector.
Figure 5. Zambia: Annual Maize Production by 2050, 2012–2050

**Crop Yield**
(Tonnes per hectares)

- **Towards Sustainability**
- **Business As Usual**
- **Stratified Societies**

**Number of Harvests Per Year**
(Quantity)

**Arable Land**
(Hectares)

Sources: FAO, 2018. The Future of Food and Agriculture - Alternative Pathways
16. **If left unmitigated, the susceptibility of the agriculture sector to climate risk will adversely impact livelihoods.** Climate change is already making it more difficult to alleviate poverty levels among small-scale farmers. The Food and Agriculture Organization (FAO) projections indicate that by 2050 more Zambian arable land will be required for producing maize per annum as the number of maize harvests per arable land in a year will decrease and there will be insufficient increases in maize yields.\(^8\)\(^9\) FAO designed three alternative scenarios to reflect various degrees of challenges for equitable and sustainable production: business as usual, towards sustainability and stratified societies (Figure 5). In addition to the decreased ability to produce crops per annum, FAO projections indicate that food insecurity will be worse under the business as usual and stratified societies scenarios than the towards sustainability as indicated by the prevalence of persons who would be undernourished by 2050 (Figure 6). More recent work suggests that maize productivity in Zambia could be boosted by adopting climate smart agriculture practices such as reducing post-harvest losses, conservation agriculture, agroforestry, minimum soil disturbance and residue retentions (World Bank, 2019).

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\(^8\) FAO assumed that the towards sustainability scenario would be associated with lower yields than those under the business-as-usual scenario due to limited research information on sustainable production methods.

\(^9\) The number of crop harvests on arable land per year is the ratio of harvested area to arable land each year. When the ratio is 1, it implies multiple crops per year on the same arable land; values below 1 indicate that crops were not harvested in all arable land due to various reasons, including climatic conditions.
17. Zambia has several policies in place to support adoption of climate friendly methods in the agriculture sector. The authorities ratified the United Nations Framework on Climate Change (UNFCC) in 1993 and signed the Kyoto Protocol in 2006. In 2010, the National Climate Change Response Strategy (2010) stressed the importance of ensuring that land is sustainably used in enhancing the country’s food security. As a response to the Paris Agreement in 2016, the country developed the National Determined Contributions (NDCs) and pledged to reduce GHG emissions by 25 percent under the case where there was no significant international financial support. It further committed to a 47 percent reduction in the case where there was substantial international support relative to the 2010 base level across different sectors. Conditional on availability of funding, sectors that qualify for the pledged 38 M_t \( \text{CO}_2 \) e emission reduction includes agriculture, forestry, and other land use, among others. Overall, the NDC has been a key ingredient in design of policies that promote climate friendly agriculture such as the National Forestry and Wildlife Policy, the National Climate Change Policy, National Disaster Management Policy, and the second National Agriculture Policy, which is currently being reviewed.

18. Furthermore, an attempt has been made to ensure that climate change and agriculture policies are integrated into the national development planning process. Planning for climate smart agriculture (CSA) is critical in ensuring that trade-offs are minimized, and synergies enhanced among CSA pillars: productivity, adaption and resilience, and mitigation (CIAT; World Bank, 2017). In 2022, NDCs were integrated in line with several strategies under the 8NDP including the Strengthen Climate Change Mitigation and Strengthen Climate Change Adaptation strategies, where CSA practices are embedded. CSA provides a way for improving the integration of agriculture development and climate responsiveness (CIAT; World Bank, 2017). As previously discussed, there are several CSA practices that show great potential for welfare and sectoral development in Zambia. Evidence indicates that in the long-term CSA practices do have a material positive impact on the welfare of households, but effects are uncertain in the short term (World Bank, 2019; Heusmesser, Christine; Kray, Helper, A, 2019).

19. The outlined strategies under the 8NDP proposes programs such as the Sustainable Agriculture Promotion, and Sustainable Agriculture as key vehicles in adapting to climate change. Successfully implementing CSA practices under 8NDP programs would present significant opportunities, including greater resilience to climate variability and extremes, improved soil health and fertility, increase in crop yield, and improved crop quality. However, there are also significant risks to adapting CSAs due to agroecological conditions. For instance, some CSAs might perform better under wet than dry conditions. To this effect, the risks would include drought and other weather-related risks, increasing temperatures and changes in rainfall patterns, pests, and diseases. It is therefore paramount for the authorities to note that the risks and opportunities for adapting CSAs are crop and geographic specific (World Bank, 2019).

20. The lack of adequate funding for implementing climate friendly projects has resulted in low adoption of CSAs in the adaption and mitigation of climate change. Despite these policy commitments, adoption of CSA has been limited by the absence of adequate financing as well as the lack of markets, and capacity building such as extension services (CIAT; World Bank, 2017; World
Policymakers require funds from both international and local institutions for the successful mainstreaming and implementation of CSA practices. For example, the Community Market for Conservation project has improved crop yields in Eastern Province by training small-scale farmers in CSAs and providing markets for their output. Earmarking public financing for such projects is critical in creating incentives that attract more funds from the private sector and cooperating partners. Private sector financing could further be used to promote, develop, disseminate, monitor and evaluate, and coordinate CSA practices that are already being utilized (CIAT; World Bank, 2017).

E. Farmer Input Support Program (FISP): Implementation, Outcomes, and Challenges

21. FISP uses direct input supply (DIS) to distribute subsidized inputs to small-scale farmers. Like many agricultural input support programs in Africa, the objective of FISP is to help raise rural incomes and alleviate poverty by subsidizing fertilizer and seeds which would help to raise production and productivity. Under the DIS, each selected beneficiary farmer, normally part of a cooperative, is given one input pack consisting of a 10kg bag of maize seed and 6 bags of fertilizer after depositing K400 towards the subsidy program. To diversify crop production, the authorities also give to the selected farmer either a 25kg bag of soya beans seed or 20kg bag of groundnuts seed.

22. However, FISP has been associated with several challenges and has been very costly. Implementation challenges include late delivery of inputs; standardized distribution of inputs that may not be appropriate for some agro-ecological zones or soil types; crowding out of private sector; and poor targeting. The combination of these shortcomings promotes inefficiency and induces higher avoidable fiscal cost (Funsani, et al., 2016; World Bank, 2021). Regarding fiscal costs, of the funds allocated to the agricultural sector, most have been diverted to the input subsidy program. In many cases, the actual expenditure exceeded planned expenditure (Figure 7). This occurrence was necessitated by the inherent deficiencies and wastage in the program design, for example, about 30-35 percent of the time the fertilizer input did not reach the intended beneficiaries (World Bank, 2021). This coupled with non-transparency in the conduct of tendering processes and governance issues have had a significant drain on the treasury (Chapoto, 2019; World Bank, 2021; IAPRI, 2019; IAPRI, 2018).

23. Overall, the FISP has not fully met its objectives. The program has been critical in ensuring self-sufficiency in the production of maize, and thereby contributing to improving food security in the country. Nonetheless, dietary limitations and nutritional deficiency remain elevated (Chapoto, et al., 2016; Chapoto, et al., 2016; IAPRI, 2019; Heusmesser, Christine; Kray, Helper, A, 2019). The squeezing out of the private sector due to subsidies in the input and output markets, especially in the maize subsector has also increased the agriculture sector’s exposure to climate change shocks. Thus increased the likelihood of crop failure and income uncertainty for many small-scale farmers (Funsani, et al., 2016; World Bank, 2021; Chapoto, et al., 2016; Heusmesser, Christine; Kray, Helper, A, 2019).
Figure 7. Zambia: FISP Budget vs Maize Production, 2014–2022

Growth in FISP Budget vs Growth in Maize Production
(In Percent)

MOA Budget to National Budget Share
(In Percent)

FISP to MOA Budget Share
(In Percent)

Sources: MoFNP and IMF staff calculations
F. Food Reserve Agency (FRA)

24. The FRA purchases three main crops: maize grain, soya beans and paddy rice. However, maize grain constitutes the largest proportion of total purchased crops. The agency also engages in crop sales either locally or in the export market. Crop sales on the domestic market include maize sold to millers, the Disaster Management Mitigation Unit, Ministry of Education, World Food Programme, as well as community sales and releases to millers under subsidized prices. On the export market, maize grain is mainly exported to Zimbabwe, the Democratic Republic of Congo, Mozambique, and Namibia.

![Figure 8. Zambia: FRA Budget vs Maize Production, 2014–2022](image)

Sources: MoFNP and IMF staff calculations
25. **The optimal strategic food reserve for the country has been set at 500,000 metric tons of grains.** The FRA releases some stocks during emergencies and disasters and intervenes in the market to correct perceived price distortions. Some studies estimates that losses from the managements of storage facilities range between 15 to 30 percent of the purchased grains. The losses are unavoidable due to existing inadequate storage facilities. The extent of losses depends on whether the minimum recommended threshold of 500,000 metric tons has been exceeded. The greater the excess, the higher the incurred loss (World Bank, 2021; IAPRI, 2021). The cost associated with storing and releasing grains grew at a rate of 83.3 percent while maize production contracted by 2 percent between the period 2014 to 2021. However, the authorities continued to spend considerable amounts on FDA with outturns often higher than budgeted amounts (Figure 8).

26. **Operations of the FRA to stabilize the grain markets have been created distortionary effects.** Interventions by the FRA have contributed to limiting the development of the agriculture sector. Evidence has shown that the way the FRA conducts its price stabilization function tends to crowd out private sector participation and thus displaces investments required to enable the growth of the sector. This could be due to several reasons, including the way the FRA executes its role of buyer of last resort and it being the largest buyer in the market (World Bank, 2021). Therefore, the FRA position dictates market dynamics in the output market through many channels. For example, the intervention of the agency tends to distort the prices in a way that makes it difficult for private sector participants to generate adequate profit margins to incentivize them to continue operating. Consequently, businesses are discouraging from operating due to uncertainty arising from FRA activities (Chapoto, et al., 2016; Chapoto, 2019; World Bank, 2021; World Bank, 2022).

**G. Agriculture Policy Reforms**

27. **The Comprehensive Agriculture Support Program aims to raise productivity, attain climate resilience, and increase output for regional export markets.** The CASP is one major reform that has been put forward to address shortcomings of the FISP. The CASP is outlined in the 8NDP, 2023 - 2025 Medium Term Expenditure Framework (MTEF), and the two most recent national budgets. The CASP will fully transition the input subsidy program to the e-voucher modality over a three-year migration path by the 2025/2026 farming season. In the 2023/2024 farming season, the authorities will start with 43 districts that have over 80 percent 3G/4G network coverage and a developed agro-dealership network. Out of the 43 districts, inputs for the top 10 maize producing districts will be procured under the DIS but redeemed through the e-voucher to safeguard food security (Ministry of Agriculture, 2022).

28. **The e-voucher is more efficient and offer more flexibility.** In terms of flexibility, beneficiaries are able to buy farming apparatuses, and the preferred fertilizer and seeds that are required for crop production given their local circumstances. Whilst those in the livestock and fisheries production could use the proceeds to purchase their chosen livestock and fisheries inputs. This feature provides an enabling environment for the growth of the private sector through agro-dealing as well as for promoting greater diversification within the sector. Most importantly, the cost burden on the treasury is much lower as there are no costs associated with tendering, transportation, storage, and handling. Many studies have shown that savings from the reduced cost
associated with implementing the electronic platform could be diverted to other high yield agriculture programs (Chapoto, et al., 2016; World Bank, 2021). The resultant savings from the DIS migration to e-voucher could also be diverted to support the buying of agricultural apparatus and equipment, fund other social transfer programs and construct irrigation infrastructure like the drip system for small-scale farmers (Chapoto, et al., 2016; IAPRI, 2018).

29. **The Comprehensive Agriculture Support Program was first proposed in the 2022 National Budget for implementation in the 2022/2023 farming season.** The 2022 budget was formulated before the finalization and approval of the 8NDP. The budget identified how climate change has contributed significantly to the decline in production and productivity. And further explained how climate change and the limited access to the market by small-scale farmers needed attention. Like the 8NDP, it suggested measures that would address inhibiting factors to the growth of the agriculture sector as well as how to ensure crop diversification.

30. **Furthermore, the 2023-2025 MTEF indicates that the agriculture sector will expand due to efficiency gains arising from how well the Comprehensive Agriculture Support Program is implemented.** The MTEF outlines several factors as being key in unlocking the agricultural sector. The resolve to implement annual budgets in line with reforms outlined in the MTEF would eventually allow farmers to have access to ready markets at both local and international level. For instance, the 2023 budget stresses the importance of implementing the CASP under the e-voucher mainly due to several benefits such as cost efficiency and effectiveness. The full implementation of reforms under the e-voucher will also ensure that all beneficiaries receive an equal value of inputs as well as promote the diversification of crops harvested. To support diversification, the national crop diversification strategy is currently being developed to enhance production and productivity of other agricultural commodities.

31. **To ensure a successful implementation of reforms, several factors need to be addressed.** Evidence indicates that successfully implementing CASP requires: allowing input vouchers to be spent on a wide array of inputs at a dealer of choice; allowing sufficient time for the release of funds; funds earmarked for internet; beneficiary contributions to be made throughout the year; training time for CASP user manual; undertaking adequate sensitization on the availability of various inputs; ample time for adequate screening and registration of agro-dealers; and educating beneficiaries on different seed varieties, fertilizer types and its suitability, and soil quality in their locality. The identification of champions within the ministry responsible for implementing the input subsidy program could significantly contribute to the successful implementation of the CASP (IAPRI, 2018; IAPRI, 2019; World Bank, 2021; Ministry of Agriculture, 2022).

32. **Furthermore, the proposed phased migration path is appropriate as it would ensure a conducive environment before transitioning to the e-voucher.** Before fully launching the e-voucher, clear planning strategies have to be put in place on how to: attract input suppliers, install necessary infrastructure, and build capacity among small scale farmers; generate information on soil types in an area and the fertilizer to be applied through the set-up of a nation-wide mapping system; and suggest eligibility rules that would ensure that smallholder farmers not benefiting from the current input program based on scale are transferred to other appropriate transfer program.
Lastly, a proper and well-functioning monitoring system should be established that would allow for greater information gathering and analysis of program implementation, costs and impacts to aid policy and decision making. For this system to work well, authorities should consider collaborating with beneficiary farmers (IAPRI, 2018; Chapoto, et al., 2016; World Bank, 2021).

33. **Augmenting climate smart agriculture will boost agriculture productivity and enhance climate resilience.** However, the lack of significant financing and technical support might prevent the implementation of many CSA practices (World Bank, 2019). In the recent past, for instance, the adoption of CSA practices in Zambia have been partial, and in some cases dis-adoption rates of as high as 95 percent (CIAT; World Bank, 2017). The institutionalization of CSA could also be paramount in improving the integration of agriculture development and climate responsiveness. Such an integration could be enhanced by the creation of incentives that would reward farmers for adopting climate friendly farming practices in achieving food security and broader development goals under a changing climate and increasing food demand (Heusmesser, Christine; Kray, Helper, A, 2019; World Bank, 2019).

34. **To fully utilize benefits of reforms, the authorities would need to ensure that there are accompanying reforms in the agriculture product market via the Food Reserve Agency.** To complement reforms to FISP, the FRA might consider putting in place clear trigger mechanisms for how grains are purchased and released (World Bank, 2021; Chapoto, et al., 2016). As this would ensure that only purchases required for strategic reserves are undertaken in areas where little or no crowding out of the private sector would take place. Considering the current price disparity that exists between Zambia and its neighboring countries, the country could benefit from exporting the excess maize grains. For example, the difference in maize price of above US$300\(^\text{10}\) per ton between Kenya and Zambia could more than offset cost in transportation. Therefore, the FRA reverting to the original mandate of only providing strategic food reserves is critical in creating room for private sector participation. The private sector could play the role of exporting the excess grains to countries in the region as well as bearing the cost of grain storage, thereby reducing the fiscal implications on the treasury. The savings generated from reforms could be channeled to support other programs within the agriculture sector (World Bank, 2021).

\(^{10}\) African Regional Market Observatory Initiative (squarespace.com)
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