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EXECUTIVE BOARD MEETING

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June 30, 2023

To: Members of the Executive Board

From: The Secretary

Subject: **Zambia—Selected Issues**

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INTERNATIONAL MONETARY FUND

ZAMBIA

SELECTED ISSUES

June 30, 2023

Approved By
The African Department

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BOOSTING SUSTAINABLE GROWTH[1]

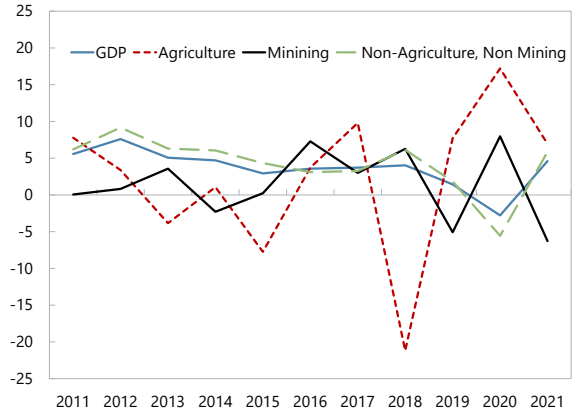
A. Introduction

1. Zambia's economy is highly dependent on mining and agriculture, but despite its abundant resources, growth has been insufficient to lift its young and growing population from poverty. In the decade ending in 2021, growth averaged 3.7 percent, with high volatility in mining and the weather-dependent agricultural sector. Excessive borrowing to finance inefficient public investment projects did little to boost Zambia's growth potential and exacerbated its macroeconomic imbalances. The COVID-19 pandemic hit growth even further, contributing to the country falling into debt distress, defaulting on its Eurobonds in November 2020 while also accumulating arrears to other creditors. The new administration that came into power in 2021 has committed to restoring macroeconomic stability as a precondition for sustainable growth, and to focus on inclusive growth beyond the traditional sectors. This selected issues paper assesses the growth performance of the last decade in traditional and nontraditional sectors, and whether the establishment of Special Economic Zones (SEZ) has helped boost growth and employment. It finds no evidence of a strong contribution to growth from SEZ despite the fiscal incentives awarded to companies operating in them. The paper also simulates the growth impact of investing in education and health (assuming the investment would lead to Zambia reaching the median of lower middle income countries performance in education and health indicators over time) and finds a positive impact to growth from that investment that is sustained over time. If paired with a boost in private investments (stemming from restored macroeconomic stability, improvements in business climate and governance) the model finds that growth would be 0.5 percentage points higher than otherwise from 2032 and sustained going forward.

B. The Main Growth Drivers of the Past Decade

2. In the decade ending in 2021, Zambia's growth averaged just 3.7 percent, with a downward trend and high volatility, especially in its primary sectors of mining and agriculture. Despite the government's focus on these two sectors, traditionally the pillars of the economic activity, their combined average contribution in real growth over the decade, was a modest 0.2 percent, with large fluctuations in annual performance. Mining activity, the largest recipient of foreign direct investment (FDI), suffered from a drop in inflows, especially after 2013, as changes in tax policy and an

Figure 1. Zambia: GDP Growth Rates in Mining and Agriculture
(In percent)



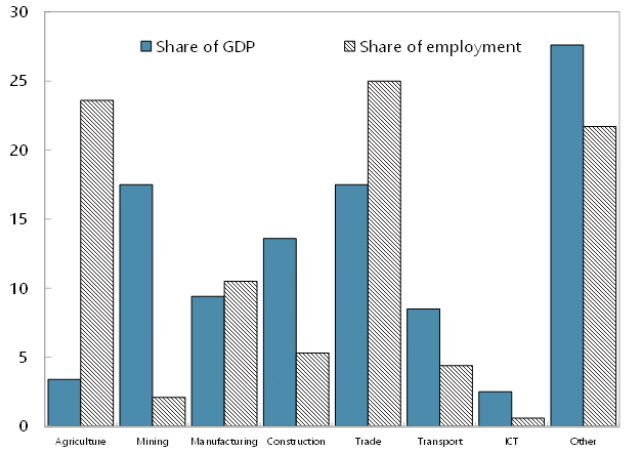
Source: IMF staff estimates

[1] Prepared by Linda Spahia with inputs from Jorge Guzman (all AFR).

increasingly unfavorable macroeconomic environment reduced appetite for investment. Agriculture, oriented largely on food security and a few staple crops, is highly vulnerable to climate shocks, like droughts and floods (Figure 1). Despite the government's very expensive subsidy programs to support the purchase of seeds and fertilizers, the sector remains focused mostly on subsistence level farming. Land productivity and water use efficiency are low, with most agriculture production being rain-fed, despite Zambia's natural advantage of having some of Africa's most fertile lands.

3. Zambia's economy has a low level of diversification and low rates of employment. Overall, four sectors: mining, agriculture, trade, and construction contribute towards half of GDP and 56 percent of employment (Figure 2). The participation rate in the labor force is low and only 31 percent of the working age population is employed.[2] The capital-intensive mining sector, the prime export earner (securing over 70 percent of export receipts) contributed 17.5 percent of GDP in 2021 but only 2 percent of employment. By contrast, agriculture is high in labor intensity (24 percent of total employment) but with low productivity (the contribution to GDP was 3.4 percent in 2021).

Figure 2. Zambia: Sectoral Contribution to Growth and Employment in 2021
(In percent)

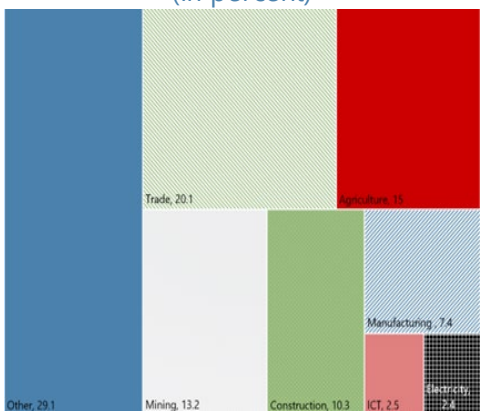


4. The most vibrant growth sectors have been services. Trade, the largest sector contributing 1/5 of GDP, grew on average by 4.2 percent in the decade ending in 2021, with an average contribution to real growth of 0.8 percentage points. The fastest growing sector over the last decade has been information and communication (ICT), which despite its modest share in the overall economy (at 2.3 percent at market prices in 2021), has an outsized contribution to growth (an average of 0.6 percentage points during the decade 2011–2021) (Figure 3 & 4).

5. Growth showed strong correlation with private investment in the past decade, while the link with public investment does not appear as strong. The surge in public investment since 2015, did not compensate for the drop in private investment. While the increase in public investment spending, especially in infrastructure had a significant impact in the growth of the construction sector during this period, there is limited evidence that these large-scale investments paid for by excessive borrowing, brought value for money or had any lasting impact in growth (Figure 5). Weak public investment management processes across institutions in the project selection, appraisal and execution phase and governance issues have eroded the efficiency of public investment and the government's ability to meet its development objectives in a sustainable way.

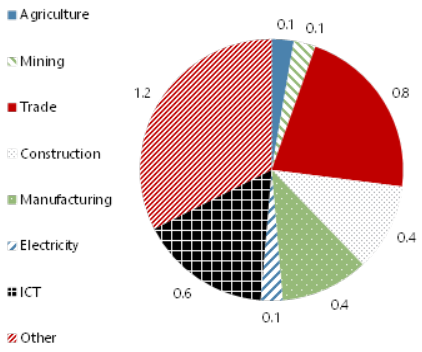
[2] According to the 2021 Labour Force Survey Report by Zamstat the working age population (15 and older is 10 million, of which only 3.1 million are employed.

Figure 3. Zambia: Average Share of GDP, 2011–2021
(In percent)



Sources: Zamstat and IMF staff estimates

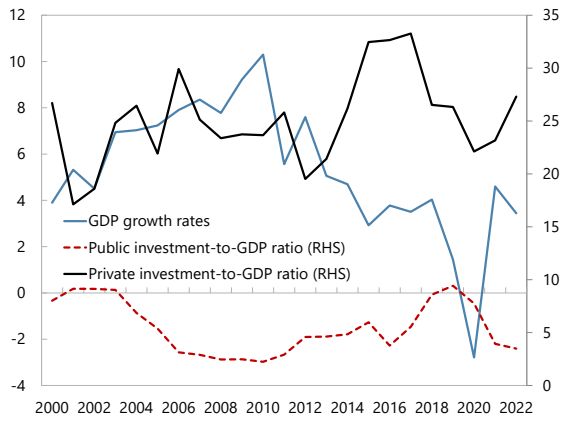
Figure 4. Zambia: Average Contribution to Real GDP Growth, 2011–2021
(In Percent)



Source: Zamstat

6. Growth has been insufficient to address Zambia's high levels of poverty and inequality. More than 60 percent of Zambia's population lives below the international poverty line compared to 35 percent across Sub-Saharan Africa[3] (Figure 6). The reach of the government-funded safety net is limited and despite the rapid expansion of the social cash transfers program over recent years, the needs are vastly higher.[4] There are limited employment opportunities, and even among those employed only 27 percent are in formal employment (i.e. with social security coverage)[5]. The differences in income between rural and urban areas and between regions remain pronounced, despite government's efforts to spread growth and development across the country through the promotion of special economic zones. Lusaka and the mineral rich Copperbelt province contribute over half of GDP, while the other eight provinces combined contribute the rest. The prevalence of

Figure 5. Zambia: GDP Growth, Public and Private Investment
(In percent)



Source: IMF Staff estimates

[3] The latest available data for Zambia from the World Bank World Development Indicators are for 2015

[4] According to the 8th National Development Plan, (pg. 15) the number of beneficiaries of the social cash transfer program increased from less than 3000 beneficiaries in 2006 to around 881,000 in 2021.

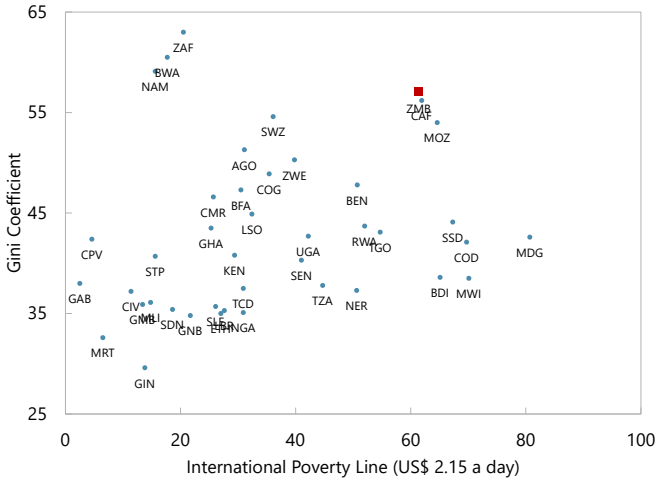
[5] According to data from 2021 Labour Force survey, the number of people in formal employment is 0.8 million, out of the total number of people employed of 3.1 million.

poverty is higher in rural areas and the unemployment rate for women and the young is much higher than the national average.[6]

7. Energy infrastructure gaps impede the takeoff of private investment. The electricity sector is weather dependent and in need of investment to meet increasing demand. Load-shedding is frequent, due to the high reliance on hydro-generated electricity and tariffs that have been below cost recovery for too long to allow sufficient investment in new capacity and to diversify from hydro-generated electricity.[7] While the direct impact of electricity generation on growth has been limited (on average 0.1 percentage point over the last decade) its indirect impact on growth through lack of widespread access and insufficient provision have hampered growth prospects much more.

Figure 6. Zambia: Poverty and Inequality in Sub-Saharan Africa

(International Poverty Line and Gini Coefficient, latest available data)



C. The Role of MFEZs in Investment and Employment

8. To address infrastructure gaps and attract new investment, Zambia adopted a government program to establish special economic zones since the mid-2000s. Since then, a total of 4 multi-facility special economic zones (MFEZ) and two industrial parks (IP) have been established[8], and twice as much are in the pipeline. However, the MFEZ-s have not generated the growth or jobs the government hoped they would, with many companies operating within the zones, identifying the same deficiencies as those outside it. A 2021 joint monitoring exercise by the Zambia Development Agency (ZDA) and the Ministry of Finance and National Planning of a sample of companies which had been granted fiscal incentives highlighted poor infrastructure, with electricity provision, limited road access as the key challenges to their activity. Other issues highlighted were land ownership within MFEZs/IPs, delays in getting VAT refunds, and access to

[6] According to the 2021 LFS report, the unemployment rate for the young is 17.4 percent (21.2 for young women) versus the 11.4 percent for the national average.

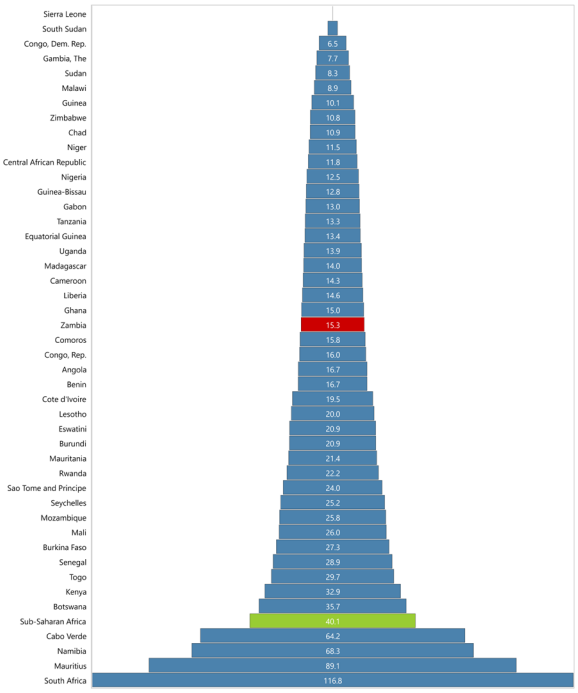
[7] In April 2023, the regulatory board adopted a 5-year framework to get to cost reflective tariffs.

[8] The main definitional difference between a Multi-Facility Economic Zone and an Industrial Park, is size, with industrial parks being less than 1000 hectares in surface.

finance.[9] Other hindrances, relate to administrative delays and barriers in getting various licenses and permits.

9. Zambia has granted a multitude of fiscal incentives to companies within special economic zones as well as to other companies in priority sectors. Companies operating within MFEZs benefit from zero taxes on profits and dividends for five years; a reduced corporate income tax (CIT) rate for the next five years of operation; zero-rated import for raw materials, supplies, machinery and equipment and no withholding taxes on management fees. The threshold for investing in MFEZs is US$50,000 for domestic companies and US$500,000 for foreign companies.[10] Fiscal incentives are not limited to MFEZs only: companies operating in agriculture, manufacturing, tourism, and export-oriented companies, also benefit from various incentives and are subject to different CIT rates. The 2021 monitoring report from ZDA and MFNP reported that most companies surveyed deemed the incentives as not sufficient, while asking for a better quality of infrastructure and services.

Figure 7. Domestic Credit to Private Sector
(In Percent of GDP, 2016–21 Average)



Sources: World Bank World Economic Indicators, IMF staff calculations

10. The MFEZs have not met expectations when it comes to either realized investment or employment. Investment realized within MFEZs in 2021 were 11 percent of the total private

[9] Report on the Monitoring of Companies Granted Incentives under the Zambia Development Agency Act, March 2021.

[10] The threshold for investment was doubled for foreign companies to US$1m in 2023.

investment in the economy, while jobs created represented 1 percent of the total in the economy (2 percent of the private sector jobs). Moreover, it is difficult to establish whether these investments were brought in because of the MFEZs or they have simply relocated from elsewhere in the country to benefit from more favorable incentives. Despite an increase in the level of investment in 2021 compared to 2020, actualized investment was only at 23 percent and 30 percent respectively versus the pledged levels.[11] Manufacturing is the sector that has invested and provided the most jobs within MFEZs.

11. Fiscal incentives alone have not proven sufficient to compensate for other underlying issues that have impeded investment. The foregone revenue could have potentially been used to address the infrastructure needs. By the same token, financing infrastructure projects alone is not a guarantee that private investment will follow, as the past drive in inefficient public investment projects financed by excessive borrowing showed.

12. Addressing the key barriers to an inducive business climate remains key. Businesses, including those in the MFEZs identify the same bottlenecks to growth: access to markets (road and transport infrastructure), reliable supply of electricity, streamlined procedures and a more efficient and corruption-free public administration, predictable fiscal policies and timely VAT refunds, and access to finance. The credit to GDP ratio in Zambia is less than half the average for Sub-Saharan Africa (see graph), with interest rates remaining prohibitively high (above 20 percent, see Financial Sector SIP).

D. A New Approach to Boosting Growth

13. The new government which came into power in 2021 adopted a new approach to growth, focusing first on restoring macroeconomic stability as the precondition to sustainable growth. Supported by the Fund's ECF arrangement approved in August 2022, Zambia embarked on sizeable fiscal consolidation, by eliminating untargeted and inefficient subsidies, and scaling back on inefficient investment projects, while at the same time providing more targeted support for the most vulnerable through its cash transfer program and importantly, by prioritizing investment in education and health.

14. Improving the business climate is the cornerstone of the government's strategy to support private-led growth. A public-private dialogue forum was established in April 2022 to serve as a platform for identifying and tackling the main barriers to doing business in different sectors between the highest levels of government and private sector representatives. Creating regulatory certainty and simplifying licensing procedures in some subsectors (i.e. tourism) is already underway. While most of the focus still remains on priority sectors like mining, agriculture and energy, there is a more comprehensive approach for creating growth opportunities beyond the traditional sectors by supporting green initiatives and investment in human capital.

[11] ZDA 2021 Annual Report, pg. 15.

15. Rule of law and fighting corruption have also been highlighted as key to improving the business environment. The government has committed to address weaknesses identified in the IMF's Diagnostic Report on Governance and Corruption[12] in the areas of (i) anti-corruption and anti-money laundering (ii) fiscal governance (iii) contract enforcement and property rights (iv) central bank operations and (v) financial sector oversight. The report provides a roadmap of the main reforms needed to improve governance and increase accountability and transparency. A new public debt law that increases parliament scrutiny and transparency of contracted debt and a new central bank law has already been approved, and high-profile audits and investigations on the misuse of public funds are ongoing.

16. Education and health are the new priorities. The government extended free education to secondary schools and increased the number of teachers by over 30,000 with an additional 4,500 planned to be added in 2023, with priority for deployment given to the rural areas, where the needs are higher. Vulnerable children are entitled to receive bursaries. However, the expansion of free education up to the end of grade 12 has increased the number of students beyond classroom capacities, highlighting the need to complement the reform with investment in school facilities and the improvement of the quality of education. In the health sector, the government recruited 11,000 new health personnel in 2022 with an additional 3000 to be hired in 2023. The government has invested more in the procurement of drugs and is investing in health facilities across the country.

17. Investing in education and health will help in growing human capital and boosting long-term growth. Modelling the impact of investing in education and health over the long run, shows that each improvement in education and health indicators yields positive growth returns. The model shows that the most effective measure in term of growth yields is the increase in years of schooling. The most impactful boost to growth (by 0.5 percentage points by 2023) is yielded when the education and health improvements are complemented by an increase of private investment (a simulated 10 percent compared to current levels). These results shows that the government strategy to improve the business climate and invest in human capital, will yield the growth dividends for Zambia.

[12] Zambia, Diagnostic Report on Governance and Corruption, July 2022, IMF

Box 1. Zambia's Growth Dividend from Investing in Education and Health

The long-term growth impact of investing in education and health is simulated using a long-term growth model. The World Bank's Long Term Growth Model (LTGM)[1] is used to simulate the impact on long-term growth in Zambia from improvements in human capital through improvements in education and health indicators. For education two indicators are used: quantitative improvements (years of schooling) and qualitative improvements (normalized test scores). For health, two indicators are used, (i) the adult survival rate (ASR): the fraction of current 15-year-olds who would survive to age 60, assuming that the current age-specific mortality rates apply throughout their lifetime; (ii) the child stunting rate, measured as the fraction of 5-year-old children with a height more than two standard deviations below the median. The simulation assumes that other growth drivers, besides human capital, continue at their historical trend rates.

It is assumed that Zambia will gradually close the gap between its current education and health indicators with the median for lower middle-income (LMI) countries. The LTGM is based on the Solow-Swan growth model, adapted to developing/emerging economies. An extension, based on the World Bank Human Capital index, allows for an analysis of the long-run growth effects of improved learning quality and health outcomes. We estimate the impact of an improvement in each education and health indicator separately and then jointly. As economic reforms take place in Zambia from the 2023-2028 period, TFP growth peaks in 2028 to 2% and then returns to its long-term average of 0.5% by 2050 which causes GDP growth to peak and then fall throughout the long-term simulation.

Boosting years of schooling is the most impactful reform. The model shows that if years of schooling improve from the current level of 8.8 years to the 50th percentile of LMI economies (10.5 years), it would yield increases in human capital growth of 0.25 percentage points and GDP growth by 0.17 percentage points over the 2023-50 period. The full impact is achieved by 2035, when today's children join the work force, while there is a partial impact in the period 2025-2035, as incremental improvements in years of schooling are realized. Health improvements also have a positive impact on growth. Combined, the two health indicators add almost 0.11 percentage points to human capital growth over 2023-50 and 0.07 percentage points to GDP growth over the same period.

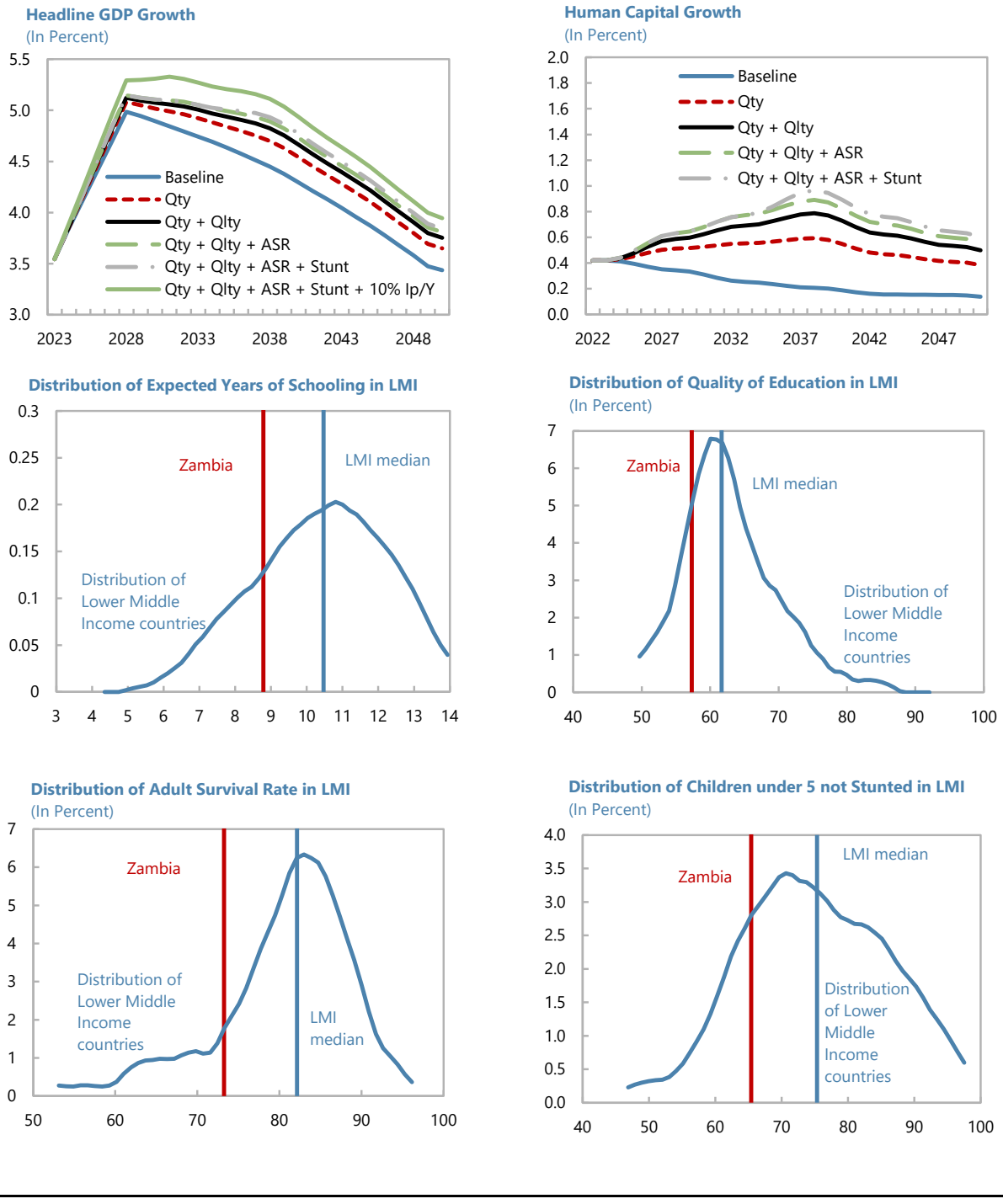
To capture the impact of an improved business climate we also simulate the growth impact of higher private investment. By increasing private investment by 10 percent by 2030 compared to the business-as-usual scenario, the growth rate would improve by 0.13 percentage points on average from 2023-2032 and by 0.15 percentage points thereafter.

The combined impact of improvements in health, education and increased private investment would boost GDP growth by 0.5 percentage points starting in 2032 and be sustained going forward. The growth impact occurs in 2032 as the generation of children that have achieved better education and health outcomes enter the labor force. The model shows that impact of a higher growth rate would carry on until 2050, illustrating the yields to growth to be sustainable over time.

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[1] Loayza, Norman V. and Steven Pennings. 2022. *The Long-Term Growth Model: Fundamentals, Extensions, and Applications*. Washington, D.C.: World Bank Group

Figure 8. Zambia: Improvements in Human Capital and Private Investment



E. Conclusions

18. Boosting sustainable growth requires focus beyond the traditional sectors. Mining and agriculture will continue to dominate economic activity in Zambia and attracting investment and improving productivity in these sectors remains key. However, it is important to create a conducive business environment for activities in other sectors to flourish so that Zambia can reap the demographic dividend from a young and growing population. Manufacturing and ICT have shown positive trends, with tourism yet to recover from the COVID-19 shock. The government's efforts to develop a green growth strategy will help improve resilience to climate shocks.

19. There is little evidence that SEZs and fiscal incentives have boosted investment and reduced inequality between regions. Despite special economic zones operating for more than a decade, they have not proved to be the hoped-for game changers in Zambia. Most companies operating within the SEZ identify the same infrastructure and governance inadequacies as businesses outside the SEZ. The lost revenues from the fiscal incentives reduce the government's ability to address infrastructure gaps and do little in the way of resolving other governance shortfalls.

20. Restoring macroeconomic stability and credibility, improving the business climate and governance is the best way to attract new investment. Prompt and clear resolution of the debt restructuring removes the largest obstacle to economic recovery. It would lower uncertainty for foreign and domestic investors and boost the impact of the government's program to restore macroeconomic stability and fiscal sustainability. Reducing corruption, streamlining bureaucratic procedures, and easing the business environment would attract investment.

21. The focus on education and health is warranted. A simulation of the impact of improved education and health indicators as a result of government's investment in health and education show a significant increase in long-term growth rates. The results are more pronounced when investment in health and education are accompanied with increased investment by the private sector. The simulation shows that the combined impact of improvements in health, education and increased private investment would boost GDP growth by 0.5 percentage points starting in 2032 and be sustained going forward

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MACROFINANCIAL LINKAGES AND FINANCIAL STABILITY IN ZAMBIA[1]

A. Motivation and Background

1. The overarching goal of the Zambian authorities is to generate higher, better quality, and more inclusive and sustainable growth. A specific objective is to reach middle-income status by 2030. To achieve these goals the authorities are seeking to create a greater role for the private sector in driving the economy and financing growth. This raises key questions to consider as policies are developed to strengthen the role of the private sector. In particular, – is the financial sector strong enough to play its role in supporting growth? Is the financial sector well-positioned to embrace its role as primary engine of growth? Are there financial stability and soundness concerns that could undermine that objective? And finally, is there room and/or need for targeted policy interventions to facilitate that role?

2. This paper identifies key macrofinancial linkages in Zambia and examines the relationship between financial conditions and the macroeconomic outlook. The analysis evaluates how effectively the financial system, comprising financial markets and financial institutions (banks and non-banks), facilitates the channeling of funds between borrowers, lenders, and investors to support economic growth. It also assesses whether any disruption in the functioning of this intermediation process or any excess in the provision of credit could cause negative consequences for the macroeconomic outlook. Furthermore, the analysis examines how current macroeconomic developments impact financial conditions and the stability of the financial system.

3. Macrofinancial analysis is an integral part of economic analysis in the context of Article IV consultations, both in the baseline projections and the assessment of risks. It involves an integrated analysis of macrofinancial linkages and systemic risk (Figure 1). It includes two dimensions:

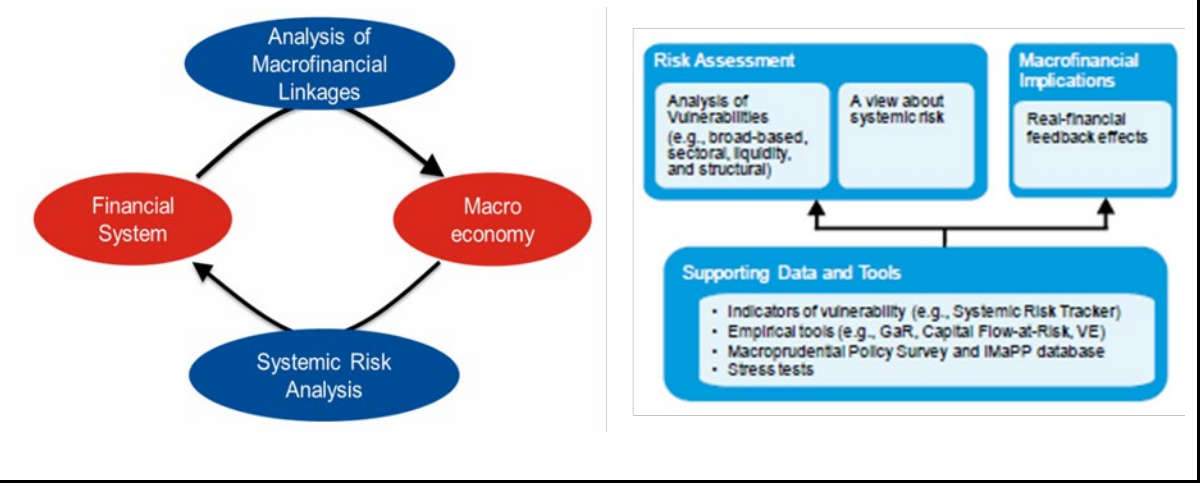
- Analysis of macrofinancial linkages: identifying key macro-financial linkages and ensure consistency between financial conditions and the baseline macroeconomic outlook.
- Systemic risk analysis: providing a comprehensive analysis of systemic vulnerabilities to form a view about the extent of systemic risk and its sources.

4. These two dimensions of macrofinancial surveillance need to be evaluated jointly, as there is a dynamic feedback loop that links the financial system and the macroeconomy. The analysis considers how the overall policy mix affects macrofinancial developments through different transmission channels ("macrofinancial linkages"), as well as how the assessment of

[1] Prepared by Samer Saab (MCM).

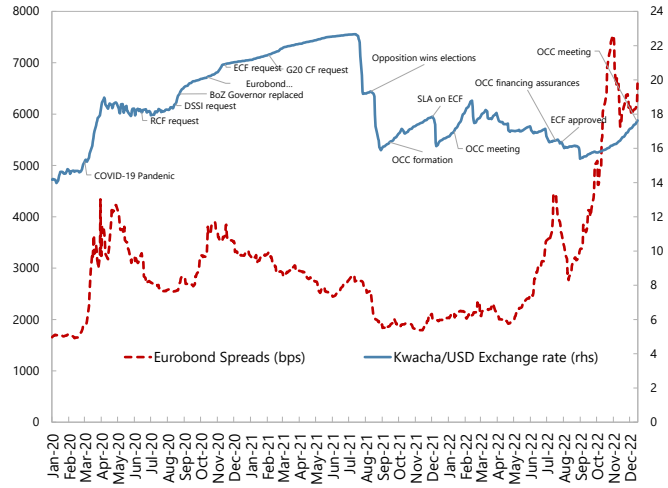
systemic vulnerabilities and financial sector resilience ("systemic risk assessment") helps anchor the policy advice.

Figure 1. Zambia: Elements of Macrofinancial Analysis



5. Zambia is dealing with large fiscal and external imbalances resulting from years of economic mismanagement, especially an overly ambitious public investment drive that did not boost growth or fiscal revenues. A drought in 2019 and the COVID-19 pandemic exacerbated the acute economic and social challenges facing the country, with poverty, inequality, and malnutrition rates amongst the highest in the world. As a result, Zambia is in debt distress, defaulting on its Eurobonds in November 2020 while also accumulating arrears to other creditors (Figure 2). The war in Ukraine has increased prices of fuel and fertilizer, amplifying pressures further. Macroeconomic stability has improved since 2022, boosted by the ECF arrangement (approved in August 2022). Growth began to recover in 2021 while inflation stabilized below 10 percent from mid-2022, from a peak of 25 percent in mid-2021, driven by the post-election currency appreciation. Fiscal consolidation is on track underpinned by lower spending on inefficient public investment and regressive subsidies. However, domestic funding pressures have risen, fueled by uncertainty around the debt restructuring process, with the share of non-resident holders of local debt declining to 22 percent at end-2022, from a peak of around 29 percent earlier

Figure 2. Zambia: Timeline of Key Events, 2020–2022



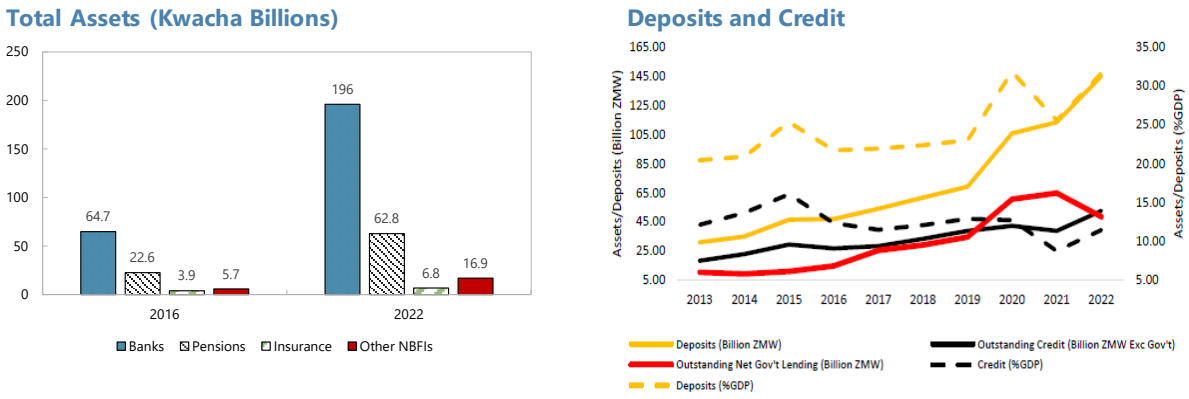
Sources: Bank of Zambia and IMF staff calculations

in the year. Domestic yields have trended upwards as demand for government securities has weakened.

B. Structure of the Financial System

6. Zambia's financial system is relatively small, with banks playing a leading role. At end-2022, the banking sector comprised of seventeen commercial banks dominated by five banks, which collectively account for 65 percent of the total sector assets and deposits. The banking sector is majority foreign-owned subsidiaries of large regional financial groups (around two-thirds of total assets), particularly from South Africa. Four banks are partially owned by the Zambian government (including the biggest and most systemic bank, ZANACO) and represent 29 percent of total sector assets. The remaining three are locally owned smaller private banks. At end-2022, the total asset base of the entire banking sector stood at K196 billion and was mainly funded by deposit liabilities of K147 billion. The rest of the financial sector is comprised of a number of smaller non-bank financial institutions (NBFIs), including pension funds, insurance companies, building societies, and a relatively large number of micro-finance institutions. The pension sector in Zambia covers less than 10 percent of the labor force. The National Pension Scheme—managed by the National Pension Scheme Authority (NAPSA)—covers all private sector employees and public sector workers who joined the labor force after 2000. NBFIs are typically long-term investors in government local currency debt markets, with NAPSA being the largest non-bank holder of government bonds.

Figure 3. Zambia: Financial Sector Structure, 2013–2022



Sources: Bank of Zambia and IMF staff calculations

7. Over the last few years, the financial sector has experienced rapid growth. Total assets of the sector tripled in nominal size between 2016 and 2022, led by robust growth in direct and indirect lending to government and underpinned by the sharp rise in deposits. Currently, banking sector assets account for around 41 percent of GDP, with the rest of the financial sector accounting for an additional 18 percent (Figure 3).

C. Systemic Risks and Financial Sector Resilience

8. Zambia faces a number of significant external and domestic risks that, in combination with existing vulnerabilities, have the potential to impact financial stability. Among the largest external risk factors are a sharp drop in the price of copper and the exchange rate. Important domestic-source risks include the crowding-out of private credit markets by fiscal funding needs (creating significant direct and indirect credit and liquidity exposure to the public sector), large government payments arrears, and the recent tightening of domestic funding conditions in the local currency bond market.

9. The banking sector continues to show resilience to the effects of global monetary tightening and spillovers from Russia's war in Ukraine, aided by accommodating COVID-era prudential relief measures. Average capitalization stood around 23 percent at end-2022, though with wide variations across individual banks. Asset quality has improved on average, with net non-performing loans (NPLs) to loans at less than 0.5 percent, supported by an NPL coverage ratio of around 93 percent (Table 1). The banking sector remained highly profitable in 2022 with an average return-on-assets of 5 percent (Figure 5), albeit slightly down from 2021, with the marginal decline largely driven by IFRS 9 impairment charges and lower interest income from loans. Further, yields rates on government securities (specifically on the 364-days treasury bill, the preferred government debt instrument of banks), reduced significantly over the last two years as a result of positive macroeconomic and political developments. The rise in holdings of securities on banks' balance sheets, however, muted the adverse impact of lower yield rates on interest income from securities (Figures 4 and 5).

10. COVID-related regulatory forbearance measures continue to mask possible pockets of asset quality weakness. Specifically, while reported gross NPLs stood at a modest 5 percent of total loans at end 2022 (Table 1), the inclusion of loans restructured during the pandemic (currently not subject to provisioning) would likely bring that figure above 10 percent. Furthermore, given general weaknesses in the recognition of NPLs (particularly the valuation of collateral), the underlying level may also be understated, and banks might also be under-provisioning for credit losses, including to take advantage of forbearance measures.

11. The banking sector maintains seemingly ample liquidity buffers. Average liquidity indicators show an improving match and coverage between assets and liabilities over time (Table 1). However, foreign-owned banks place significant liquidity abroad—presumably with their parent banks for sovereign risk management purposes—which leaves them, in principle, vulnerable to fast-moving liquidity squeeze episodes.

Figure 4. Zambia: Bank Assets Composition, 2017–2022

(Percent and Kwacha Billions)

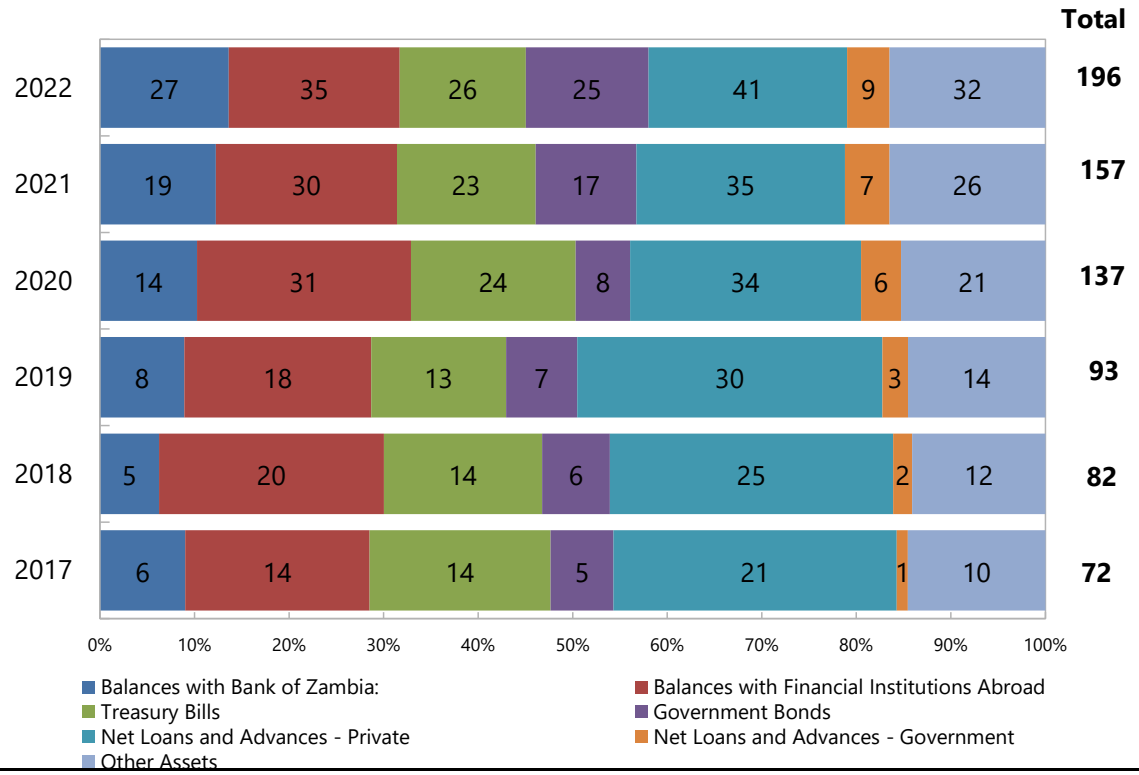
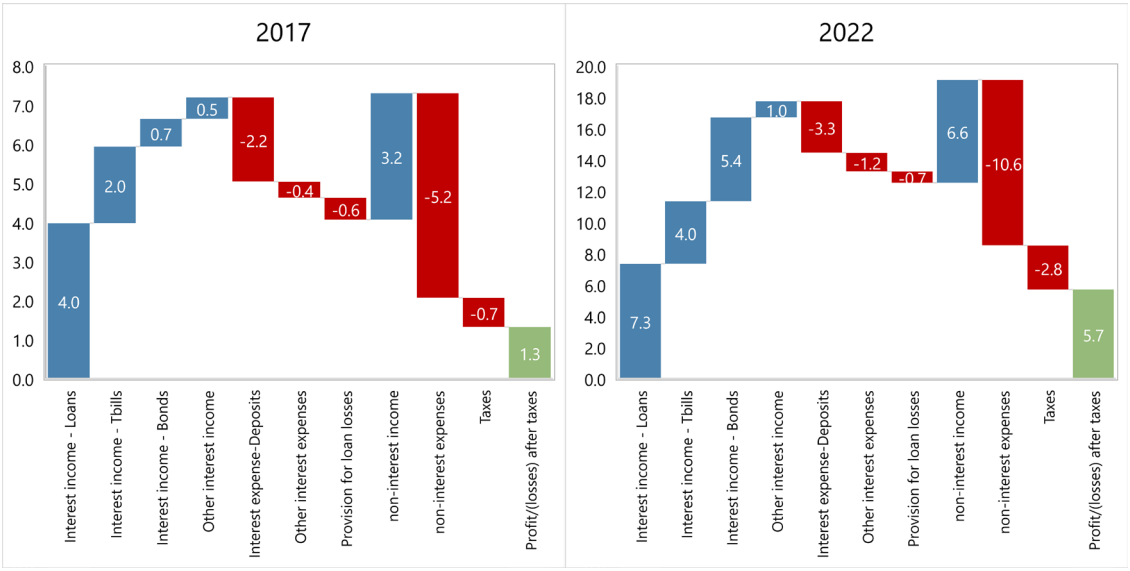


Figure 5. Zambia: Bank Profitability, 2017–2022

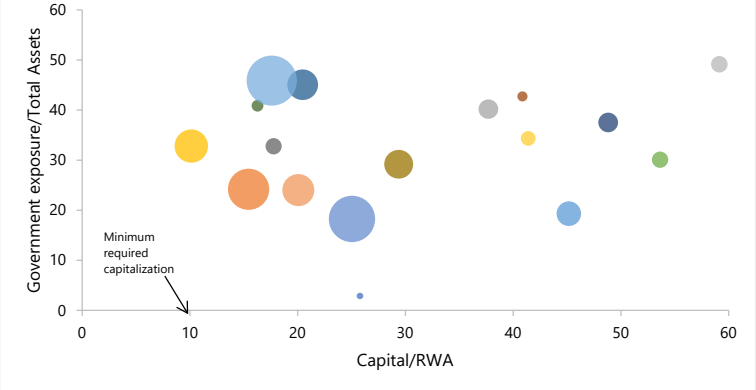
(Kwacha Billions)



Sources: Bank of Zambia and IMF staff calculations

12. Concentration risk, particularly the relatively high and increasing exposure to the sovereign, is a key risk for the banking sector (Figure 6). Banks' direct exposure to the sovereign is exemplified by the relatively high levels of government securities on banks' balance sheets (see Box 1 for a broader analysis of the domestic debt market in Zambia). On average, banks in Zambia hold over 27 percent of their assets in government T-bills and bonds, equivalent to 240 percent of regulatory capital. This average representation masks wide variations among individual banks, with some government-owned banks holding close to half of their assets in government securities (Figure 6, Box 1). While the average sector total capitalization ratio is well above the 10 percent regulatory minimum, there is a similar wide variation among individual banks: The combination of high government exposure and relatively lower capital buffers is a prominent risk factor for a number of medium and large banks. Banks balance sheets are also significantly exposed to the government via direct lending, with the share of lending to government and parastatals representing around 18 percent of total lending at end-2022, up from 7 percent in 2018.

Figure 6. Zambia: Banks Exposure to Government 2022
(In Percent)



Sources: Bank of Zambia and IMF staff calculations

13. Credit in the Zambian economy is mainly concentrated in a handful of strategic sectors. These are manufacturing, personal loans, agriculture, as well as mining (Figure 7). Banking credit to the private sector has been decreasing in the last few years as a percentage of GDP and hence lagging behind nominal GDP growth, a clear consequence of the preference of the banking sector to invest in seemingly low-risk, high-earning investments in government securities at the expense of intermediation of the private sector. This has allowed the banking sector to de-leverage and remain highly profitable and capitalized but has amplified its balance sheet exposure to the sovereign, making banks highly sensitive to market risk (sovereign yields), with interest income accounting for 75 percent of gross income on average. Intermediation ratios have also been declining, currently around 36 percent, down from 52 percent in 2019. As such, banks are currently not seen as driving private sector growth, despite generous prudential forbearance measures from 2020 to 2022, and credit remains concentrated towards the strategic sectors as a matter of policy (Targeted Medium Term Re-Financing Facility (TMTRF)[2] and banks' preference to lend short-term. At end-2022, average nominal lending rates remain elevated at around 25 percent (15 percent real), while 180-day deposit rates are currently around 7 percent (negative real).

[2] In April 2020, the Bank of Zambia established a Targeted Medium-Term Refinancing Facility to enable financial service providers (FSPs) to support businesses and households that had been impacted by COVID-19. The goal was to provide liquidity support to qualifying FSPs for onward lending /refinancing to borrowers in key priority sectors.

Table 1. Zambia: Financial Soundness Indicators, 2018–22

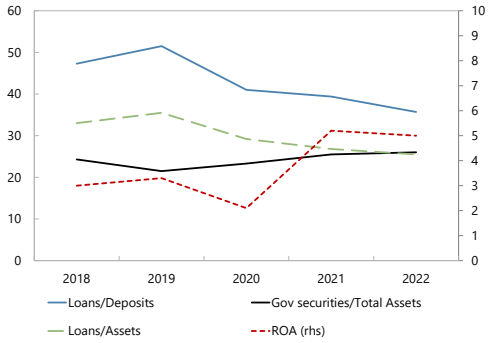
(In Percent)

	2018	2019	2020	2021	2022			
					Mar	Jun	Sep	Dec
Capital adequacy								
Regulatory capital to risk-weighted assets	22.1	22.2	20.1	24.7	25.0	25.0	25.3	22.8
Tier 1 regulatory capital to risk-weighted assets	20.1	20.1	17.8	23.3	23.8	23.9	24.4	21.9
Capital to total assets	12.3	12.2	8.4	10.9	11.0	11.2	11.4	10.6
Asset quality								
Past due advances (NPL) to total advances	11.0	8.9	11.6	5.8	6.4	6.2	5.8	5.0
Loan loss provisions to nonperforming loans	86.4	91.6	75.9	102.8	93.8	94.5	93.5	93.4
Bad debt provisions to advances	9.5	8.2	8.8	6.0	6.0	5.9	4.9	4.4
Loan concentration								
Of Which								
Households	29.0	25.6	20.4	18.8	19.8	17.9	19.1	18.3
Government and parastatals	7.5	11.0	20.0	30.1	28.1	18.4	19.5	17.6
Sectoral Breakdown								
Agriculture	16.8	16.3	16.3	10.7	11.0	9.5	9.2	9.5
Mining	7.1	7.5	6.2	4.0	4.7	5.6	6.2	7.2
Manufacturing	9.2	9.0	1.7	1.3	11.1	12.9	18.4	18.3
Construction	3.0	2.1	1.7	1.3	1.5	1.2	1.0	1.3
Services	4.2	2.1	1.9	1.3	0.9	0.8	1.3	1.6
Others	59.8	63.0	72.1	72.5	70.9	33.7	25.1	26.2
Earnings and profitability								
Return on average assets	3.0	3.3	2.1	5.2	5.1	2.4	3.6	5.0
Return on equity	14.7	16.2	12.9	35.1	32.8	14.6	21.7	29.9
Gross interest income to total gross income	67.9	72.7	72.6	71.9	76.4	74.4	72.7	72.9
Gross noninterest income to total gross income	32.1	27.3	27.4	28.1	23.6	25.6	27.3	27.1
Net interest margin	9.1	9.3	9.4	9.9	10.1	4.9	7.4	9.4
Liquidity								
Liquid assets to total assets	47.0	42.2	48.6	46.6	46.8	50.2	49.8	50.7
Liquid assets to total deposits	57.0	51.5	57.4	56.3	56.9	68.5	68.0	67.6
Advances to deposits ratio	47.3	51.5	41.0	39.4	37.1	36.5	37.3	35.7
Exposure to foreign currency								
Foreign currency loans to total gross loans	44.5	50.3	47.1	33.7	39.8	34.3	35.9	40.9
Foreign currency liabilities to total liabilities	46.6	47.4	52.2	41.9	44.1	42.0	38.6	41.7
Net open position in foreign exchange to capital	1.7	1.3	1.1	0.2	0.1	0.7	2.5	5.6

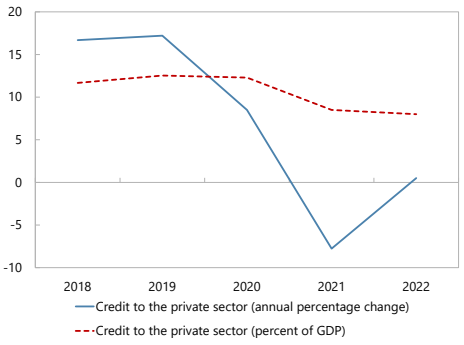
Source: Bank of Zambia.

Figure 7. Zambia: Private Sector Credit and Contribution to Growth
(In Percent)

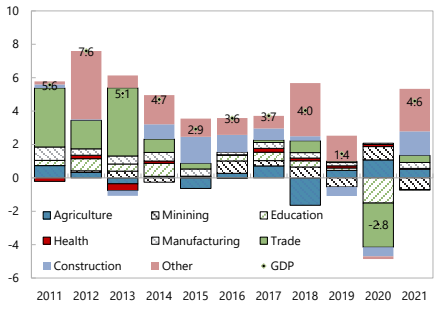
Bank Intermediation
(In Percent)



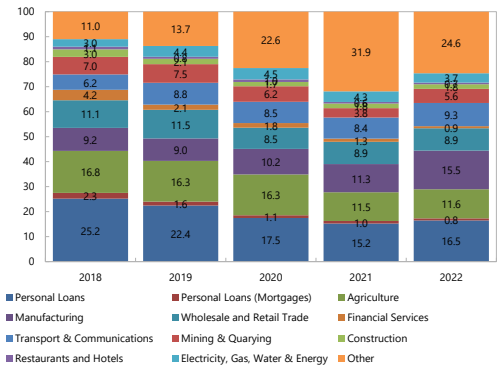
Private Sector Credit
(In Percent)



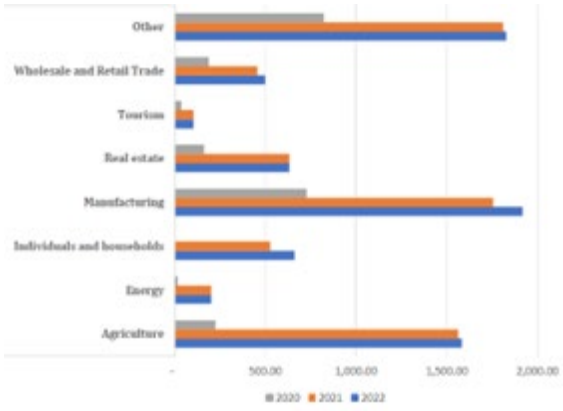
Sectoral Contribution to GDP Growth
(In Percent)



Banking Sectoral Loan Distribution
(In Percent)



Sectoral Distribution of TMTRF Loans
Kwacha Millions



Real Lending and Deposit Rates – In Percent



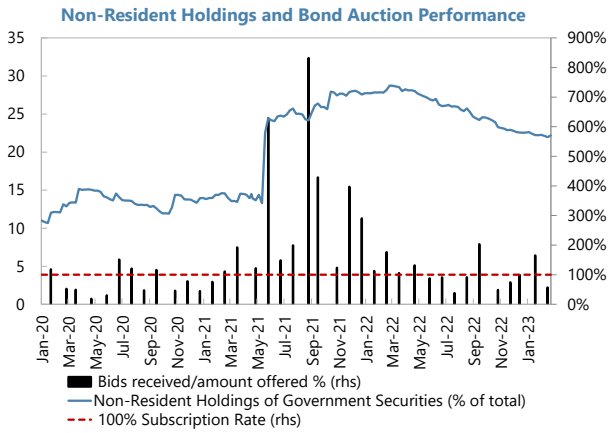
Sources: Bank of Zambia and IMF staff calculations

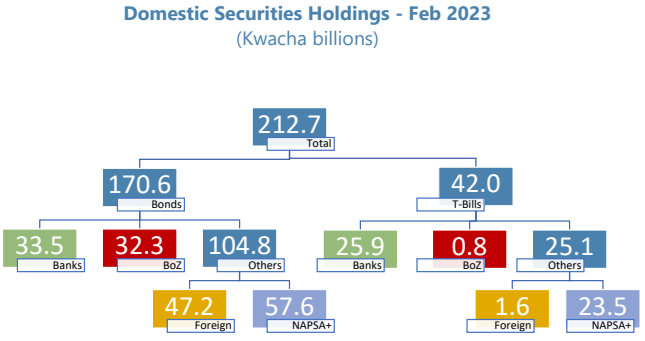
14. Sectoral credit allocation appears to be misaligned with sectoral contributions to growth and overall employment in the economy. While the manufacturing sector appears to be one of the biggest beneficiaries of private credit allocation (around 16 percent of banking sector credit in 2022), it only accounts for around 7 percent of the economy and contributed less than 0.4 percentage points of 2021 GDP growth of 4.6 percent (Figure 7). Notably, the proportion of credit to the manufacturing sector surged between 2021 and 2022 as the sector received the most support from the TMTRF introduced by the Bank of Zambia in early 2020, accounting for around 25 percent of all TMTRF support. Meanwhile, the manufacturing sector as a whole currently accounts for only around 10 percent of the labor force, with similar proportions among youth employment. Minimum wages in the manufacturing sector rank in the bottom tier of the Zambian economy.

Box 1. Domestic Debt Markets and the Sovereign-Bank Nexus

Banks and sovereigns are linked by multiple interacting channels. Evidence from Zambia suggest that all three channels are relevant:
(1) the sovereign-exposure channel: banks hold large amounts of sovereign debt
(2) the safety net channel: banks are protected by government guarantees
(3) the macroeconomic channel: the health of banks and governments affect and is affected by economic activity.

The domestic debt market continues to be the main source of financing for Zambia, but funding pressures appear to be on the rise. The outstanding stock of government securities stood at 213 billion kwacha at end-February 2023 (or 44 percent of GDP), up from 194 billion a year ago and 130 billion at end-2020. The share of non-resident holders of domestic debt stood at 23 percent as at end-2022, down from a peak of around 29 percent earlier in the year. Tighter global financial conditions and uncertainty around the debt restructuring process have reportedly led to this pull-back of non-resident investors from the domestic debt market in early 2023. Consequently, demand at bond auctions appears to be declining and domestic yields are trending upwards, after a period of rapid decline following the Staff Level Agreement of a Fund-supported program in December 2021. This is in contrast to the second half of 2021 that saw a rapid increase in non-resident holdings, combined with oversubscribed bond auctions.





Sources: BoZ, IMF staff calculations, NAPSA + includes NAPSA and other NBFI holders as well as retail investors

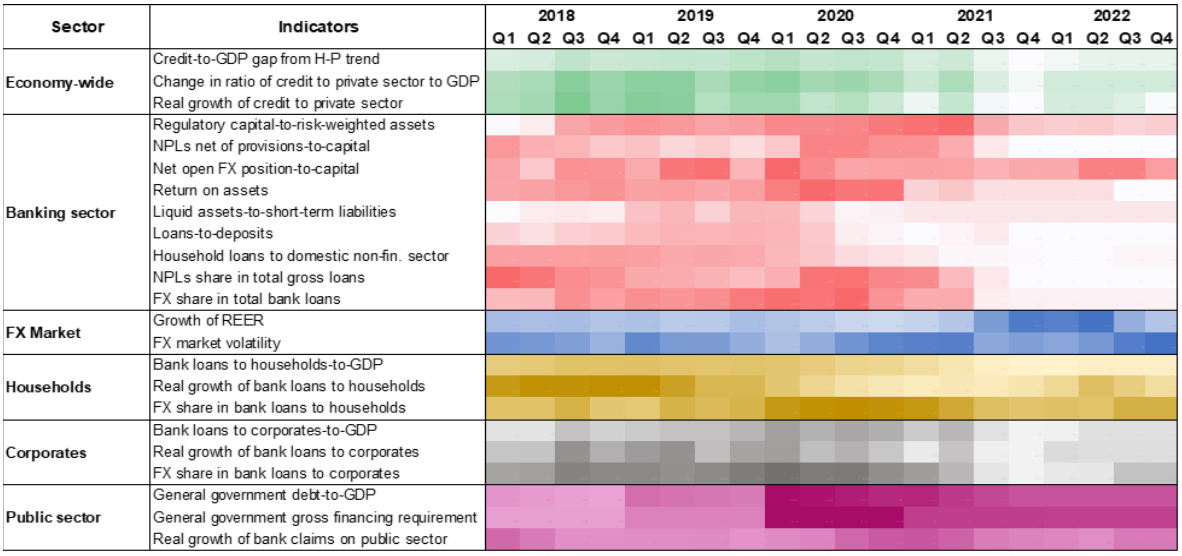
15. Overall, the financial system is emerging from the pandemic with higher capital buffers and no alarming signs of stretched asset values and credit froth. Standard indicators

of systemic vulnerabilities (Box 2) do not flag particularly high concerns at this point in the credit cycle. Systemic vulnerability indicators are at generally low and declining levels compared to the 2019–2020 period (Figure 8). However, uncertainty over public sector debt and increasing FX market volatility and net open exposure to FX exist and have picked up in relative intensity as of late 2022, as well as household FX loans.

Box 2. Tracking Systemic Risk Over the Credit Cycle

The systemic risk heatmap consolidates macrofinancial indicators from existing Fund databases as risk proxies and organizes them in an economy-wide snapshot of systemic risk by sector/market and type of underlying risk. The distribution of indicators within a country's own history or across peers contains information about the intensity of underlying risks. Economy-wide indices of underlying risks can be constructed by averaging the percentile ranks of the corresponding risk proxies first for each sector/market and then across them. The various signals from them are then interpreted with reference to the phase of the credit cycle. The most pertinent individual indicators can be used in their own right or as inputs into estimated models to form a view on different aspects of systemic risk. Analysis of the evolution of underlying risks over the credit cycle can offer useful insights into different aspects of systemic risk. Focusing on the "time dimension" of systemic risk, the cycle has four phases: (1) build-up phase that in the extreme can give rise to financial manias, credit booms, and/or asset price bubbles, (2) correction phase that in the extreme can turn into financial market crashes, financial sector panics, and/or credit crunches, (3) peak, and (4) trough phases, characterized by inflection points in the level or change of intensity of underlying risks.

Figure 8. Zambia: Systemic Risk Heatmap



Note: The darker the color, the higher the vulnerability, compared to each indicator's historical
Sources: BoZ, Staff calculation.

16. Typical micro-prudential stress tests suggest that, overall, the Zambian banking sector can withstand significant credit, asset quality, and liquidity shocks.[3] This reflects the sector's currently relatively high capital adequacy ratio and profitability, together with asset impairment levels at manageable levels, and high rates of NPL provisioning. As banks start from a relatively sound position, the system's overall aggregate capital adequacy ratio never falls below the required minimum under the observed adverse NPL scenarios. Confirming pre-shock expectations, the aggregate credit risk shocks left the system with a significantly reduced CAR at 17 percent (compared to a baseline ratio of 23 percent pre-shock), but still comfortably above the required minimum of 10 percent. The level of provisioning of NPLs (currently averaging above 90 percent of total NPLs across banks and categories of loans and NPLs) is one important mitigating factor behind the results. Banks' ample pre-shock liquidity position would also allow them to withstand a moderate liquidity shock. Although the system on average weathers most shocks relatively well, the distribution of expected losses among banks is understandably uneven, with more systemic banks faring relatively better under adverse scenarios than smaller banks, thus posing little systemic risk.

D. Regulatory and Supervisory Capacity to Manage Systemic Risk

17. In the last decade, the Bank of Zambia has embarked on an ambitious reform program to upgrade its capacity to effectively supervise and regulate the financial sector and preserve financial stability. Examples of policy and capacity upgrades include:

- Setting up a Crisis Management and Resolution Unit and Framework (2013).
- A new Supervision and Resolution of Problem Institutions Policy (2020).
- The Banking and Financial Services Act (BFSA) was amended (2020) to provide for a Special Resolution Regime.
- Cabinet approved the provisions of the BFSA to setup a Deposit Insurance Scheme within the Bank of Zambia (2021).
- Amendment of the Securities Bill (2022).
- A new Bank of Zambia Act (2022), which provides, among other things, for the creation of an inter-agency Financial Stability Committee (FSC), comprising membership from all the financial system Regulatory Authorities. The setup of the FSC is of particular significance and importance, as it will give the BoZ the mandate, capacity, and tools (like a yet-to-be drafted Financial Stability Report) to observe and manage systemic risk from a broader macro-prudential perspective while focusing on the inter-linkages with the broader economy.

[3] To test the Zambian banking sector's resilience to certain shocks, standard credit risk and liquidity risk micro-prudential stress tests were performed by mission staff, to complement macro-prudential stress tests undertaken regularly by the BoZ.

18. In 2022, the BoZ conducted a comprehensive review of the asset quality of the entire banking sector to evaluate the impact of the challenging macroeconomic conditions since 2019. The key objectives of this assessment were to determine the impact of the COVID-19 prudential relief measures[4] and ascertain whether the interventions should be unwound; assess the performance of facilities that were restructured; and establish the banks' compliance with the terms and conditions of the liquidity support facility through the TMTRF. On average, the review deemed asset quality to be satisfactory for the bulk of the assessed banks on account of high NPL coverage ratios, while the bulk of the restructured facilities under the COVID-19 relief measures were deemed performing (BoZ subsequently adversely reclassified around 16 percent of these loans). Furthermore, the examination revealed that all banks utilized at least one of the prudential relief measures introduced by the BoZ. Except for the measure relating to the collateral transition arrangements, all other measures with sunset clauses are subject to winding-down by end-March 2023 with no further extensions planned. Regarding concentration risk, the examination did confirm with concern the high credit concentration risk across the banking sector with respect to the top borrowers, the single borrower, and overall asset concentration to the Government sector.

19. In unwinding the majority of its temporary prudential measures, the BoZ has applied a risk-based policy approach, balancing the need for short-term growth with long-term financial stability considerations. As such, and broadly in line with best practices, the BoZ approach was informed by a detailed data collection and analysis (the asset review), and the sequencing deployed avoided cliff-effects, while prioritizing measures for unwinding that were either incompatible with international accounting standards or represented blanket moratoria on loan repayments. Meanwhile, bank capital distributions were limited to select case-by-case situations as banks and supervisors developed over time a more informed understanding and robust assessment of risks and losses. Nevertheless, certain forbearance measures like the collateral transition arrangements were extended to end-2023 given that the overwhelming majority of the banks have utilized this measure and its unwinding would have had adverse cliff effects on the banking sector, pointing to systemic weaknesses in how collateral (mostly in the form of real estate and land) is valued and recognized on banks' balance sheets for credit risk purposes.

20. Access to finance remains a work in progress, with real challenges ahead. Financial inclusion policies in Zambia will be crucial in bringing in capital from the informal sector into the formal sector where the multiplier effect can enhance its use. While the authorities have in the recent past implemented reform initiatives to enhance financial inclusion, including a SME guarantee scheme and the BoZ's "Go Cashless" initiative using mobile money and modern fintech tools, fundamental challenges remain, including a low savings rate among the population to justify financial services, low proportion of formal "bankarization" of adult population (around a third), and low financial literacy and awareness rates. The 2022 Capital Markets Master Plan proposed a sequenced reform plan on regulatory environment, bond and equities markets, and financial literacy.

[4] Measures include extension of IFRS 9 Day 1 impact, amortization of increase in provisioning, Targeted Medium-Term Refinancing Facility, and collateral transition arrangements.

The Master Plan also explored new forms of private financing – including equity, venture capital, and bond financing.

E. Conclusion

The authorities ongoing efforts to strengthen the banking sector are critical to both safeguarding financial stability and supporting growth. The regulatory framework, including liquidity and crisis management policies, has a powerful influence on the sovereign-bank nexus and needs to address various incentives in the allocation of credit across the economy. In particular, policies that favor holdings of government securities without adequately addressing credit concentration risk strengthen the sovereign-bank nexus and impede the allocation of credit to the private sector. In contrast, advancing effective resolution schemes and safety nets, and strengthening risk surveillance can encourage greater savings in the economy and improve the private sector's access to capital.

BOOSTING PRODUCTIVITY AND ENHANCING CLIMATE RESILIENCE IN ZAMBIA'S AGRICULTURE SECTOR[1]

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. [2]

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

[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

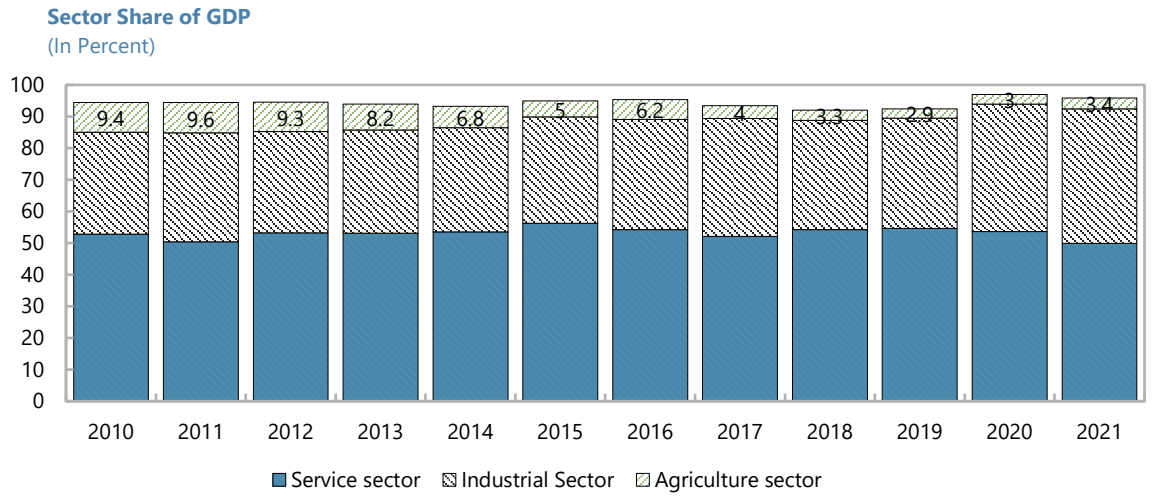
5. The share of the agriculture sector in GDP has declined over the past decade from 9.4 percent in 2010 to 3.4 percent in 2021. Over this period, the share of the industrial sector (including mining)[3] in GDP increased from 32.2 percent in 2010 to 42.5 percent in 2021 while the share of the services 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.

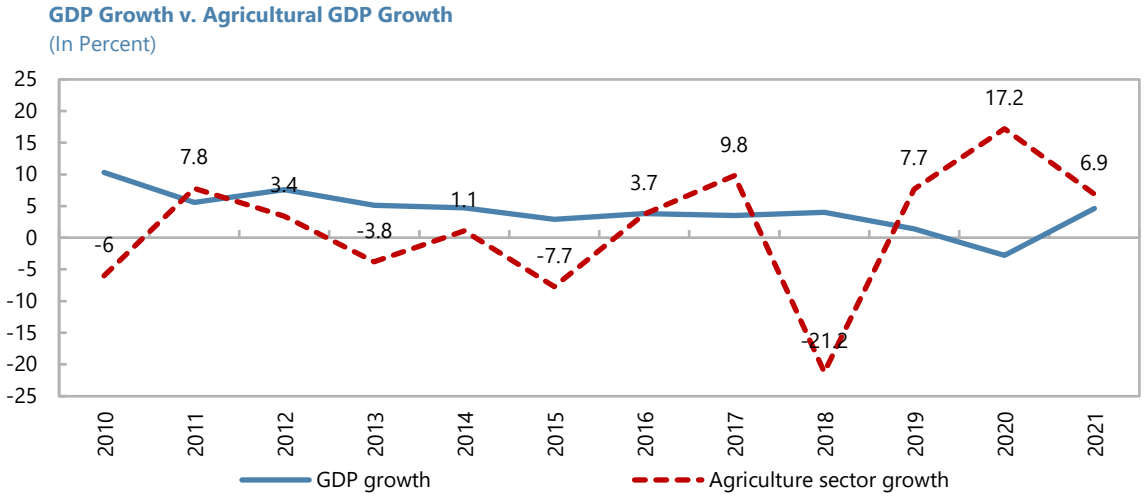
6. The agriculture sector is one of the main sources of employment in the country. However, over the last decade, employment in the agriculture sector decreased by 14.7 percentage points from 64.3 percent in 2010 to 49.6 percent in 2019 (Figure 2), mostly in the informal sector. The decline in employment 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).

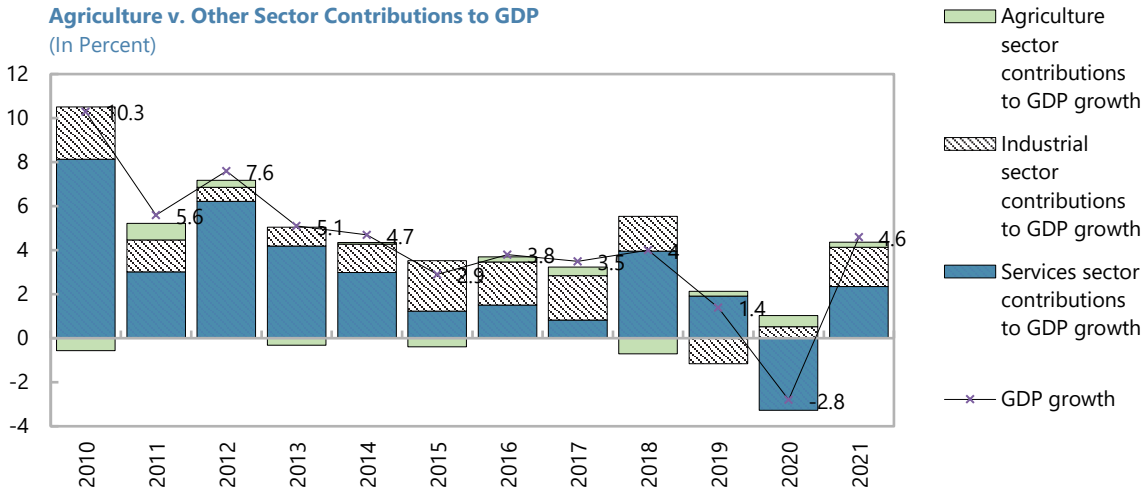
[3] Industrial sector comprises the value added in mining, manufacturing, construction, electricity, water, and gas.

[4] Service sector consists of wholesale and retail trade, transport, and government.

Figure 1. Zambia: Agriculture Sector Contributions to GDP Growth, 2010–2021







Sources: World Development Indicators and IMF staff calculations

Box 1. The Role of the Private Sector in the Development of Zambia's Seed Subsector[1,2]

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.

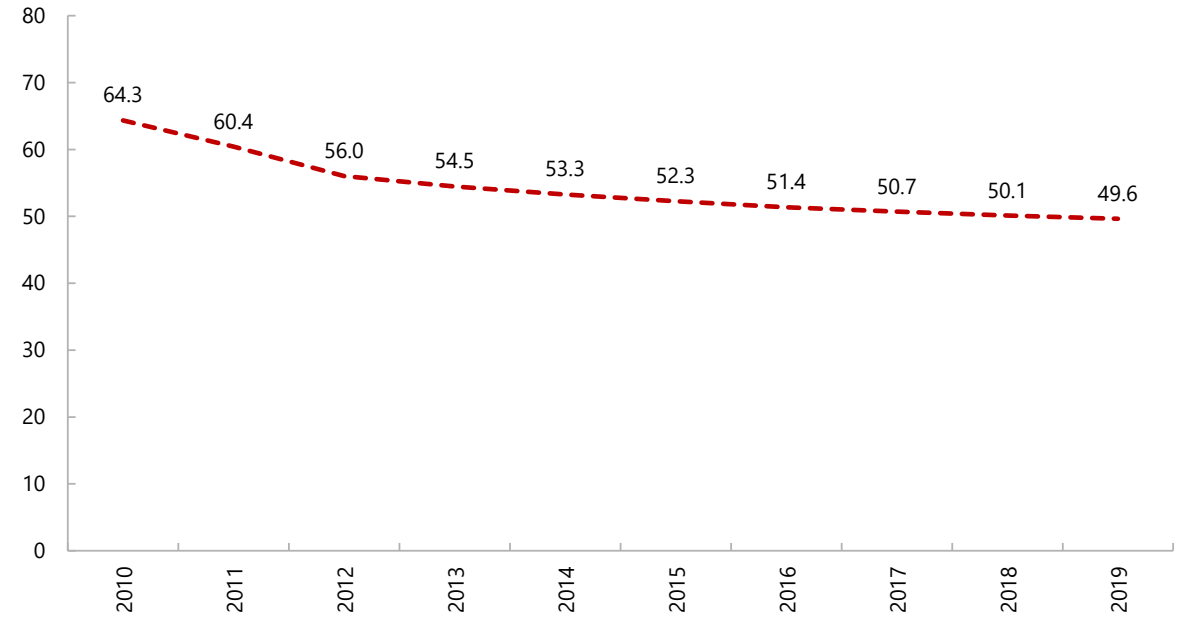
The limited variety of seed options, however, changed when policy reforms were undertaken, which put the subsector on a successful path. The privatization drive that took place in the early 1990s led to the deregulation of the parastatal ZAMSEED as well as initiated the introduction of several legislations 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.

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.

[1] Sowing Seeds of Success: A Regional Perspective on the Development of the Seed Industry in the COMESA Region (2020)

[2] Seed Policy Reform in Zambia (2020)

Figure 2. Zambia: Employment in the Agriculture Sector, 2010–2019
(Percent of total employment)



Source: World Bank World Development Indicators

7. The largest proportion of farmers, 1.5 million, are small-scale farmers who cultivate crops on a less than 20 hectares of land.[5] 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[6]. 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).

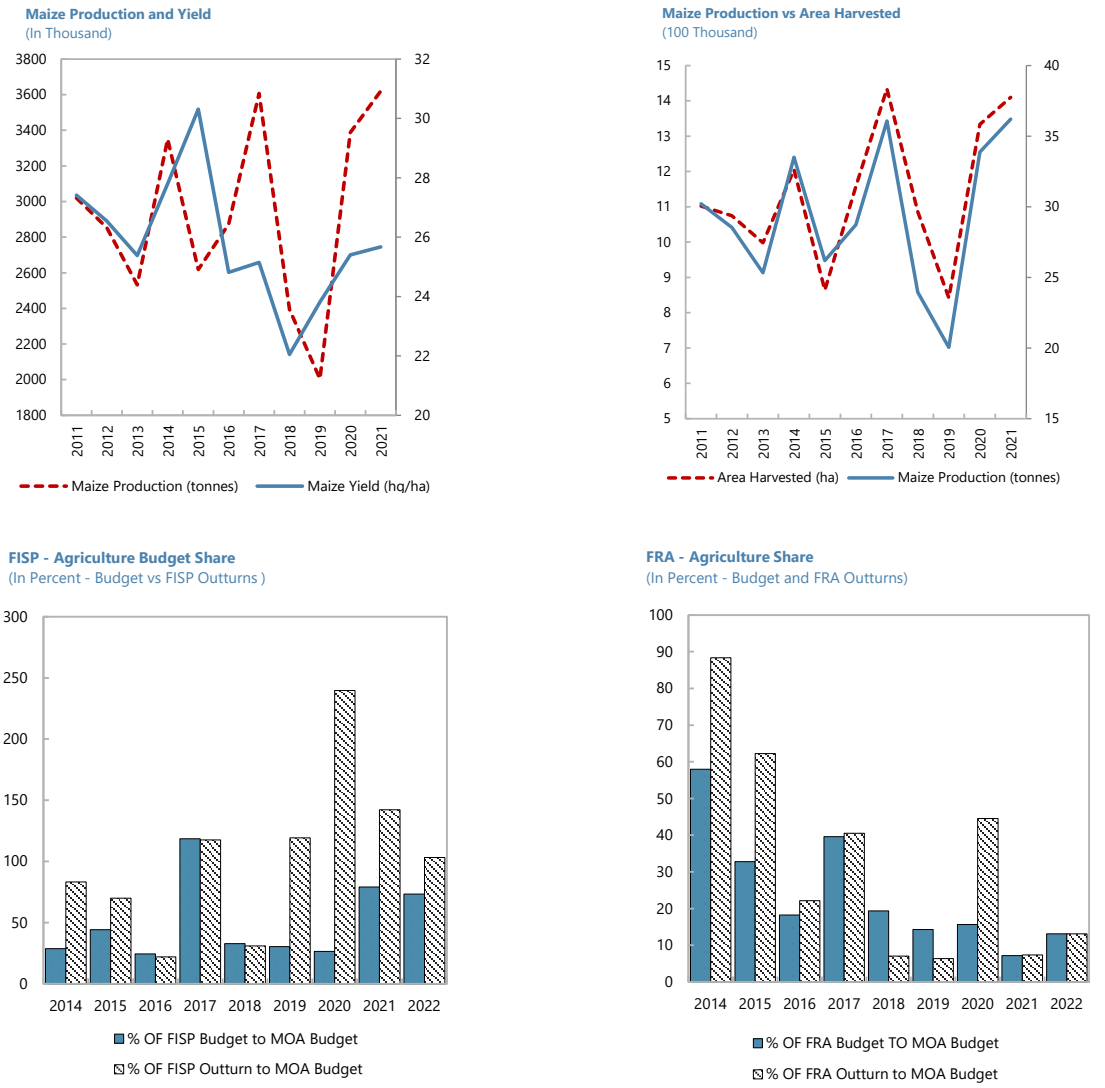
10. National agricultural policies have generally promoted the private sector as a key stakeholder in the development of the agriculture sector. The NAP formulated for the period between 2004 to 2015 emphasized the role of market liberalization as well as promoted the private sector in developing the 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 famers 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).

[7] Zambia Statistical Agency: The Monthly Volume 239

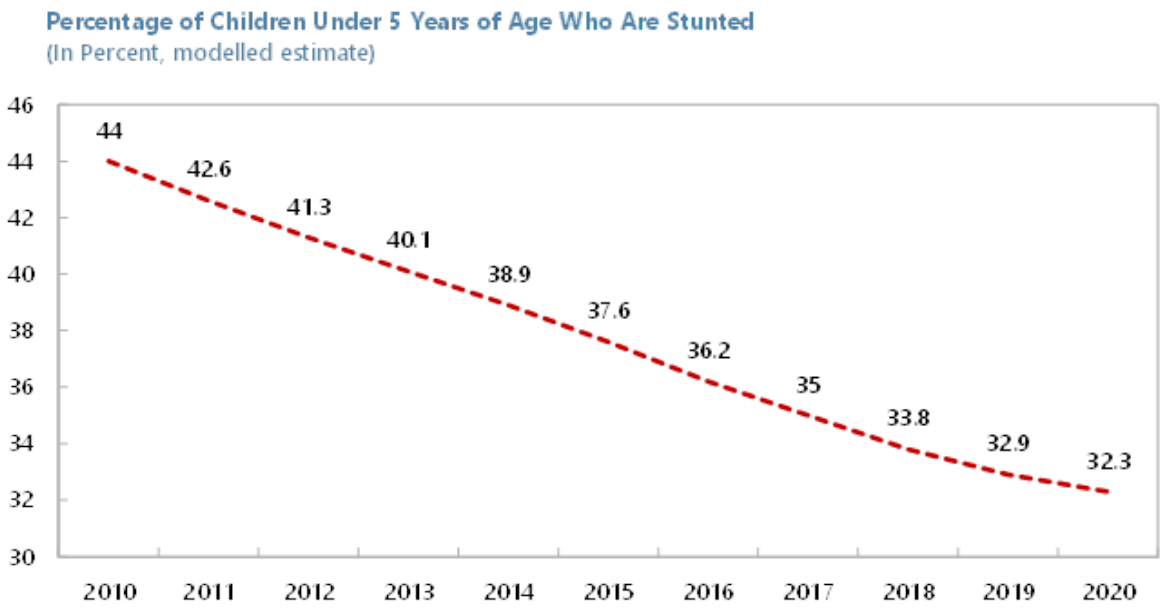
12. There is policy bias towards the production of maize. Maize is a relatively important crop under government support to the agriculture sector for strategic reasons. The production level of maize increased over the last decade while yields remained largely the same. The increase in production was 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).

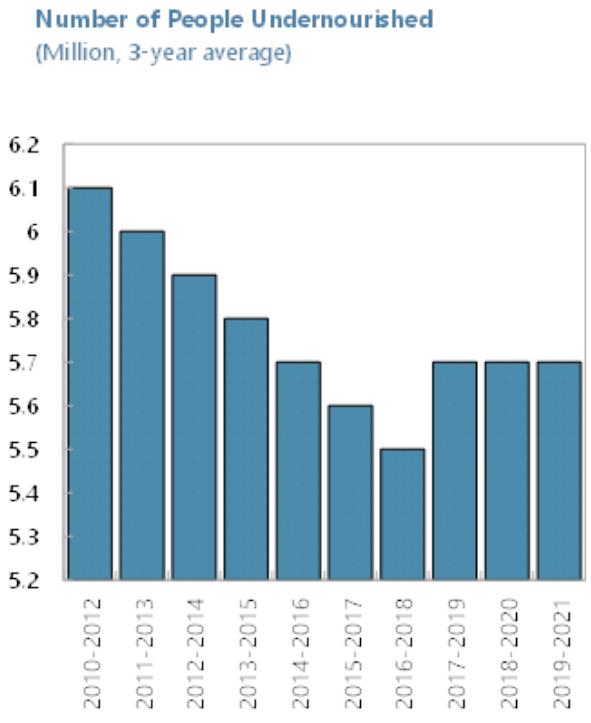
Figure 3. Zambia: Maize Production vs. Productivity, 2011-2022

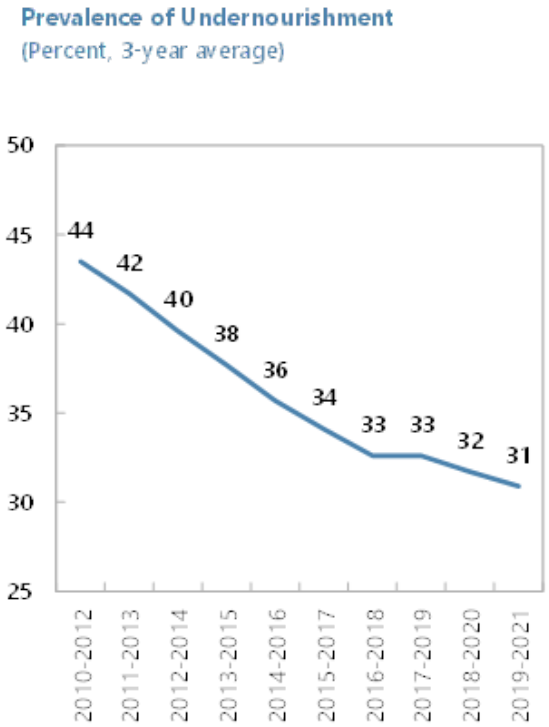


Sources: FAOSTATS, MoFNP and IMF staff calculations

Figure 4. Zambia: Children who are Stunted and Malnutrition, 2010–2020







Source: FAOSTATS

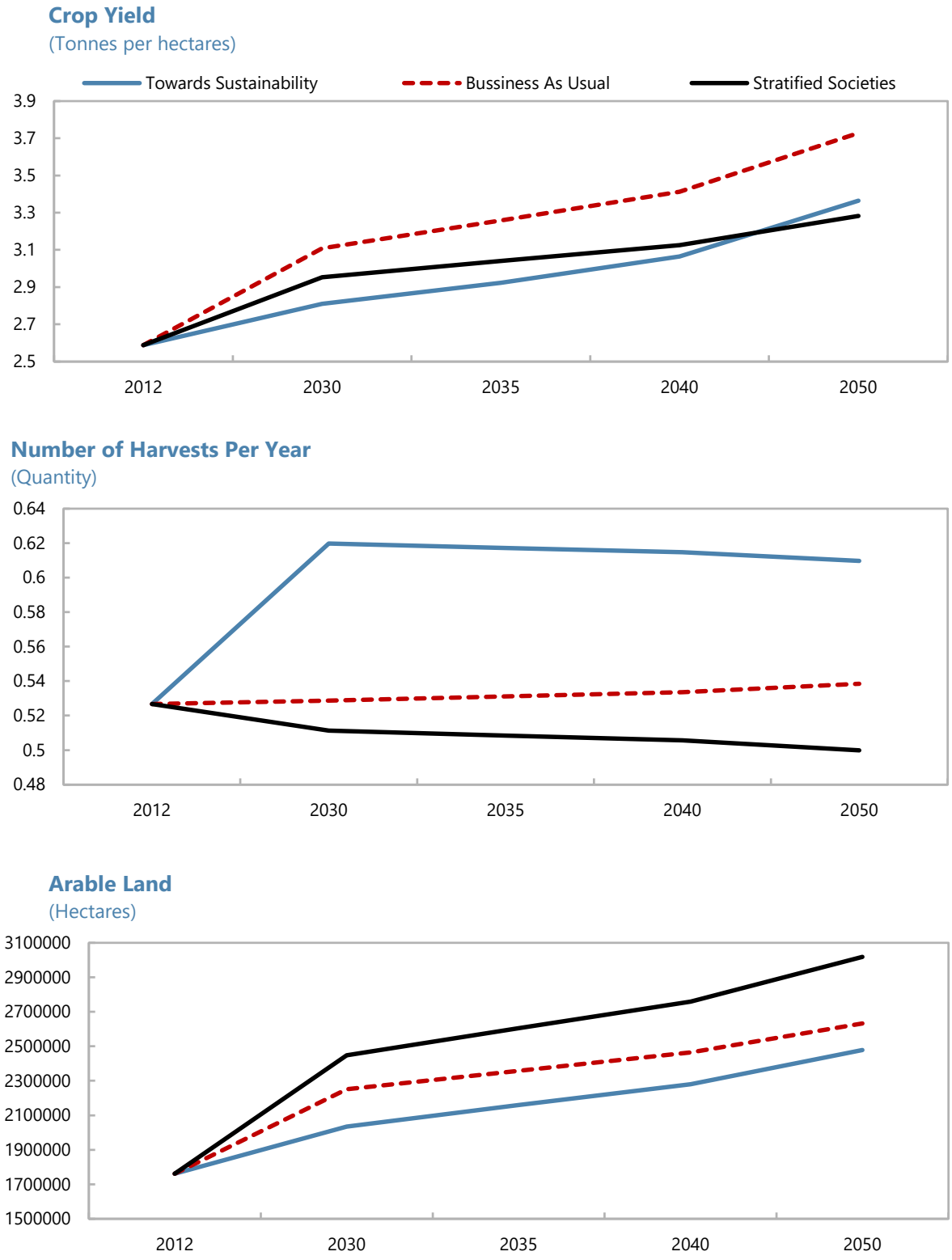
13. Studies demonstrate that diversification is critical in ensuring agroecosystem resilience and nutritional diversity. In many developing countries, the combination of high poverty levels and limited crop diversification predisposes small scale farmers to income uncertainty, high crop failure, and 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 rain-fed 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

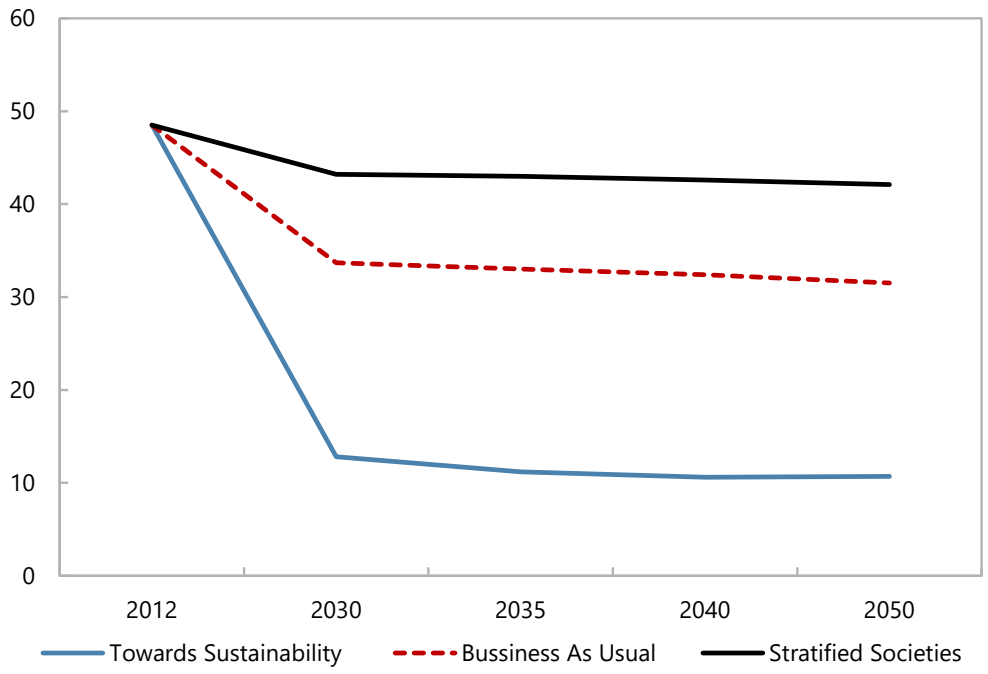


Sources: FAO, 2018. The Future of Food and Agriculture - Alternative Pathways

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 to 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).

Figure 6: Zambia: Prevalence of Undernourishment, 2012–2050

(In Percent)



Source: The Future of Food and Agriculture - Alternative Pathways 2018

[8] FAO assumed that the towards to 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〖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

Bank, 2019). 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 famers 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. Famer Input Support Program (FISP): Implementation, Outcomes, and Challenges

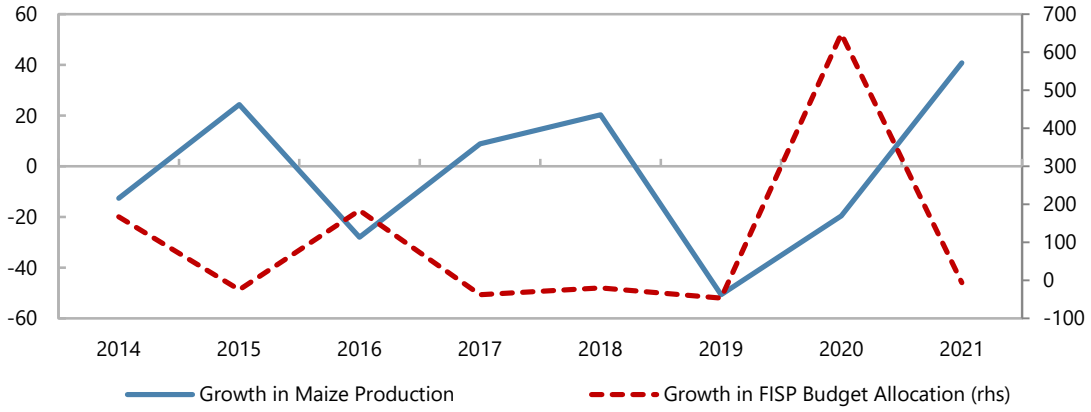
21. FISP uses direct input supply (DIS) to distribute subsidized inputs to small-scale farmers. Like many agricultural input support programs in Africa, the objective of FISP is to help raise rural incomes and alleviate poverty by subsidizing fertilizer and seeds which would help to raise production 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 thus 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).

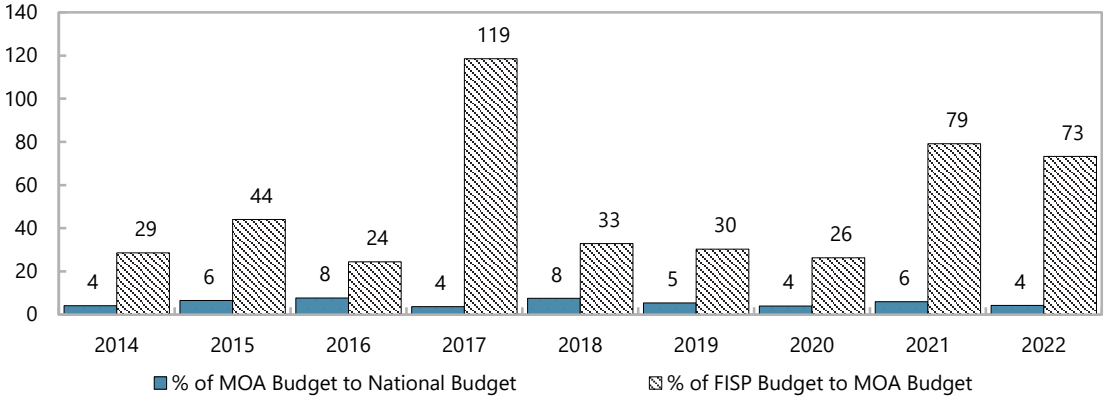
23. Overall, the FISP has not fully met its objectives. The program has been critical in ensuring self-sufficiency in the production of maize, and thereby contributing to improving food security in the country. Nonetheless, dietary limitations and nutritional deficiency remain elevated (Chapoto, et al., 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

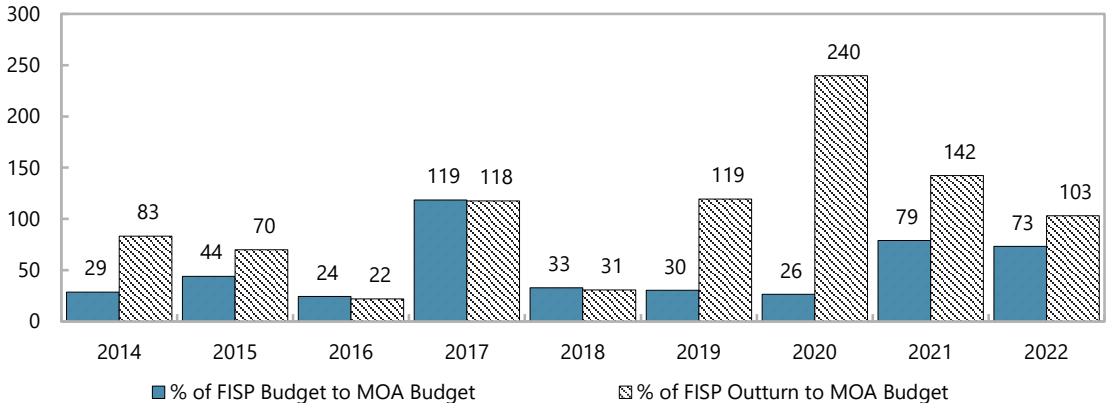
Growth in FISP Budget vs Growth in Maize Production
(In Percent)



MOA Budget to National Budget Share
(In Percent)



FISP to MOA Budget Share
(In Percent)

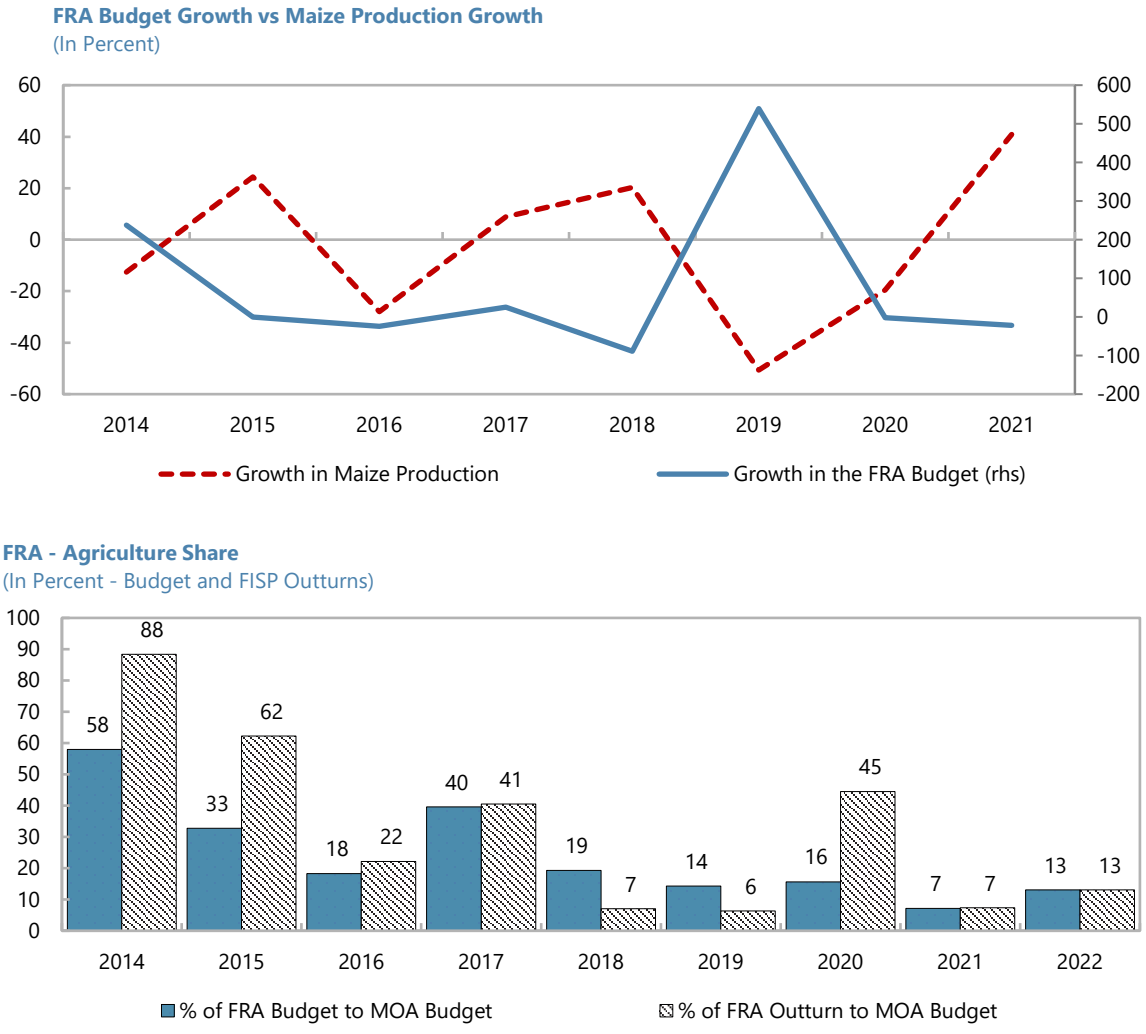


Sources: MoFNP and IMF staff calculations

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



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[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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