Established in 2011, Indaba Agricultural Policy Research Institute (IAPRI) is Zambia’s first indigenous policy research institute dedicated to policy analysis of the agricultural and environmental sectors. IAPRI is a non-profit company limited by guarantee and collaboratively works with public and private sector stakeholders. The Institute's vision is; “A Zambia free of hunger, malnutrition and poverty through sustainable agricultural transformation”.

IAPRI exists to carry out agricultural policy research and outreach activities, serving the agricultural sector in Zambia to achieve sustainable pro-poor agricultural development. The Institute sees the improvement of rural livelihoods as the key to achieving broad-based poverty reduction in Zambia. Achieving this entails enhancing smallholder agricultural productivity, expanding agricultural markets and trade, improving natural resource management, and expanding the resilience of vulnerable households to external shocks.

IAPRI’s mandate is to utilise empirical evidence to advise and guide the Government of Zambia and other stakeholders on agricultural investments and policies. The overarching goal of IAPRI’s policy analysis and outreach efforts is to identify policies and investments in the agricultural sector that can effectively stimulate inclusive economic growth and poverty reduction. This is achieved through three core operational activities:

- Producing authentic, impartial, and high-quality research on agricultural, food, and natural resource policy issues in Zambia and the wider Southern African region;
- Integrating research findings into national, regional, and international programs and policy strategies to promote sustainable agricultural growth and alleviate hunger and poverty in Zambia; and
- Supporting the development and strengthening of capacity for policy research, analysis, and outreach of public and private institutions in Zambia.
It gives me great pleasure to present to you IAPRI’s fourth issue of the *Zambia Agriculture Status Report* covering the period January to December 2019.

This report was conceived as a handy resource for use by stakeholders wishing to have up to date data and information about Zambia’s agricultural sector. Policy makers, farmers, private sector, researchers, development partners, and investors would find this report useful as it outlines the potential, key constraints and opportunities of the agriculture sector in the country. The first volume of this series was published in December 2016. All volumes of the report can be downloaded for free at www.iapri.org.zm.

Issues highlighted in this report include: 2018/2019 agricultural production and marketing of major crops; horticulture; fisheries and livestock; Zambia’s food security status in 2019; the agricultural budget; and many more. A brief review of the Farmer Input Support Programme implementation through e-voucher and direct input supply (DIS) system during the 2018/2019 season is also highlighted.

IAPRI welcomes your feedback in order to improve the content of this series.

Chance Kabaghe  
**Executive Director, IAPRI**
IAPRI wishes to acknowledge the generous financial support of the Government of Sweden through the Embassy of Sweden, and the United States Agency for International Development (USAID) in Lusaka, Zambia. We also wish to thank IAPRI researchers and staff who made an input to make the publication of the report possible. We further wish to recognise the positive collaborative effort that has been established between the Government of the Republic of Zambia through the Ministry of Agriculture, Ministry of Fisheries and Livestock, Central Statistical Office, and the private sector in guiding the country’s agricultural sector towards attaining more sustainable economic development.

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<td>Comprehensive Africa Agriculture Development Programme</td>
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<td>CBZ</td>
<td>Cotton Board of Zambia</td>
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<td>CFS</td>
<td>Crop Forecast Survey</td>
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<td>CSO</td>
<td>Central Statistical Office</td>
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<td>DIS</td>
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<td>Electronic Farmer Input Support Programme</td>
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<td>Food Reserve Agency</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GTAZ</td>
<td>Grain Traders Association of Zambia</td>
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<td>Ha</td>
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<tr>
<td>Kg/Ha</td>
<td>Kilograms per Hectare</td>
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<td>MAZ</td>
<td>Millers Association of Zambia</td>
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<td>Ministry of Finance</td>
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<td>Ministry of Fisheries and Livestock</td>
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<td>MT</td>
<td>Metric Tonnes</td>
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<td>MT/Ha</td>
<td>Metric Tonnes per Hectare</td>
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Chapter 1

Overview
Zambia's agricultural sector is the mainstay for many of the country's population. Of the 2,498,971 people employed in both the formal and informal sector across all industries, just over 28 percent are employed by the sector – the highest proportion of all the sectors (CSO 2019). The importance of the agricultural sector is clearly outlined in national development and is backed up by national policy and commitments made towards this. A clear link is made in national policy that in order for the country to achieve Vision 2030 – a prosperous middle income nation by 2030 – there is need to increase labour productivity in the agricultural sector; and gradually transform the current agrarian economy into an industry based economy (MNDP, 2006). This will require investment into the known key drivers of agricultural growth – such as rural infrastructure, agricultural research and development, market information, irrigation and effective markets, and services such as agricultural extension and credit; all of which will require restructuring of public spending to meet this national priority.

1.1 Weather and production
The performance of Zambia's 2018/2019 agricultural season was one that was filled with many challenges that negatively affected production. The season brought to light the seriousness of the impact of climate variability and change on the sector. These impacts led to a reduction in the sector’s growth rate from 9.8 percent in the 2017/2018 season, to minus 21.2 percent in the 2018/2019 season. This is because the continued rain-fed nature of production left the sector vulnerable to crop failure in the Southern and Western parts of the country from the prolonged dry spells. In addition to this, electricity rationing (load shedding) has progressively worsened partly due to these dry spells – which limited hydropower production capacity from Lake Kariba. All this had a negative effect on irrigation potential to stimulate agricultural growth. This was further compounded by limited fiscal space on public spending, particularly on drivers of agricultural growth, due to debt servicing currently ongoing in the country.

1.2 Prices
Generally, commodity prices have been on the increase in 2019, relative to 2018. Some of the push factors include the poor rainfall pattern in the 2018/2019 production season, increased fuel prices, and electricity rationing. The poor rainfall pattern recorded in the 2018/2019 season led to reduced harvest, with resultant supply shortfalls causing maize grain and maize meal prices to go up. Increases in fuel prices and electricity rationing pushed the cost of production up and this increase was transmitted to consumers through increased commodity prices. Electricity rationing affected operations of irrigated agriculture as some commercial farmers could not irrigate regularly due to power outages. As a result, production went down, exerting additional upward pressure on commodity prices.

1.3 Food Reserve Agency (FRA) Purchases
At the onset of the maize marketing season, FRA announced that it intended to purchase only 300,000 metric tonnes (MT) to supplement its carryover stock from the previous marketing season. Because of the tight maize supply in the country and heightened competition from the private sector, FRA was offering an unusually high price of ZMW 110 per 50kg bag, a 57 percent increase from the previous seasons’ price of ZMW 70 per 50 kg bag. FRA’s purchases started on a slow note and this trend continued throughout the season. By the end of October 2019, FRA had only purchased about 86,540 MT, representing a paltry 29 percent of the targeted 300,000 MT for the season. Out of the total FRA purchases, 41 percent was from Northern Province, in distant second place was Luapula with 28 percent, and in third place was Muchinga at 18 percent, with the least purchases coming from Southern and Western Provinces accounting for less than 1 percent combined. The low purchases by FRA in Southern and Western Provinces is attributed to the low output experienced in the provinces due to severe drought conditions experienced in the 2018/2019 production season. In fact, by mid-June, FRA had to close down 15 satellite buying depots in Southern Province and channel the resources to high flow areas like Muchinga and Northern Provinces.
1.4 Electronic Farmer Input Support Programme (E-FISP)
In the 2018/2019 production season, E-FISP constituted 60 percent of the total Farmer Input Support Programme (FISP), but this was reduced to 40 percent in the 2019/2020 production season. The main reasons cited for down-scaling E-FISP had to do with operational challenges, and prominent among these were limited access to information technology, telecommunications connectivity, and challenges in the provision of financial services. Despite the identified roll-out challenges, the programme scored a number of successes including; reducing the overall cost of FISP distribution to Zambian farmers, improved timeliness of input delivery, and enhanced participation of rural agro dealers thereby enabling rural employment creation. Stakeholders in the sector, including cooperating partners, Non-Governmental Organisations (NGOs), researchers and farmer organizations, have continued to advocate for government to revert to full scale E-FISP implementation.

1.5 The 2020 Agricultural Budget Highlights
The total budgetary allocation to the agricultural sector for 2020 fell by 25 percent from ZMW 5,321 million in 2019 to ZMW 3 million in the 2020 budget. This limited fiscal space in public spending is due to debt servicing that is going to take up 34 percent of the national budget in 2020.

1.6 Fisheries and Livestock
There was an overall increase in fisheries and livestock production in 2018. For capture fisheries, there was a 1.32 percent increase in the numbers and the same was observed for aquaculture production at 1.37 percent. Pigs and Goats showed the largest gains in livestock production at 19.35 and 11.84 percent respectively. Some of these gains can be attributed to increased funding to programmes that promote productivity and markets.
Chapter 2

Performance of the Zambian Agricultural Sector in 2019
2.1 2018/2019 Agricultural Season
The 2018/2019 agricultural season was hit with serious rainfall deficits, particularly in the western and southern parts of the country, that led to a sharp reduction in the national cereal production and worsened food insecurity nationwide (FAO, 2019). This was not unexpected, as a ministerial speech in November 2018 highlighted the fact that the 2018/2019 season was expected to have some prolonged dry spells that would result in insufficient water supply for domestic use, agriculture and power generation, among other impacts (Ministry of Finance (MoF), 2019). Figure 1 shows the vegetation health index (VHI) in the country as at March 2019 and the reported prevalence of drought in the 2018/2019 season (Figure 2), demonstrating the poor performance in the western, southern and central parts of the country. The impact of these dry spells saw a 16 percent reduction in maize production and an overall decline in the production of most of the crops; with Southern and Western Provinces having been the worst hit (CSO, 2019).

Historical data on rainfall and projections for rainfall and temperature in Zambia show that there will be more extreme climatic events that include less rainfall and higher temperatures (Figure 3). As has already been experienced in the 2018/2019 season and the recent past, areas in the Southern, Western, Eastern and North-western parts of the country will be the most affected (Hamududu and Ngoma, 2019).
The decline in crop production experienced in the last two seasons can be attributed to the country’s continued dependence on rain-fed production. The impact of this has also been seen by the unprecedented load shedding that the country experienced, and has continued experiencing with power cuts going as long as over 15 hours a day. This has implications on efforts to move towards irrigation because having inadequate electricity supply means boreholes and pumps cannot function if they are powered by electricity. This however, creates an opportunity to invest in alternative energy sources as the current power situation does not look like it will get better anytime soon.

This decline in production has also led to the continued trend of Zambia being grouped with countries such as Yemen, Chad and Madagascar as having alarming levels of hunger; but it has been recognised that despite this dire ranking, the country is taking on more legislative action in relation to climate change and identifying funds that can help with mitigation and adaptation (von Grebmer et al. 2019).

Figure 3: Historical baseline data (1961-1990) and projected changes by 2050 for rainfall in Zambia

Source: Hamududu and Ngoma, (2019)

2.2 Progress towards CAADP Targets
Zambia’s commitment to the Comprehensive Africa Agricultural Development Programme (CAADP) in transforming the agricultural sector has been a challenge for the country. On average, the country has not been able to meet the 10 percent allocation to the agricultural sector through annual budgetary allocations in the last decade. The contribution of agriculture to Gross Domestic Product (GDP) has seen a drop in the last decade.

In monitoring the commitments to allocating at least 10 percent of the national budget to agriculture, sustaining a 6 percent annual agricultural GDP growth, and responding to the country’s need to transform the agricultural sector and meet the food security needs; this section looks at the progress that has been made.

2.2.1 Agricultural Gross Domestic Product
The contribution of Zambia’s agricultural sector to GDP has been steadily decreasing from the 2000 contribution of just over 16 percent. Despite this reduction, it maintained the above 6 percent GDP growth for the better part of the last decade but has reached the lowest in 2018 at just over 2 percent (Figure 4).
The trend for value added per worker has followed the same trajectory with the lowest being in 2018.

2.2.2 Declining agriculture contribution to GDP

The influence of climate variability and change, coupled with the largely rain-fed production prevalent in the country, has contributed to the fluctuations in agriculture’s contribution to GDP in Zambia (Figure 5). This is evident in the sharp drop in contribution in years where Zambia has experienced prolonged dry spells or other extreme climatic events. The 2018 percentage shows a similar trend, with a drastic drop to -21.2 percent due to the crop failure as a result of prolonged dry spells mainly in the Southern and Western Provinces.

2.2.3 Quality of the Agricultural Sector Budget

The annual budgetary allocation to the agricultural sector since 2011 shows that the country has not yet been able to meet the 10 percent CAADP commitment to the sector. The highest allocation to the sector in the recent past was in the 2015 and 2017 budgets at 9.3 and 9.4 percent respectively (Figure 6). There has been a steady decline since 2017 with the 2020 budget being the lowest yet in the past decade at 3.7 percent. The decline in the budgetary allocation by about 25 percent is mainly due to the high debt servicing which has taken a toll on public spending. The cost of servicing national debt was reported to take up about 34 percent of the National Budget; a figure that is higher than the total allocations to agriculture, social protection, and health combined - and it is projected that there is more borrowing that will be done in 2020, at a cost of about ZMW 31 billion (Kuteya, 2019).

The repayment of three Eurobonds that have been issued by Zambia are due in 2022, 2024 and 2027. This means high debt servicing will remain a problem in the country for the next few years.

The country needs to introspect into how to service these bonds without compromising on investing in other key drivers of economic growth. The rising international interest rates on the Eurobonds and other contracted non-concessionary loans will make debt repayment difficult as service costs are projected to double by 2020, and further exacerbate the challenges being experienced now in loan repayments for the foreseeable future (Saungweme and Odhiambo, 2018).

Similarly, the 2020 allocation to the Ministry of Fisheries and Livestock (MFL) and Ministry of Agriculture (MoA) have declined (Figure 7). Data from MoA shows that in 2019, only 49 percent of funds allocated to poverty reduction programs were disbursed as at September 2019.

This raises the concern that the allocation and release of funds is insufficient to support broad-based public investments that can stimulate the country’s agricultural sector and make economic gains.

![Figure 6: Share of Agriculture budget/spending to total government budget](image)

Source: MoF various years; MoA various years.
**Notes: Excludes allocations via other ministries**
The continued heavy spending towards the Food Reserve Agency (FRA) and Farmer Input Support Programme (FISP) can be seen in the 2020 budget with just below half of the budget being allocated to these two programmes. The proportion allocated to these programs has been steadily reducing in the last few years (Figure 8), with the 2020 allocation being the lowest since 2017 i.e. from 69.9 percent in 2017 to 49.9 percent in 2020. This is a positive step towards higher spending in poverty reduction programmes that benefit a larger proportion of the country’s poor. The proportion of funds dedicated to these programs still remains too high.
Chapter 3

Improved Technology use
Adoption of improved agricultural technology by farmers can contribute to an economically efficient farm sector, and to the financial viability for farmers through improved production and productivity. In this section, we look at the performance of the agricultural sector in terms of the two key productivity enhancing technologies: use of fertilizer and improved seed.

### 3.1 Fertilizer use

Figure 9 shows the percentage of households that used fertilizer for the period 2003 to 2019. The figure also shows the trends in fertilizer application rate for both users and non-users.

Nationally, about 58.4 percent of the smallholder households reported using fertilizer in the 2018/2019 agricultural season, an uptick from 51.3 percent reported in the previous season. As is typical in the Zambian smallholder subsector, most of the fertilizer that was used in 2018/2019 season was on maize fields. Fertilizer use varied by province, with Copperbelt Province having the highest percentage (77 percent) of farmers that used fertilizer, and closely followed by Muchinga Province (71 percent) (Figure 10). Similar to previous years, Western Province had the least percentage of farmers that used fertilizer, with only 12 percent reporting fertilizer use in the 2018/2019 agricultural season.

The total fertilizer used among the smallholder farmers in Zambia increased significantly by 77 percent to 370,181 MT; up from 209,233 MT in the 2018/2019 agricultural season (MoA and CSO, 2019). Despite the rise in fertilizer use among smallholder farmers in the 2018/2019 agricultural season, total production of maize and other crops dropped, mainly due to the drought conditions (prolonged dry spells) experienced in the southern and western regions of the country.

In the past 10 years, there has been a general upward trend in the percentage of farmers reporting using fertilizer, as well as the rate of fertilizer application as shown in Figure 9. The average fertilizer use per hectare (Ha) in 2019 increased to 117 Kilograms per Hectare (Kg/Ha), up from 82.1 Kg/Ha across all smallholders. However, when we net out non-users, fertilizer application rate among fertilizer users was significantly higher at 201 Kg/Ha.
3.1.1 Electronic Voucher -FISP Implementation

The electronic voucher system has been in place since the 2015/2016 agricultural season. It has been implemented in a bid to transform the agricultural sector by having an input subsidy programme that addresses the diverse needs of different kinds of farmers country-wide. The E-FISP started as a pilot in the 2015/2017 and 2016/2017 agricultural seasons. This was followed by a rolling out of the program to the whole country in the 2017/2018 agricultural season. However, citing some implementation challenges such as limited access to information technology, telecommunications connectivity, and challenges in the provision of financial services, the government decided to scale down the E-FISP implementation from 60 percent in the 2018/2019 production season, to 40 percent in the 2019/2020 agricultural season.

The core challenge identified in the previous farming season was that the majority of small agro-dealers had insufficient financial muscle to supply inputs in advance; yet government made these agro-dealers wait for months before paying them for the inputs they supplied to farmers. Despite the financial constraints faced by agro-dealers, they were required to pre-finance the supply of inputs to farmers and this affected their operations. As a result, during the 2018/2019 farming season, E-FISP was deemed to have failed, yet the government could not provide finances up front. Pre-financing of inputs to farmers by agro-dealers has continued during the 2019/2020 growing season.

Despite some of the identified roll-out challenges, the E-FISP programme created an opportunity for Zambia to streamline its spending by reducing the overall cost of FISP distribution to Zambian farmers, and enhanced timely delivery of inputs. It also created opportunities for agro dealers to enhance rural economies and employment creation, as well as giving the farmer an opportunity to choose what inputs they wanted to redeem. Stakeholders in the sector, including cooperating partners, NGOs, researchers and farmer organizations, have continued to advocate for government to revert to full scale E-FISP implementation.

3.1.2 Direct Input Supply system

The DIS is implemented through a digitalised card-less system that is linked to the Zambia Integrated Agriculture Management Information System (ZIAMIS) operated by the Smart Zambia Institute (SZI). The only significant difference between the
DIS and the traditional FISP is that while the DIS is digitized, the traditional system was paper-based. Therefore, the objectives of the E-FISP cannot be realized under the DIS.

Under the DIS, the MoA through a tender process awarded a single distributor of fertilizer and seed in each district. Whilst two lead farmers or chairpersons of farmer groups/cooperatives redeemed inputs from the fertilizer and seed distributors on behalf of cooperative group members. The DIS system does not provide farmers with an option to choose the inputs of their choice, instead they are only able to redeem fertilizer and seeds (hybrid maize seed, sorghum, soya beans and groundnuts).

3.2 Use of Improved Seed

Figure 11 provides a comparison of the percentages of households using improved seed varieties over the period 2002 to 2019. Nationally, there was an uptick in the use of improved seed, with about 66 percent of the smallholder households reporting having used improved seed in the 2018/2019 agricultural season (irrespective of crops produced), compared to 62 percent in the 2017/2018 agricultural season; representing a 4 percentage point increase. For maize, the percent of smallholder households using improved seed increased substantially to about 70 percent, up from 54 percent recorded in the previous agricultural season, representing an increase of 16 percentage points.

Generally, there has been an upward trend in improved seed use in Zambia. Between 2002 and 2019, the number of farm households using improved seed increased by 25 percentage points. The highest was 2017, while the lowest was in 2004. The general increase in improved seed use over the years is attributed, partly, to increased private sector participation in the seed sector, which has contributed to the adoption of improved seed use among smallholder farmers. Also, the traditional FISP might have contributed to this increase, especially that hybrid maize seed is part of the subsidised package. Further, the governments’ Food Security Pack (FSP), which distributes free hybrid maize seed to vulnerable households, may have partly accounted for this increase in use of improved seed.

![Figure 11: Improved seed use 2002 - 2019](image)

Source: MoA, 2002-2019
4.1 Agricultural Imports and Exports

Figure 12 shows the value of agricultural imports and exports as well as the ratio of imports to exports in Zambia for the period 2012 to 2019. Between 2012 and 2016, the value of agricultural imports stayed almost consistent at around USD 420-440 million, but dropped to USD 320 and USD 336 million in 2017 and 2018 respectively. Whilst the value of agricultural exports dropped to USD 403 million in 2019, down from USD 443 million in 2018. Generally, the value of agricultural exports has been trending downwards since 2012, with the lowest being 2017 when agricultural export value hit USD 396 million.

With regards to the ratio of imports to exports, there has generally been an upward trend, implying that the value of exports had been trending downwards relative to the value of imports (an indication of a declining agricultural trade surplus position for the country). The ratio declined between 2016 and 2018 –indicating higher value of exports relative to imports. However, the ratio reverted to its upward trend in 2019, with 2019 being the highest since 2011. Between 2016 and 2018, there was improvement with the country having an agricultural trade surplus, though this surplus was still far less than the one recorded back in 2012. The increase in trade restrictions on maize is one of the factors accounting for the reduction in the quantity and value of agricultural exports. Apart from maize, disaggregated data by crop and livestock imports and exports for 2019 was ready at the time of publication of this report.

**Figure 12: Agriculture imports and exports, 2011-2019**

Source: ITC Trade Map and CSO, Various Years  
**Note: The 2018 and 2019 figures are only for January to September**
4.2 Maize Trade in 2019

Figure 13 shows the national maize stock levels held by various players in the country as at 30th October 2018. At the beginning of the 2019/2020 marketing season in May 2019, Zambia had total carryover maize stocks amounting to 475,042 MT, which was sufficient to offset the projected reduction in maize supply to 2 million MT from 2.39 million MT from the 2018/2019 harvest. The FRA entered the 2019/2010 marketing season with 600,000 MT of maize –100,000 MT more than the set target of 500,000 MT Strategic Grain Reserve (SGR). As at end of October 2019, the country’s maize stocks were reported to be approximately 793,190 MT, 14 percent lower than the previous season’s 926,911 MT at the same time. This was the known total stock held by registered members of Grain Traders Association of Zambia (GTAZ), Millers Association of Zambia (MAZ), Zambia National Farmers Union (ZNFU), Stock Feed Manufacturing Association (SFMA), as well as FRA. Excluding any stocks held by non GTAZ and MAZ members and maize stored by smallholder farmers, this stock is enough to last the country until the next harvest in May 2020, assuming a monthly drawdown of 120,000 MT.

In regards to trade, there have been very limited formal exports to date due to the export ban imposed in May 2019. Most of the exports have been in the form of maize bran destined for South Africa, Botswana and Namibia. By end of August 2019, Zambia had only formally exported a total of 41,181 MT of maize grain and related products. This is 14 percent higher than maize exports for the same period in the 2018/2019 marketing season. This could have been higher given the current tight maize market in the region.

Experiences from previous seasons have shown that restrictive trade policies have often denied farmers the opportunity to benefit from high prices and the country is losing potential export revenue (Chisanga et al. 2018). With the frequent El Niño and La Niña weather events in the region, it may be prudent to enhance Zambia’s capacity to supply the region with maize. Thus, efforts to safeguard national food security should not undercut Zambia’s ability to export its surplus maize to neighbouring countries. A transparent and consistent trade policy will incentivize the private sector to invest in the production and marketing of the staple crop. Also, the solution lies in increasing farmers’ productivity—a sure way of sustainably securing Zambia’s food security and impetus to embrace consistent open maize trade policy.

Figure 13: Maize stocks held by various players January to October 2019

Source: Stocks Monitoring Committee (2019)
Chapter 5
Sector Performance
5.1 Maize
Despite a record high area cultivated of over 1.5 million Ha, maize production in 2018/2019 agricultural season was forecast to drop by 16 percent, to 2,004,389 MT from a harvest of 2,394,907 MT in the previous year (Figure 14). This was mainly due to drought conditions (mostly characterized by prolonged dry spells between January and March 2019) experienced in some of the major maize production regions of the country - mainly Southern, Western, Central and part of Eastern Provinces.

With regards to productivity, there was a projected increase at national level in maize yields from 1.72 MT/Ha in the previous season to 2.35 MT/Ha in 2018/2019 production season. However, among smallholder farmers, maize yields were projected to drop marginally from 1.87 MT/Ha to 1.62 MT/Ha.

Similar to the previous season, districts located in the southern and western parts of the country experienced the largest decline in maize production. These include districts in the Southern, Eastern, Lusaka, Western, and parts of Central Provinces, where maize wilting was highest, as a result of the prolonged dry spell. The reduction was subdued in the northern parts of the country as the region received normal to above normal rainfall. However, some districts in the northern parts of Zambia\(^1\) experienced excessive rainfall leading to some crop losses towards the end of the rainy season.

Zambia's 2019/2020 food balance sheet indicated a total maize supply of 2,479,791 MT, which included a carryover stock of 475,402 MT from the previous season. Given the total national maize requirement of 2,384,610\(^2\) MT, which includes human, industrial, strategic reserves and structural cross-border trade, Zambia was expected to have an exportable maize surplus of about 95,181 MT, a drop from previous season's 341,313 MT.

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\(^1\)Including districts in Northern Province, Muchinga, Copperbelt, North-western, Luapula, and parts of Central Province falling in agro-ecological region III

\(^2\)Minimum informal exports based on border monitors’ reports are about 2,500 MT per month. However, as border monitors are not able to capture all informal exports due to the enormity of illegal crossing points on most of the borders, we double the reported figures to adjust for unobserved informal exports.
Maize price trends in the 2019/2020 marketing season exhibited a distinct pattern from the previous season. Whereas during the last season prices declined between March and June as the new harvest was rolling in, prices in the 2019/2020 season maintained an upward trend from January through the harvest period to October, owing to the much-reduced maize surplus on the market, both domestically and in the region (Figure 15). Comparable to last year, October 2019 maize grain prices were 86 percent higher during the same period. One distinctive feature of the current marketing season is that maize market prices began rising much earlier in the season and remained bullish throughout the season. While this is a reflection of limited grain supply on the market, it may also be driven by speculative behaviour by some traders and farmers with access to storage facilities waiting for the prices to rise further, before they can offload the grain on the market. As expected, high maize prices were transmitted to mealie meal prices, with a 25kg bag of breakfast meal selling between ZMW 150 – ZMW 180 by November 2019. As expected, mealie meal prices may start to rise as the hunger season approaches due to a tightening of maize supply.

Figure 15: Maize Wholesale and Mealie Meal Prices for the Period May 2018 – November 2019

Source: CSO and IAPRI market price information system (2018 and 2019); GTAZ 2019/2020 reference grain prices.
5.1.1 Extent of participation of private sector in maize marketing

Comparable to the 2018/2019 maize marketing season, the 2019/2020 season was characterized by active private sector participation, with an early entry in the market around April to early May. The private traders included aggregators for millers, animal feed manufacturing companies, medium scale traders and a myriad of small-scale individual traders. This can be attributed to the announcement by FRA that it was scaling back its purchase volumes from 500,000 MT to 300,000 MT. Stakeholders welcomed this development as it will create jobs and create fiscal space for other critical public investments in agriculture. To ensure there is confidence about food (maize) security in a private-sector led market, government should facilitate the development of better market information as well as further reform the FRA to ensure that it holds suitable reserves and can release them through a targeted approach to deficit areas. The operationalisation of the Zambia Grain Information System (ZAGIS) needs to be hastened in order for the country to have correct and timely stock and market information.

The 2019/2020 marketing season opened with high prices compared to the 2018/2019 season. By the time FRA announced its price of ZMW 110 per 50 Kg bag, prevailing market price averaged ZMW 115 per 50 Kg bag. Maize grain prices continued on an upward trajectory immediately FRA announced its buying price. Farmers were enticed by this upward price trend and the spot cash payments, hence supplying more maize to private sector buyers than FRA. The bulk of maize the FRA managed to purchase in areas with private sector presence was from what people in those areas called “loyalists”. These were people/farmers who felt obligated to supply maize to FRA as their contribution to government stocks, which are used to respond to local food shortages during lean seasons. However, due to the higher price offered by the private traders, they could only supply few bags to FRA and the rest to private traders. As should be the case, FRA purchased most of its maize from farmers located in remote areas with little to no private sector presence.

A large number of commercial millers deployed a strategy of mobilizing agents/aggregators to secure maize grain on their behalf. These agents were very effective in securing grain. In a bid to secure as much grain as they possibly could, some traders provided shelling equipment and packaging materials at the farmer’s homestead. In the Northern parts of the country close to the Zambia - Tanzania border, Tanzanian traders bought whole maize fields before harvest, provided shelling equipment and packaging materials to the farmers, and offered a much higher price than FRA. This resulted in limited maize grain movement from surplus to deficit areas.

Even in areas where there was surplus production such as Mpongwe District, maize grain prices were higher than usual owing to the high demand and favourable price offered by local millers and feed manufacturing companies within the district. Most stakeholders interviewed in Mpongwe District indicated that most traders and farmers supplied directly to Novatek (a feed manufacturing company) as the company was offering a higher price than the parity price in deficit areas such as Southern and Western Provinces. The high demand and favourable prices in Mpongwe limited the amount of maize leaving the district to deficit regions.

5.2 Wheat

In the 2018/2019 production season, crop forecast preliminary estimates indicated total wheat production of 151,850 MT, an 11 percent drop from the 2017/2018 production of 171,424 MT. However, more recent provisional post-harvest estimates from ZNFU indicated that wheat production in 2019 was expected to be about 207,772 MT (Stocks Monitoring Committee, 2019). This large variance between what was projected by the MoA and ZNFU recent estimates is indicative of the data challenges in the agricultural sector and the need for the country to invest in statistics to enable effective government planning. Given the estimated national wheat annual requirement of about 414,750 MT for the country, Zambia will need to import more than 200,000 MT to fill the deficit.

Figure 16 shows the wheat production, area planted, and yield in the last seven (7) years.
5.3 Soya beans

In the 2018/2019 production season, soya beans production was estimated to be 281,389 MT, a 7 percent drop from previous season’s 302,720 MT. Area planted to soya beans marginally increased to 236,601 Ha from 231,630 Ha, while average soya yields reduced from 1.52 MT/Ha to 1.10 MT/Ha (see Figure 17). The increase in production was mainly as a result of increased area planted as farmers responded to the favourable prices received in the previous season.

In October 2019, average soya beans wholesale prices—in USD terms—in Lusaka were USD 410/MT, a 16.5 percent drop from previous season’s USD 490/MT during the same period (GTAZ 2019). Prices paid to farmers in the Copperbelt ranged from ZMW 4.3/Kg to ZMW 5.2/Kg, while in Central Province, they ranged from ZMW 3.5 to ZMW 4.6/Kg. In Eastern Province, soya beans prices ranged from ZMW 4 to ZMW 5/kg, higher than previous season’s range of ZMW 3.5 to ZMW 4.2/Kg. Most grain traders and off-takers competed vigorously in buying the commodity directly from farmers and through agents.

Expansion of the crushing capacity by some processors such as Global Industries on the Copperbelt with current installed capacity to crush 360,000 MT of soya beans per year has significantly contributed to the increase in national demand for the commodity. There are reports that the shortfall in soya beans supply and increased competition has culminated in most processing plants operating at below capacity, with some having to face the threat of plant closure before the end of year. The soya market is also reported to be facing competition from illegal imports of processed edible oils (Lusaka Times, 2018).
Figure 17: Soya bean production, area planted and yield, 2012-2019

Source: MoA, 2012-2019

5.4 Cotton

According to the 2019 CFS, seed cotton production was 72,508.3 MT, down from 88,219 MT in the 2017/2018 season, representing an 18 percent decline (Figure 18). The Cotton Board of Zambia (CBZ) conducted a post-harvest survey which indicated that cotton production in the 2018/2019 season was 66,314,678 MT, which was 8.5 percent below the CFS estimates. The discrepancy between 2019 CFS and CBZ post-harvest estimates was much lower than the 32 percent difference recorded the previous season.

The area planted based on CFS results was estimated at 139,966 Ha, representing an increase of about 18 percent from previous season’s 118,763 Ha. Although farmers increased their area allocation to cotton, there was no corresponding increase in cotton production as a result of low productivity (Figure 18). Cotton yields declined by 36 percent from 0.74 MT/Ha to 0.47 MT/Ha. Generally, cotton yields have been on the decline since 2016.

The prolonged dry spell did not affect cotton farmers to the extent that it affected other crops. Based on 2019 CFS estimates, the number of households growing cotton slightly declined from 8.9 percent during the 2017/2018 agriculture season to 7.7 percent in the 2018/2019 season. The increasing number of competing crops such as soya beans has resulted in stagnation of the number of farmers growing cotton. Currently, almost 100 percent of cotton production in Zambia is produced by smallholders as a rain-fed crop. However, the Cotton Board has indicated that there are trials currently going on in Zambia to engage commercial farmers to produce the crop under irrigation, with an initial total area of 500 Ha. If successful, this strategy may help to increase total production.

During the 2019/2020 marketing season, all cotton companies were buying seed cotton at ZMW 3.7/kg, with the exception of Mt. Meru which paid farmers ZMW 3.8/Kg. Being a new entrant in the cotton industry, Mt. Meru paid one ngwee extra to try to attract more deliveries to its depots.

As at November 2019, average international lint price stood at USD 1.69/Kg, down from USD 1.91/Kg during the same period in 2018. Projections are that international prices of lint cotton are going to increase further in the 2020/2021 marketing season.
With regards to market share, NWK Agri-Services/Louis Dreyfus Company (LDC) still remains the cotton sector leading company at 36 percent, followed by Continental Ginneries at 19 percent, and then Alliance Ginneries at 14 percent. Eastern Province is the main producing province accounting for 55 percent of all cotton produced in Zambia followed by Central Province at 20 percent.

The pulling out of some key investors in the cotton subsector including Cargill has not had a major impact on the cotton industry. This is because companies such as Continental Ginneries have expanded the number of farmers supported, whereas Parrogate, which purchased the cotton infrastructure from Cargill, has continued supporting farmers although the number of farmers has reduced.

**Figure 18: Cotton production, area Planted and yield, 2013-2019**

Source: MoA, 2013-2019
5.5 Mixed Beans
Mixed beans is one of the six most widely grown crops in Zambia, apart from maize, groundnuts, sweet potatoes, cassava and rice. As a legume, mixed beans provides protein and also supports incomes for smallholder households. The proportion of smallholders growing beans has remained the same from 2017/2018 to 2018/2019 agricultural seasons at 13.1 percent.

However, production of mixed beans increased by about 12 percent from 52,351 MT to 58,705 MT. This was due to a substantial increase in the area planted from 84,566 Ha in 2017/2018 to 100,279 Ha in 2018/2019. However, there was a marginal drop in yield from last season’s 0.62 MT/Ha to 0.59 MT/ Ha, representing a 5.4 percent drop. Figure 19 shows the trends in area planted, production and yields.

![Figure 19: Mixed beans, area planted, and yield, 2013-2019](image)

Source: MoA, 2013-2019
5.6 Groundnuts

Groundnuts are one of the most widely grown smallholder crops in Zambia, with 45.7 percent of households reporting that they grew the crop in the 2017/2018 agricultural season compared to 48.0 percent in the previous season. Groundnuts production has been on an upward trend since 2015 (Figure 20). However, due to drought conditions during the 2018/2019 agricultural season, production fell by 28 percent. Area planted decreased slightly from 284,708 Ha in 2018 to 276,383 ha in 2019, representing a 3 percent drop. Also, groundnut yields declined for the first time since 2015 dropping from 0.64 MT/Ha in 2018 to 0.47 MT/Ha in 2019, representing a 26 percent drop. This is indicative that production was mainly driven down by yield decline, and much less by the drop in area planted-which only fell by 3 percent.

The groundnuts value chain offers great potential for increasing incomes of smallholders and particularly women farmers who dominate the production sector. Groundnuts are also key in addressing the malnutrition challenges that Zambia faces at the moment by offering diversified diets especially among children, whose average stunting and wasting rates are high. There are immense economic benefits for the whole country if Zambia can become a major exporter of groundnuts. Strong linkages to agro-processing of groundnuts into peanut butter promises to increase/create jobs along the value chain. However, these opportunities have remained under-exploited. Among the major constraints facing groundnuts are low yields, limited access to improved seed, and high aflatoxin levels.

![Figure 20: Groundnuts production, area planted and yield, 2013–2019](source: MoA, 2012-2019)
5.7 Horticulture
The horticultural sector in the 2019/2020 marketing season was characterised by high levels of price volatility in the market, particularly for tomatoes, and rape. The high prices recorded in the first quarter of the year are attributed to reduced supply caused by prolonged dry spells experienced during the rainy season.

Compared to the previous season, the price volatility in 2019 was relatively less. Horticulture crops wholesale price data remains a challenge. However, traders at Soweto market indicated that the tomato price was highest in the first quarter of 2019, where a box of tomato was on average trading at ZMW 250. Traders indicated that the high tomato price recorded between January and March was caused by reduced supply following the poor rainfall season in 2018. The high tomato price motivated more growers to invest in drip irrigation. As a result, tomato production increased and caused prices to drop from April to October 2019, due to oversupply of the commodity.

Key lessons learned from the market experience were that there is need to:

1) invest in cold chains to increase the shelf life of perishable horticultural products;
2) invest in processing facilities to process tomatoes into tomato sauce and other products and;
3) invest in commission-based wholesale markets similar to the ones in South Africa for enhancing price discovery and market predictability.

Figure 21 shows retail prices for rape, tomato, cabbage and onion price trends for the period January to November 2019. The figure indicates that the highest retail price for tomato was recorded at the beginning of the second quarter of 2019. This period also coincides with the time many farmers became attracted to growing tomatoes owing to the favourable price at the time, a trend which later resulted in oversupply causing a drop in prices from May to September. Retail price for rape sustained an upward trend from January to about May when they began to let off, as a result of increased supply from the irrigated crop. Onion and cabbage price were relatively stable, with onion price increasing steadily from January through to July before beginning to drop slowly in August.

![Figure 21: Average retail prices of selected horticultural products in Lusaka in 2019](source: CSO monthly commodity prices (2019))
A feasibility study commissioned by IAPRI and Musika in 2018 with the aim of assessing the viability of horticulture wholesale markets investments in Zambia had a number of key findings for the horticultural sector. The main challenges identified by the study were the unregulated, non-transparent and uncompetitive informal open air markets; high horticulture supply inconsistencies which result in high price volatility and huge post-harvest losses; and limited cold chain facilities and unstructured marketing systems. The study proposed, among other things, changes to the horticulture marketing structures and environment by introducing a sales commission-based model for marketing fruits and vegetables in Zambia, similar to the South African system. This model: 1) protects all players, stimulates competition, transparency, efficiency and security of all transactions; 2) allows predefined commissions for regulated brokers and market authority; and 3) provides a competitive marketing system and trading infrastructure, including a computerized sales system, cash collections, cleaning and security. Figure 22 shows aggregated estimates of production, sales and consumption of horticultural products (fruits and vegetables) for selected years since 2015 and 2020 projections. There has been steady growth in the production, sales and consumption of horticultural products in Zambia over the years and this trend is projected to continue in the medium term. One major push factor is the move towards healthy eating, with fruits and vegetables forming the bulk of the ingredients for healthy foods. Annual consumption is estimated at 1 million MT, worth over USD 330 million, and this is estimated to increase to 1.4 million MT worth USD 500 million by 2020. Production is estimated at 1.4 million MT, worth USD 235 million, and is projected to increase to 2.2 million MT by 2020 (IAPRI and Musika, 2018).

Figure 22: Fruits and Vegetables production, sales and consumption, 2015-2020

Source: IAPRI and Musika (2018)
5.8 Fisheries and Livestock

The Fisheries and Livestock sector has been brought to the spotlight in recent years with renewed interest in aquaculture and livestock development - especially in light of climatic changes that have made crop production difficult, as a way of promoting resilience and agricultural diversification. This has been seen in the establishment of programmes such as the Zambia Aquaculture Entrepreneurship Project and the Small Ruminants Value Chain Support Project in the 2019 agricultural budget.

These two projects are a positive move towards commercialization of smallholder livestock production for enhanced livelihoods and meeting the demand for fish locally. However, with the reduction in overall budget to the agricultural sector, the proportion of the announced budget going to fisheries and livestock is only 12.3 percent (Figure 23), a drop from 21.8 percent in the 2019 budget.

Figure 23: Allocation to Ministry of Agriculture versus Fisheries and Livestock, 2015 to 2020

Source: DoF (2019)
5.8.1 Livestock

The statistics presented in this section are from the latest report on Fisheries and Livestock from the MFL in 2019. The livestock sector showed growth in 2018. The highest increase was seen in Pigs and Goats at 19.35 and 11.84 percent respectively (Figure 24). This growth was also seen in livestock products (Table 1). The growth in the sector was triggered by more programmes focused on enhancing livestock productivity and addressed some of the constraints that have been identified in the past (DoF, 2019). Poultry also experienced a 10.31 percent increase from 104,310,221 in 2017 to 115,066,750 in 2018.

![Figure 24: Livestock population 2017-2018](source: DoF (2019))

<table>
<thead>
<tr>
<th>Type of Product</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk (MT)</td>
<td>1,179,000</td>
<td>1,686,400</td>
</tr>
<tr>
<td>Eggs (000)</td>
<td>1,610,484</td>
<td>1,642,693</td>
</tr>
<tr>
<td>Hides (MT)</td>
<td>335,160</td>
<td>345,549</td>
</tr>
<tr>
<td>Beef (MT)</td>
<td>5,307,201</td>
<td>6,103,281</td>
</tr>
<tr>
<td>Pork (Kg)</td>
<td>523,839,833</td>
<td>555,270,223</td>
</tr>
<tr>
<td>Poultry (MT)</td>
<td>4,821,790</td>
<td>5,111,098</td>
</tr>
</tbody>
</table>

(Source: DoF (2019))
Some key activities in 2018 that helped grow the livestock sector included the continued development of livestock infrastructure such as Livestock service centres, Liquid Nitrogen plants for artificial insemination, Livestock breeding centres, and Milk Collection Centres. Some milestones included the completion of 103 Livestock Service Centres, with 48 still under construction, and completion of six satellite artificial insemination centres in various provinces – with five in different stages of completion (DoF, 2019).

5.8.2 Fisheries

The total production in capture fisheries saw an increase of about 1.32 percent in 2018 from 88,075 MT in 2017 to 89,234 MT (Figure 25). There has been an upward trend of production particularly in the last five years. This trend has been similar for aquaculture production with an increase from 21,567 MT in 2017 to 29,565 MT in 2018.

Figure 25: Fish production 2005 - 2018

Fisheries production as a whole made good progress in 2018, especially with the support of various programmes that focused on youth and women empowerment such as the Zambia Aquaculture Entrepreneurship project and the Zambia Aquaculture Development Project. However, challenges have continued to impede growth in the sector and these are summarised in Box 1.

**Box 1**

**Challenges in public sector fisheries development**

- **Inadequate financing:**
  
  Funding towards MFL has continued to be low and has seen an even lower allocation for 2020. This is further exacerbated by low disbursement rates of about 30 percent, of which the majority (94 percent) went towards operational costs.

- **Institutional Constraints**
  
  - Inadequate Extension Services
  - Poor access to finance - Insufficient financial resources allocated to the department by government.

- **Marketing:**
  
  - Limited availability of transport and cold storage facilities
  - Supply Inconsistency of fingerlings
Chapter 6

2020 Agricultural Sector Budget Highlights
6.1 2020 Agricultural Budget

A total of ZMW 3.972 billion was allocated to agriculture in the 2020 national budget. This is a 25 percent share reduction from the 2019 budget. This drop in allocation is mainly from the restricted fiscal space due to current debt repayments towards the three Eurobonds that Zambia contracted. The drop is also reflected in a further movement away from the 10 percent CAADP target with the current percent being 3.7 percent, a 2.4 percentage point drop from 6.1 percent in 2018.

The overall theme of the 2020 budget, as stated in the Minister’s Budget Speech, is to refocus the national resources on priority areas that can achieve more with less, taking into cognizance the tight fiscal space. Table 2 shows the allocation towards poverty reduction programmes and the FRA and FISP programs. Again, as a result of the limited fiscal space due to debt servicing, there has been a further reduction of funds to PRPs.

Allocations to most of the key drivers of agricultural growth – i.e. research and development, extension services, livestock production and disease control, rural infrastructure and irrigation development - also saw a drop in the allocations in the 2020 budget (see Table 3). However, the allocations to agricultural extension saw an increase, a positive step towards strengthening the extension services in the country that have historically been unacceptably low and severely underfunded.

Allocations for research and development in MFL also saw a significant reduction in the 2020 budget. As has been the case in the past, the 2019 disbursement of funds for research and development was very low as shown in Figure 26. This trend threatens to continue in 2020 as well; further hindering progress towards development of the fisheries and livestock sector; one of the key drivers of agricultural growth.

### Table 2: 2018 - 2020 allocations within MoA

<table>
<thead>
<tr>
<th>Key Spending Area</th>
<th>2018 Allocations ZMW million</th>
<th>2019 Allocations ZMW million</th>
<th>2020 Budget ZMW million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty Reduction Programmes</td>
<td>2,852.6</td>
<td>2,108</td>
<td>1,775</td>
</tr>
<tr>
<td>o/w FISP E-Voucher</td>
<td>1,735</td>
<td>1,428</td>
<td>762</td>
</tr>
<tr>
<td>FRA</td>
<td>1,051</td>
<td>672</td>
<td>660</td>
</tr>
<tr>
<td>FISP &amp; FRA Arrears</td>
<td></td>
<td>64</td>
<td>348</td>
</tr>
</tbody>
</table>

Source: MoA – various years (2017, 2018, 2019)

### Table 3: Allocation to key drivers of agricultural growth – 2018 – 2020

<table>
<thead>
<tr>
<th>Key Drivers of Agricultural Growth</th>
<th>2018 Allocated (ZMW)</th>
<th>2019 Allocated (ZMW)</th>
<th>2020 Allocated (ZMW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research and Development</td>
<td>41,556,450</td>
<td>12,444,736</td>
<td>10,625,369</td>
</tr>
<tr>
<td>Rural infrastructure i.e. feeder roads &amp; markets</td>
<td>5,949,860</td>
<td>2,976,308</td>
<td>400,000</td>
</tr>
<tr>
<td>Extension</td>
<td>30,426,957</td>
<td>30,102,584</td>
<td>97,900,000</td>
</tr>
<tr>
<td>Irrigation (GRZ funding)</td>
<td>4,900,000</td>
<td>4,200,000</td>
<td>-</td>
</tr>
<tr>
<td>Irrigation (Donor funding)</td>
<td>437,000,000</td>
<td>622,368,411</td>
<td>143,000,000</td>
</tr>
</tbody>
</table>

Source: MoF 2019
6.2 Budget Speech Highlights

The theme of the 2020 budget as announced by the Minister is “Doing more with less”. A special focus on climate change was also noted, particularly due to the adverse effects it had on the economy as a whole.

Some of the highlights of the 2020 budget are summarised below:

- For the Farmer Input Support Programme 2019/2020 farming season, Government has already commenced the distribution of inputs across the country under the DIS model targeting 60 percent of the one million eligible beneficiary farmers and 40 percent under the e-voucher system.
- To ensure wider e-voucher coverage, Government will speed up the construction of telecommunications towers across the country to address connectivity challenges.
- Government is stepping up farmer sensitisation, vaccinations, movement restrictions and enforcement of biosecurity measures on farms. Further, construction and rehabilitation of dip tanks across the country has continued.
- Government has rehabilitated and stocked 15 livestock breeding centres across the country. The centres provide artificial insemination and other breeding services.
- About 87 livestock service centres have so far been constructed where dipping, branding, vaccination and other disease control services are provided. This is in addition to the setting up of regional and district laboratories, and quarantine centres across the country.
- About 270 farmers have been trained under the Zambia Aquaculture Enterprise Development Project of the more than 1,000 farmers to be trained by 2022 on self-sufficient fish production.

6.2.1 Climate Smart Agriculture Support

- Government will continue to build capacity in the Zambia Meteorological Department to improve early warning systems and improve access to current weather information.
In line with irrigation:
- Mwomboshi Dam in Chisamba District has been completed, while the irrigation scheme will be completed in 2020.
- The works at Lusitu Irrigation Scheme in Chirundu District have reached 85 percent completion, while works at the Musakashi South Irrigation Scheme in Mufulira District has reached 50 percent completion.
- The Government has commissioned Chiansi Irrigation Scheme Project in Kafue District which is expected to benefit over 1,000 households.

Suspension of duty for three years on selected aquaculture equipment to promote agricultural diversification.
Suspension of duty for three years on machinery that is used to produce organic fertilizer for sustainable industrialisation while mitigating climate change.

In light of diversifying the country’s energy mix in light of climate change – a move that directly affects agricultural production; some of the main highlights in dealing with the electricity deficit are summarised below.

- Bangweulu and Ngonye Solar Power Plants generating a combined total of 90 megawatts have been completed and are operational.
- Construction of the 750 megawatts Kafue Gorge Lower Hydropower Station Project and upgrading of Lusiwasi Upper Hydropower Station to 15 megawatts to be completed in 2020.
- Upgrading of Chishimba Falls Power Station from 6 megawatts to 15 megawatts will commence in 2020.
- Zero rating the supply of gas stoves, other gas cookers and gas boilers.

Summary
The climate change threat
Climate change negatively impacts Zambian agriculture:

- **16% reduction** in maize production due to increased rainfall and temperature variability.
- Increases **crop and livestock diseases**.
- Rainfed agriculture exposes the sector and makes farmers **vulnerable to climate shocks**.

The debt challenge tightens fiscal space
Expenditure on agriculture has **reduced by 25%**.

Limits resources available to address climate change.

The challenge is how to ‘do more with less’

Out of the **K3,972 million** allocated to agriculture in 2020...

<table>
<thead>
<tr>
<th>ALLOCATION TO AGRICULTURE (ZMW' million)</th>
<th>% OF AGRICULTURE TO NATIONAL BUDGET</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>9.4%</td>
</tr>
<tr>
<td>2018</td>
<td>8.3%</td>
</tr>
<tr>
<td>2019</td>
<td>6.0%</td>
</tr>
<tr>
<td>2020</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

**K488 million**

**MoA, 87.7%**

**K3,484 million**

MoA, MFL

... **FISP and FRA take up 51% of the more productive investments**

<table>
<thead>
<tr>
<th>Key Drivers of Agric Growth</th>
<th>2017/18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research and Development</td>
<td></td>
</tr>
<tr>
<td>Rural infrastructure i.e. feeder roads &amp; markets</td>
<td></td>
</tr>
<tr>
<td>Extension</td>
<td></td>
</tr>
<tr>
<td>Irrigation (GRZ funding)</td>
<td></td>
</tr>
<tr>
<td>Irrigation (Donor funding)</td>
<td></td>
</tr>
</tbody>
</table>

A roadmap to address climate change

- **BOOST PRODUCTIVITY** by crowdfunding-in the private sector investments in climate-smart agriculture (CSA): 
  - Invest in CSA extension R&D
  - Foster better linkages between research and extension

- **PROMOTE RESILIENCE** among smallholder farmers through diversification and CSA:
  - Maximize on and use savings from reformed FRA / FISP
  - Improve climate resilience in areas more vulnerable to climate change.

- **ALIGN SOCIAL PROTECTION PROGRAMS** (e.g., FISP, FRA, social card transfers) with climate smart investments in the private sector

**FACT**

- **Scaling back the e-voucher by 20% will ensure a predictable maize market**.
- **DIS perpetuates reliance on maize in areas more vulnerable to climate change**.
ADDRESSING CLIMATE CHANGE DURING FISCAL CONSOLIDATION

The climate change threat tightens fiscal space

Proposals for policy direction on climate smart e-voucher

- Ensure e-voucher is implemented in areas with agro-dealer capacity and connectivity - while prioritizing areas vulnerable to climate change.
- Ensure prompt preparations for the season by registering agro-dealers on time.
- Prioritize timely payments to agro-dealers to ease their liquidity constraints.
- Improve e-FISP targeting to maximize savings.
- DIS should not be seen to be a substitute for e-FISP because e-voucher has not yet been fully implemented to achieve its full benefits.

Recommendations

The following actions are needed in order to address climate change amidst a tight fiscal space:

- Maximize on and use savings from reformed FRA / FISP to expand provision of irrigation, extension and market incentives to promote diversification and CSA.
- Government needs to increase funding to CSA/R&D and extension in order to improve resilience to climate shocks.
- Prioritize investments in smallholder irrigation systems in areas more vulnerable to climate change.
- Facilitate investments in production of drugs to prevent and control the increasing burden of climate change-induced animal diseases.
- Align smart subsidies with climate resilience to ensure food security
  - Promote diversification through the e-voucher.
  - Scale up e-voucher in 2020/2021 farming season.
- Continue with FRA reforms and ensure a predictable maize trade policy to crowd-in private sector investments.
- Ensure timely releases of budgeted amounts.

Increasing vulnerability of smallholder farmers to climate change

<table>
<thead>
<tr>
<th>Year</th>
<th>2018 Allocated (K)</th>
<th>2019 Allocated (K)</th>
<th>2020 Allocated (K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>41,556,450</td>
<td>12,444,736</td>
<td>10,625,369</td>
</tr>
<tr>
<td>2019</td>
<td>5,949,860</td>
<td>2,976,308</td>
<td>400,000</td>
</tr>
<tr>
<td>2020</td>
<td>30,426,957</td>
<td>30,102,594</td>
<td>97,900,000</td>
</tr>
<tr>
<td></td>
<td>4,900,000</td>
<td>4,200,000</td>
<td>437,200,000</td>
</tr>
<tr>
<td></td>
<td>622,368,411</td>
<td>143,000,000</td>
<td></td>
</tr>
</tbody>
</table>

SCALE-UP smart subsidies such as E-voucher based FISP
SHIFT from the status quo (DIS) to E-voucher to maximize gains

The following actions are needed in order to address climate change amidst a tight fiscal space:
Chapter 7

Conclusion
In largely agrarian societies such as Zambia, achieving the goals of rapid poverty reduction, national food security, and broad-based income growth will require major productivity growth in agriculture. Achieving productivity growth in agriculture will in turn require a marketing system that encourages smallholder investment in productivity-enhancing technologies and agronomic practices, and that encourages investment in the major agricultural commodity value chains. Unfortunately, the Zambian agricultural budget is still focused on achieving a national maize security objective, and in the process ignores the conditions under which food security is achieved. It is important that investments in agriculture focus on public goods that generate long-run returns. These include research and development investments, extension, and appropriate irrigation technology for the smallholder farmers and infrastructural investments that support market development. Increased efficiency in the production of maize and other crops and livestock is the best means to achieving food security.

Because agricultural production in the country still remains mainly rain-fed, climate induced changes in production, especially in the southern and western regions of the country, call for the need to have adaptation options that are specific to the changing environment. The drought situation in 2019 is likely to repeat itself, further speaking to the inherent risk that climate variability and change pose to the country’s economic activities, and the need to invest in adaptation options that enhance crop and livestock resilience to climate-induced stress.

There is need for the government to reconsider its policy of increasing the amount of FISP that is delivered through the DIS system. This system is not different from the traditional FISP because farmers are still not able to choose inputs appropriate to their agricultural enterprise, it is more costly to implement than the E-FISP, and rent seeking tendencies increase under this system resulting in gross inefficiencies in dealing with public resources. Last but not least, fostering a sustainable open border policy for all agricultural commodities offers Zambia a great opportunity to close its trade deficit as well as expand the market for farmers. If trade is transparently managed and allowed to work without frequent government interventions, the population will begin to appreciate the important role that trade can play in stabilizing staple food prices. Ad hoc export or import bans in a small market such as Zambia tends to increase price volatility, creating disincentives to invest in the agricultural sector. But if the process is transparently managed, it will bring about price stability which benefits both consumers and producers at very low cost to the treasury.
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Ministry of Agriculture (MoA) and CSO. 2019. The 2018/2019 Crop Forecast Survey Results Presentation. Lusaka, Zambia: MoA.


Business Development Unit

Information Segment
**WHO WE ARE**

Indaba Agricultural Policy Research Institute (IAPRI) is a registered Zambian non-profit company limited by guarantee. It is a local agricultural policy research, outreach, and capacity building Institute, with a local Board of Directors drawn from various public and private sector stakeholders.

The Institute which was officially registered on 5th October 2011, and evolved from its predecessor, the Food Security Research Project (FSRP), has been operating in Zambia since 1999. It has a wealth of experience in agricultural policy and rural development related analysis that is unique in Zambia and the Region at large.

**WHAT WE DO**

The Business Development Unit (BDU) caters to the increasing demand for professional services in agricultural development from different stakeholders, and offers a wide range of technical expertise and solutions to the public sector, development partners, and private sector organizations from various industries.

**CLIENT SERVICES**

We are experts in the provision of the following research, training, agricultural and rural development related services:

- Survey Management/Implementation;
- Baseline Surveys;
- Feasibility Studies/ Project Formulation/ Appraisal and Evaluation;
- Needs and Impact Assessments/ Evaluations;
- Broad-Based or Focused Input and Output Market Analysis;
- Livelihood Analysis;
- Rural Employment;
- Capacity Building/Training amongst others and
- Client Customized/Tailored Solutions

Our core competencies are anchored in the following topical areas:

- Agriculture Markets and Trade
- Agricultural Diversification
  - Public Policy and Expenditure
  - Technology and Smallholder Productivity
- Agriculture, Food Security and Nutrition
- Climate Change and Natural Resources Management
- Gender and Youth in Agriculture

We generate evidence to inform policy formulation, implementation, and reform.
OUR PEOPLE

IAPRI has developed a top quality, professional cadre of uniquely qualified, highly trained agricultural economists dedicated to conducting empirical, robust, agricultural policy analysis in Zambia and the region. We are only as good as our people, so we are committed to hiring and bringing you the best experts in the field. Our consultancy team comprises solely of Masters and PhD-level degree holders, who are very familiar with key policy issues, makers and influencers, development partners, agri-businesses, community leaders. Our team is well versed in the intricacies and needs of the Zambian and regional agricultural and rural development sectors, and the plight of smallholder farmers.

WHY PARTNER WITH US?

IAPRI is recognized by government, private sector, development agencies, academia, and other key stakeholders as Zambia’s premier “Agricultural Policy Think Tank.” The Institute has a proven track record of generating and disseminating effective and sound analyses of the agricultural and rural development sector in Zambia, that directly inform and influence on-going debate on agricultural development.

Trust us to deliver! Partner with us!

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The Business Development Manager (munguzwe.hichaambwa@iapri.org.zm)