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 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 Africa 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 second issue of the *Zambia Agriculture Status Report* covering the period January to December 2017.

Zambia received good rains during the 2016/17 agricultural season due to the La Niña weather phenomenon ensuring a bumper harvest. The combination of a good harvest, large carryover stocks, and export ban inevitably had a dampening effect on the local grain prices. The situation was even more precarious because unlike the El Niño year, nearly all of Zambia’s neighbours had some good harvest hence there was no country to export the surplus maize except to East Africa and the Horn of Africa. It is extremely important that a predictable trade policy is maintained for Zambia to become a reliable Regional Food Basket.

The year 2017 has also seen the government at all levels committing to reforming the Farmer Input Support Program (FISP) by implementing the programme through the electronic voucher system throughout the country. In addition, the country launched the Second National Agricultural Policy (SNAP) and the Seventh National Development Plan (7NDP). It is against this background that IAPRI decided to publish this report summarising the status of the agriculture sector in Zambia to inform policy makers and other stakeholders about the constraints and opportunities of the agriculture sector in this a particular year. The first volume was published in December 2016.

IAPRI welcomes your feedback in order to improve the content of this series. We are very thankful for your support during the year under review.

Chance Kabaghe
Executive Director, IAPRI
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<td>7NDP</td>
<td>Seventh National Development Plan</td>
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<td>CAADP</td>
<td>Comprehensive Africa Agriculture Development Programme</td>
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<tr>
<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>DHS</td>
<td>Demographic and Health Survey</td>
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<td>E-FISP</td>
<td>Electronic Farmer Input Support Programme</td>
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<td>E-Voucher</td>
<td>Electronic Voucher</td>
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<td>FAW</td>
<td>Fall Armyworm</td>
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<td>FISP</td>
<td>Farmer Input Support Programme</td>
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<td>FRA</td>
<td>Food Reserve Agency</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GHI</td>
<td>Global Hunger Index</td>
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<td>LCMS</td>
<td>Living Conditions Monitoring Survey</td>
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<td>MoA</td>
<td>Ministry of Agriculture</td>
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<td>MoFNP</td>
<td>Ministry of Finance and National Planning</td>
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<td>MT</td>
<td>Metric Tonnes</td>
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<td>NAIP</td>
<td>National Agriculture Investment Plan</td>
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<td>NAMBOARD</td>
<td>National Agricultural Marketing Board</td>
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<td>PEM</td>
<td>Protein Energy Malnutrition</td>
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<td>POU</td>
<td>Prevalence of Undernourishment</td>
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<td>RALS</td>
<td>Rural Agricultural Livelihoods Survey</td>
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<td>SDG</td>
<td>Sustainable Development Goal</td>
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<td>SPS</td>
<td>Sanitary and Phyto-Sanitary</td>
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<td>VAT</td>
<td>Value Added Tax</td>
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<td>ZAMACE</td>
<td>Zambian Commodity Exchange</td>
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<td>ZMW</td>
<td>Rebased Zambian Kwacha</td>
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Chapter 1

Overview
Zambia is experiencing population growth, rapid urbanisation and rising per capita income, with serious implications on food policies and markets, rural development, and the nutrition outcomes of the population (Chisanga and Zulu-Mbata, 2017). Zambia’s agriculture sector has been identified as key to unlocking economic growth and it provides the main support for Zambia’s rural economy. About 48.9 percent of the Zambian population depends on agriculture, primarily through smallholder production for their livelihoods and employment, and the sector is estimated to contribute 4.8 percent to the Gross Domestic Product (GDP) in 2017.

Zambia recognises that agriculture is one of the key priority sectors in achieving sustainable economic growth and poverty reduction as outlined in the Second National Agricultural Policy (SNAP) and the Seventh National Development Plan (7NDP), and evidence showing crop, and fisheries and livestock (Figure 1) suitability countrywide. The potential for agricultural growth in Zambia is staggering. The country is uniquely endowed with resources rich for agricultural development, which if harnessed fully, would enable the country to become the breadbasket of East and Southern African region.

Figure 1: Fisheries and livestock suitability by province

Source: Ministry of Fisheries and Livestock (2017)
The Livestock and Fisheries sector has been identified as a high potential area that can be used for agricultural diversification, gainful employment and poverty reduction (MNPD, 2017). However, the trends in resource use and sometimes politically driven ad hoc policies show a disjoint in addressing the needs for sustained agricultural diversification. For example, the continued high expenditure on the Farmer Input Support Programme (FISP) and through the Food Reserve Agency (FRA) makes it difficult to attain diversification in food production and consumption (World Bank, 2017), goals that have been set in national policy documents. Despite the potential and suitability of diverse crop and livestock enterprises in the different agro-ecological zones, the country has been moving very slowly to diversify away from maize.

The Zambian Government in 2017 committed to a country-wide rolling out of the electronic Farmer Input Support Programme (e-FISP), a step in the right direction with regards to stimulating agricultural diversification. The e-FISP is centred on a system that enables greater choice of agro inputs to support increased productivity and diversification. In addition, the e-FISP represents a more cost effective way of providing subsidies to smallholder farmers. By crowding in the private sector to act as the supplier of inputs, the e-FISP offers an opportunity to encourage growth of agro-dealers at both local and national levels, bringing in investment and creating jobs.

The year 2017 closed with the Ministry of Agriculture (MoA) consulting stakeholders on amendments to the Food Reserve Act. The most contentious proposal is the extension of the FRA into a commercial entity. The proposed amendments are deeply concerning because they move the FRA’s mandate from that of a strategic reserve institution, to that of a trader and exporter in the market place. This flies in the face of commitments from the Government to reduce their involvement in the agricultural sector, and specifically maize markets as embodied in the 7NDP, the Zambia CAADP Compact, the SNAP, the Zambia Plus and the current government’s Agricultural Manifesto. It also risks adding to Zambia’s debt burden and stifling growth in the agricultural sector. The buzz words in all these documents is that ‘Agriculture will be private sector-led, transparent and predictable’. Yet, the proposed amendments to the Food Reserve Act will take the country in the opposite direction.

The FRA’s proposals are underpinned by assumptions that cannot be empirically justified. The proposals suggest that the FRA can both stabilise prices (carrying out its traditional social function), while at the same time become commercially viable. The experiences of the National Agricultural Marketing Board (NAMBOARD) are still fresh with us. The Board miserably failed to balance the two roles, which is why it was scrapped off. Experiences in Malawi, Zimbabwe, Tanzania and Kenya show exactly the same dismal performances. To ask the FRA to provide price stabilisation and be commercially viable is to ask it to carry out two contradictory roles. The amendments risk undermining the important strides that have been taken in recent years in the agricultural sector in Zambia. They threaten the welcome shift to the e-voucher on the input side, and represent a fundamental risk to the operationalisation of Zambian Commodity Exchange (ZAMACE), and efforts to diversify the agricultural sector. In addition, these amendments create a real risk of deterring investment in agriculture depriving Zambia of local and international investments and significant growth potential. Above all, the proposed commercialisation of FRA in the agricultural value chain will completely kill the private sector in Zambia – and the potential for growth, job creation and prosperity.
“Food security is when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet dietary needs for a productive and healthy life.”

## THE FOUR PILLARS OF FOOD SECURITY

<table>
<thead>
<tr>
<th>Availability</th>
<th>Access</th>
<th>Utilization</th>
<th>Stability</th>
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| **National Level:**
   Enough food through domestic production or import
| **Physical, Social and economic**
   Households must have assets, labour, knowledge to produce food and market prices must be affordable |
| **Actual consumption patterns must meet nutritional needs**
   Includes processing and storage, preparation, allocation and consumption within the household |
| **Availability, access, and utilization** need to be stable/reliable and consistent |

Chapter 2

Food Security and Nutrition
2.1 Status of Food Security and Nutrition

Although, Zambia has been recording surpluses in staple food production (Figure 2), its food insecurity situation at household level remains worrisome. Several surveys measuring different aspects of food security indicate that almost 50 percent of the population are food insecure. Given the high poverty levels especially in the rural areas, most households lack all year round access to affordable, nutritious foods, hence consume diets which are poorly diversified. Food consumption among most households is mostly carbohydrates and green leafy vegetables, with minimal consumption of protein source foods (RALS, 2015; Mofya-Mukuka and Kabisa, 2017).

Zambia has continued recording surplus production in staple food during the production season. The 2017/2018 national food balance sheet based on the crop forecasting figures indicate food surplus of 1,101,060 resulting from maize and cassava surplus production of 1,178,516 metric tonnes and 114,305 respectively even with deficits of 40,000 metric tonnes and 146,765 metric tonnes in rice and wheat production respectively.
2.1.1 Hunger Index

Zambia’s overall ranking on the Global Hunger Index (GHI) remains very low. According to the 2017 GHI, 37 percent of the population are estimated to be experiencing hunger. With this rate, Zambia is ranked among the worst three countries in the world. However, given that some countries are not rated due to lack of data, the ranking may be misleading. Nonetheless, with 37 percent of its population estimated to be hungry, its overall performance remains within the “alarming” range which has raised wide concerns from Government and stakeholders.

The GHI is a composite of four indicators (Undernourishment, Child wasting, Child stunting, and Child mortality), calculated by the International Food Policy Research Institute (IFPRI) using a number of different data sources. Figure 3 shows the progress of each of the four indicators for Zambia, which for the most part have gradually declined in recent years.

1 Zambia has continued recording surplus production in staple food during the production season. The 2017/2018 national food balance sheet based on the crop forecasting figures indicate food surplus of 1,101,060 metric tonnes (MT), resulting from maize and cassava surplus production of 1,178,516 MT and 114,305MT respectively, even with deficits of 40,000 MT and 146,765 MT in rice and wheat production respectively.
2.1.2 GHI measurement issues

In looking at the four components which make up the GHI ranking from Zambia, it should be noted that one of the indicators requires more up to date and reliable data to ensure a more accurate score. The Prevalence of Undernourishment indicator (POU)\(^2\) relies on analysis of data on food availability, equality of access to food and demographics data, but there hasn’t been a recent food consumption survey. The last National survey was done in the 1970s. In addition, the food balance sheet in Zambia is only limited to staple foods and does not capture other foods, hence it has been impossible for the Food and Agriculture Organization of the United Nations (FAO) to update the POU.

A technical working group of experts from the MoA, and Ministry of Fisheries and Livestock(MFL), IAPRI, the National Food and Nutrition Commission,(NFNC) the FAO Zambia Office and Concern Worldwide has been working on a strategy to help deal with the data gaps required to update the POU in readiness for the calculation of the 2018 index. Otherwise, the experts recommended a number of measures to improve Zambia’s performance on the GHI, and the state of nutrition in the country presented in Box 1. These measures are key in designing better interventions, guide investments and monitor progress.

---

2.1.3 Malnutrition

Malnutrition refers to the conditions that result from insufficient or excessive intake of nutrients commonly represented by stunting, wasting and underweight (Figure 4). The most prevalent nutrition problems in Zambia are micronutrient deficiencies, also known as “hidden hunger” that include deficiencies in Vitamin A, Iron, Iodine and Anaemia; low birth weight and Protein-Energy Malnutrition (PEM). Malnutrition has long-term irreversible effects on a child’s development, including mental development, health school performance, immune system functioning and, later on, work productivity.

Box 1

Measures to improve Zambia’s performance on the GHI

- Implement a National Food Consumption and Micronutrient Status survey. NFNC has developed a protocol to collect such information but funds need to be prioritised to implement such a high quality nationally representative survey.
- Redesign the food balance sheet to include legumes and other currently excluded foodstuffs for the undernourishment calculation.
- Ensure that data on production, trade and utilisation of legumes and other currently excluded foodstuffs are included in the response provided to the annual FAO survey.
- Prioritise funding for the implementation of the annual Post-Harvest Survey data collection. This survey provides actual estimates compared to the pre-harvest data collected through the Crop Forecasting Survey.

Figure 4. Malnutrition Status

Source: Zambia demographic health Survey (CSO, Various years)
According to the latest Zambia Demographic and Health Survey (DHS) (CSO, 2015), the prevalence of under five children who are stunted is estimated at 40 percent, 15 percent are underweight and 6 percent are wasted. Only 11 percent of children between the ages of 6 – 23 months can be considered to be fed an appropriate diet based on the three Infant and Young Child Feeding practices. This is an indication of chronic malnutrition or inadequate nutrition over a long period of time. According to the SDG Goal #2, Zambia must aim to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture in order to deal with its current malnutrition challenges. To achieve this goal, the technical working group of experts have come up with the recommendations presented in Box 2.

**Box 2**

**Recommendations for Zambia to achieve SDG No. 2**

- **Promote diversified agricultural production at smallholder and commercial level to increase availability and affordability of nutritious foods for all.**
- **Increase demand for nutritious food and promote good diets through sharing information, providing nutrition counselling, and conducting campaigns.**
- **Continue to support for the ‘whole of government’ approach which is already employed under programmes like: the First 1,000 Most Critical Days Programme (1st 1000 MCDP); Scale up effective interventions under the 1st 1000 MCDP.**
- **Increase the budgetary expenditure on nutrition sensitive interventions in line with the NFNC’s recommendation of ZMW 40 million per year, and for nutrition specific interventions to the World Health Organization (WHO) target of ZMW 300/child under 5 years.**
- **Promote and provide access to education facilities for both boys and girls especially in the rural areas.**
Chapter 3

Performance of the Zambian Agricultural Sector in 2017
3.1 2016/2017 Agricultural Season

The 2016/17 agricultural season was characterised by the La Niña weather event, which meant that most parts of the country received between normal and above normal rainfall. This was in contrast to the two previous agricultural seasons when Zambia experienced two consecutive droughts induced by a long lasting El Niño event. The La Niña weather was experienced across much of Southern Africa i.e. Mozambique, Malawi, North Eastern Zambia, Tanzania, Namibia and Angola (WFP, 2017) (Figure 5), hence the 2016/17 marketing season for maize has been characterised by low maize demand as most countries in the region also produced maize surpluses. When combined with a large carry over stock from the previous season, which is explained by the decision to close the borders, Zambia has been left with excess maize and a depressed market this season: the price of maize dropped by almost 45 percent. Similarly the price of soya beans declined by 44 percent compared to the same period last year.

Figure 5: La Niña Weather Event in Southern Africa

Source: World Food Programme (WFP), 2017
3.2 Progress towards CAADP Targets

Zambia like most countries in Africa, signed the Comprehensive Africa Agricultural Development Programme (CAADP), Africa’s policy framework for agricultural transformation, wealth creation, food security and nutrition, economic growth and prosperity for all. This was first signed by the Heads of State at the Maputo Declaration on Agriculture and Food Security in 2013 and reaffirmed at the Malabo Declaration in June 2015. The declaration committed countries among other things to allocate at least 10 percent of their national budgetary resources to the agricultural sector with the objective of achieving at least 6 percent annual agricultural GDP growth. In pursuant with the CAADP process, Zambia in May 2013 launched the National Agricultural Investment Plan (NAIP) in order to guide public and private agricultural investments in the country effectively. By providing a framework to guide investment, the NAIP seeks to support Zambia’s attainment of the agricultural growth and spending objectives detailed in the CAADP. In this section, we briefly look at Zambia’s progress towards the main CAADP.

3.2.1 Agricultural Gross Domestic Product

Zambia’s agricultural GDP contribution has over the years been sustained at above 5 percent of the national GDP. Figure 6 shows the contribution of agriculture to GDP and the value added per worker for Zambia for the period of 2005 to 2015. Updated statistics were not available at the time of publishing this report. The Agricultural GDP for 2017 is expected to improve with lower contraction in comparison to 2015 and 2016 due to electricity growth on the assumption that the La Niña event resulted in increased water levels (MoF, 2017).

Figure 6: Contribution of Agriculture to GDP and Value Added per Worker 2005-2015

![Graph showing the contribution of agriculture to GDP and value added per worker from 2005 to 2015.]


The NAIP focuses on four key investment areas: (i) sustainable natural resources management; (ii) agricultural production and productivity improvement; (iii) market access and service development; and (iv) food and nutrition security and disaster management.
3.2.2 Declining agriculture contribution to GDP

Zambia’s agriculture contribution to GDP has been declining since 2004 (Figure 6). A common question when this trend is analysed is whether or not this is a good or a bad thing. The response to that is, “it depends”. In an ideal economy, the contribution of agriculture to GDP reduces as the sector undergoes structural transformation. This implies that productivity in the sector, the value of outputs, and productivity per worker is increasing. However, this is not the case for Zambia as the value added per worker is reducing and this reducing GDP has not necessarily been accompanied by growth in other areas such as manufacturing and other related sectors of the economy. This trend is not unique to Zambia, but Africa as a whole. Evidence shows that the transformation in the agricultural sector taking place on the continent has not translated into workers moving to the manufacturing sector but rather, have moved to the urban based services sector in roles that are not necessarily well paid (AGRA, 2017). This trend shows that Zambia’s agricultural transformation needs to be supported to form necessary linkages with other sectors in the economy and stimulate overall economic growth.

The El Niño weather events during the 2014/15 and 2015/16 agricultural seasons led to a decline in the agricultural GDP growth from 1.1 percent in 2013/14, down to -7.7 percent in 2015 (Figure 7). The 2016/17 La Niña event brought average to above average rainfall and this translated into improved growth rate but still remained negative at -0.5 percent. For the 2017/18 agricultural season, it is expected that the growth rate should improve further because of the expectation of average to above average rainfall as in the previous season. The high dependence of the agricultural sector on rain fed production systems calls for increased investments into appropriate irrigation technologies in order to sustainably enhance productivity, especially among the smallholder farmers.

3.2.3 Quality of the Agricultural Sector Budget

Figure 8 shows the trend of the annual budgetary allocations to agriculture in Zambia. The budget for the agricultural sector in 2017 was 9.42 percent of the national budget, up from 6.45 percent in 2016. The agriculture budget allocation since 2013 has been below the CAADP target of 10 percent. Despite the quality of the agriculture budget, this is an area that requires review by the Government of Zambia in line with the CAADP commitments.
Although the country is slowly moving towards meeting the CAADP target, the budget composition with the MoA and MFL continues to raise significant concerns. This is because the distribution of the agricultural budget in 2017, as has been in the past years, has not placed enough emphasis on broad-based public investments necessary to stir agricultural growth and transformation. This is evident in the continued high allocation to FRA and FISP under the Poverty Reduction programmes, about 69.9 percent of the MoA budget in 2017. This trend in allocation has been continued in the 2018 budget with limited resources allocated to the key drivers of agricultural growth as shown in Figure 9.

Figure 9: 2018 Budget Allocation to (a) Ministry of Fisheries and Livestock, and (b) Ministry of Agriculture

a) Ministry of Fisheries and Livestock

- 20.5% Personnel Emoluments
- 56.8% Agriculture Development Programmes
- 20.5% Recurrent and Departmental Charges
- 5.0 Million

b) Ministry of Agriculture

- 9.9% Personnel Emoluments
- 56.8% Recurrent and Departmental Charges
- 20.6% Agriculture Development Programmes
- 5.0 Billion

Though politically popular, the experience in Zambia and other countries in the region demonstrates that these subsidy programmes are typically less effective at stimulating agricultural growth than investments in research, extension, roads and other public goods, because subsidies often displace private spending that would otherwise occur and are prone to diversion and manipulation. Current rural poverty estimates show that there has been a decline in rural poverty by 1.3 percent from 77.9 per cent in 2010 to 76.6 per cent in 2015 (based on the Living Conditions Monitoring Survey (LCMS) (2015). Continued heavy spending on FISP and FRA has left few resources to invest in these well recognised drivers of agricultural growth. This is counter-intuitive to the developmental aim of reducing poverty as a large amount of money that still goes to programmes such as FISP and FRA mostly benefit larger and wealthier farmers, as opposed to the vulnerable who require the most support. In order for Zambia to achieve some of its global and national commitments such as those towards the Sustainable Development Goals (SDGs), Vision 2030 and the overall poverty reduction agenda, adequate public resources will need to be committed towards catalysing the desired growth and investment.

**WHAT SHOULD BE DONE?**

- Reduce government’s role in mass procurement and management by using ZAMACE
- Target government subsidies to land constrained poor farmers
- Consider a reduction of strategic storage level further, diversify the strategic reserves by having both physical and virtual stocks (options)
- Provide time bound support to graduate farmers from subsidy programmes
- Improve the timing of budget releases
- Prioritize and reduce many exercises from FISP and FRA to key drivers of agricultural growth
Chapter 4

Improved Technology Use
Adoption of improved agricultural technologies by farmers can contribute to an economically efficient farm sector and to the financially 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.

### 4.1 Fertilizer use

Figure 10 shows the percentage of households that used fertilizer over the period 2002 to 2017. Nationally, about 59.9 percent of the rural households reported using fertilizer in the 2016/17 agricultural season. Most of the fertiliser was used for maize production. The proportion of households using fertilizer in 2017 increased by 6.2 percentage points from 53.7 percent in 2016. Fertilizer use varied by province, with Central Province having the highest percentage (74.9 percent) of farmers that used fertilizer followed by Lusaka with 74.4 percent (Figure 11). Similar to other years, Western Province on the other hand had the least percentage of farmers that used fertilizer, with only 13.7 percent reporting using fertilizer in 2016/17 agricultural season. The total fertilizer used among the smallholder farmers in Zambia increased by 26 percent, from 286,497 MT to 361,091MT (MoA and CSO, 2017).

In the past 10 years, there has been an upward increase in the percentage of farmers reporting using fertilizer as well as the rate of fertilizer application as shown in figure 10. The average fertilizer use per hectare (Ha) in 2017 was 227.5 Kilograms per Ha among fertilizer users compared to 187.7 Kilograms per Ha in 2016, a 21.2 percent increase.
4.1.1 **Electronic Voucher -FISP pilot**

The Farmer Input Support Programme (FISP) has been in place since 2002, but has been marred with several weaknesses. The overall objective of FISP is to increase private sector participation in the supply of agricultural inputs to small-scale farmers, and contribute to increased household food security, improve agricultural productivity, and income. Due to the weaknesses associated with the program, very few of these objectives were met. The Government in 2015 and 2016 piloted the E-voucher, first in 13 districts during the 2015/16 agricultural season, and expanded to 39 districts during the 2016/17 farming season. The Government in 2017 started the process of rolling out the e-FISP countrywide for the 2017/18 farming season.

For a successful rollout, the Government was urged to timely fund the programme, in order for farmers to redeem agro inputs early as well as sensitise all stakeholders to ensure they clearly understood the program objectives clearly. The sensitisation programme, among other things, needed to clearly spell out the Dos and Don’ts for farmers, cooperatives, agro-dealers, banks and MoA staff, to help facilitate the smooth operations of the programme. In addition, farmers should be reminded about the objectives of the subsidy and the requirements for participation especially the down payment before Government tops up the balance.

The system when fully functional will use the e-farmer register with more than 1.2 million farmers. The e-system would help monitor the implementation of the programme in real time. Table 1 summarises the road map proposed by IAPRI in order to successfully roll out the E-FISP countrywide. Although the process started a bit late, the MoA reported in September 2017, that the process was on track and progress had been made on key aspects of the system. For example, the selection and training of input dealers and agro-dealers, harmonisation of FISP input catalogue, and the integration of the E-FISP system with banks where farmers’ payment of deposits, redeeming of inputs, and payment would be monitored was on almost completed.
### Table 1: Proposed Road Map for Rolling out E-FISP

<table>
<thead>
<tr>
<th>Timing</th>
<th>Action required</th>
<th>Lead actors</th>
<th>Expected Outputs</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>Granting of Authority by Cabinet and clear commitment to roll out e-FISP</td>
<td>MoF/MoA/MFL</td>
<td>Authority granted and public statement issued</td>
<td>Clear message from the Executive and Ministries responsible for implementation that there is no turning back and that resources will be sought to fund e-FISP</td>
</tr>
<tr>
<td>April</td>
<td>Set up public-private task force to oversee implementation and tackle arising challenges</td>
<td>MoA/MFL/MoF</td>
<td>Task force formed</td>
<td>There are a number of stakeholders who can commit their time and funds to help Government oversee the successful implementation. This should include institutions who have been supporting farmers through electronic vouchers, e.g., FAO, ZNIFU.</td>
</tr>
<tr>
<td>April - May</td>
<td>Review beneficiaries and compile list of 2017 beneficiaries and make it electronic</td>
<td>MoA/MFL</td>
<td>Updated list of beneficiaries</td>
<td>FAO through its country representative offered at the FISP Indaba to help Government to register farmers and sensitization</td>
</tr>
<tr>
<td>April - May</td>
<td>Procurement of cards for all verified beneficiaries</td>
<td>MoA/MFL/MoF/Banks</td>
<td>Cards printed and collected from banks</td>
<td>Meetings with all selected/participating banks, funds made available for e-cards printing and collection of cards from banks</td>
</tr>
<tr>
<td>April - May</td>
<td>Set up of an Integrated Information Technology working group</td>
<td>MoA/MFL</td>
<td>Integrated Information Technology working group formed</td>
<td>The task force should include the banks, representatives from phone companies and technology companies</td>
</tr>
<tr>
<td>April - May</td>
<td>Publicise the range of agro inputs that are covered under the e-FISP system</td>
<td>MoA/MFL/Stakeholders</td>
<td>e-FISP inputs publicised</td>
<td>Set list of inputs that e-FISP will be extended to so that agro-dealers/input suppliers know the full opportunity and can plan stocks ahead of the agro-dealers selection process</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
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<th>Action required</th>
<th>Lead actors</th>
<th>Expected Outputs</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>May - June</td>
<td>Agro-dealer selection, registration and training.</td>
<td>MoA/MFL/Stakeholders</td>
<td>Agro-dealers selected</td>
<td>Set list of inputs that e-FISP will be extended so that agro-dealers/ input suppliers know the full opportunity and can plan stocks ahead of the agro-dealers selection process</td>
</tr>
<tr>
<td>June – July</td>
<td>Train district staff and other stakeholders involved in the e-FISP implementation</td>
<td>MoA/MFL</td>
<td>Provincials and District Coordinators (PACOs &amp; DACOs), Provincial Marketing Officers, District Marketing Development Officers, Extension officers trained</td>
<td>MoA to make available the e-FISP implementation manuals and other e-FISP awareness materials</td>
</tr>
<tr>
<td>June – July</td>
<td>Publicise the range of agro inputs that are covered under the e-FISP system and train farmers on e-card operations</td>
<td>MoA/MFL</td>
<td>e-FISP inputs publicised, awareness programs - e-FISP awareness materials printed and distributed</td>
<td>Having defined the inputs and selected agro-dealers. This is the time to educate farmers on how the cards work, as well as what they can purchase. This will need to be done as part of DACOs’ role in each district, as well as with central information programs.</td>
</tr>
<tr>
<td>Aug – Oct</td>
<td>e-FISP roll out</td>
<td>MoA/MFL</td>
<td>Farmers’ deposits and e-card activations/ input redeeming</td>
<td>With all modalities in place (finances, farmers identified and selected agro-dealers trained and notified of demand expectations), cards can be distributed to target beneficiaries</td>
</tr>
<tr>
<td>April - Dec</td>
<td>e-FISP monitoring</td>
<td>MoA/MFL/IAPRI</td>
<td>Monitoring and Evaluation</td>
<td>Other interested stakeholders can join to help with funding the monitoring exercise. Monitor program throughout the course of the roll-out to ensure corrective measures are taken as soon as they happen.</td>
</tr>
</tbody>
</table>

Source: IAPRI/MoA/Stakeholders’ suggested roadmap on rolling-out e-FISP nationally in Kuteya and Chapoto (2017)
4.3 Use of Improved Seed

Figure 12 provides a comparison of the percentages of households using improved seed varieties over the period 2002 to 2017. Nationally, about 72 percent of the rural households used improved seed in 2017 (irrespective of crops produced) compared to 66 percent in 2016. For maize, the number of farm households using improved seed was 63.6 percent, decreasing marginally by 0.7 percentage points from 64.3 percent in 2016.

Generally, there has been an upward increase in improved seed use in Zambia. Between 2003 and 2017, the number of farm households using improved seed increased by 27 percentage points. The highest was 2015, while the lowest was in 2003. Increased private sector participation in the seed sector has contributed to the adoption of improved seed use. Also, the traditional FISP might have contributed to this increase especially that hybrid maize seed was part of the subsidised package. Further, the Government’s 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 12: Improved seed use, 2002 to 2017](source: CFS, 2002-2017)
Yawning Regional Market - “Zambia is strategically located”

Source: Authors
Chapter 5

Agricultural Trade Performance
Zambia is well positioned to be a food basket for the Eastern and Southern Africa region given its abundant water and land resources. It is well located with eight neighboring countries, most of whom are deficit food producers. In the past 10 years, Zambia has been a consistent surplus producer of maize, soya beans and is nearly self-sufficient in the production of wheat. Thus, Zambia’s untapped ability to supply the region with grains and oilseeds cannot be over emphasised. Zambia has also witnessed an unprecedented scale of private sector investments in grains and oilseeds in response to the growing domestic and export demand.

Private sector investments in grain storage have increased from 550,000 MT in 2013 to more than 800,000 MT in 2017 with the total value of investments growing from about US$ 34 million to $80 million over the same period\(^4\) (GTAZ, 2013; GTAZ, 2017). Between 2011/12 and 2014/15, maize sales by smallholder farmers to large-scale private traders increased nearly five-fold, from 40,617 MT to 241,071 MT. This represents an increase from 3 percent of total smallholder sales by volume to 12 percent that were sold to large-scale traders (Sitko and Chisanga, 2016). In the 2016/17 agricultural marketing season, large grain traders accounted for over 40 percent of total maize and soya beans marketable surplus produced in the country (GTAZ, 2016; CFS, 2016).

Figure 13 shows the value of agricultural imports and exports as well as the ratio of imports to exports in Zambia for the period 2011 to 2017, whilst Figure 14 shows the net agricultural export values for the same period. Between 2011 and 2016, the value of agricultural imports have stayed almost consistent at around US$420-440 million whilst agricultural exports have been trending downwards. In 2017, indications are that the value of agricultural exports will stay within this range. This trend is shown by the rising ratio of agricultural imports to exports, meaning the country is increasingly importing more agricultural products than it is exporting. This trend is augmented in Figure 14, where the net agricultural export value is clearly trending downwards. The net agricultural export value was negative in 2016, indicating a trade deficit, whilst in 2017 the net agricultural value is positive indicating a trade surplus.

In 2016 and 2017 the value of agricultural exports has been much lower as a result of reduced maize exports in 2016 because the Zambian Government imposed an export ban on maize exports. While in 2017 there has been low regional maize exports as most countries also produced maize surpluses. The maize trade situation in 2017 is discussed later.

\(^4\)Estimates based on members of the Grain Traders Association of Zambia (GTAZ)
Figure 13: Agriculture imports and exports, 2011-2017

Source: ITC Trade Map and CSO, 2017

Note: The 2017 figures are only for January to September
Figure 14: Net agricultural export value in Zambia: 2011 – 2017

Source: Author calculations based on data from FAOSTAT (2016) and CSO (2017)

Note: 2017 figures are only for January to September
Figure 15 shows the proportion of different commodities and associated products value of agricultural exports between 2011 and 2017. It is quite obvious from the figure that Zambia has five (5) main agricultural exports: a) maize and maize products; b) sugar; c) tobacco; d) cotton; and e) stock feed ranked in order of importance. The exports of maize and maize products fluctuate depending on season and government policy, while the share of sugar tobacco and cotton have largely remained stable. In 2017, the value of maize exports have been far less than the 2016 levels due to low regional demand.

Source: Author calculations based on CSO various years

Note: 2017 figures are only for January to September
Import and export ratios for the other agricultural commodities and products (fisheries, horticulture, and livestock) are presented in Figures 16a to 16d. Apart from tobacco, the import/export value ratio is greater than one and highest for fisheries, followed by horticulture and then groundnut commodities and products. However, there is a significant decline in the import ratio for fisheries in 2017, which could be explained by increasing fish production particularly in 2017.

We also observe an increasing trend for horticultural commodities and products (Figure 16b), where the value of imports in 2015 was about four times the value of exports. The ratio of the value of imports/exports of horticulture commodities and products has been trending upwards since 2013. This coincides with the increase in the number of large chain supermarkets in Zambia whose fruits and vegetables department rely heavily on mostly imported fruits. In 2017, the import to export ratio has declined as the value of horticultural imports declined compared to 2016.

In the case of groundnuts, there is no discernable pattern but there was a reduction in the ratio of the value of imports to exports between 2015 and 2017, from 8.9 times to 3.2 in 2017.

**Figure 16a-d: Import to export ratios for fisheries, horticulture, groundnuts and tobacco**

Source: ITC Trade Map (2017)
5.1 Maize Trade in 2017

By March 2017, Zambia had approximately 915,000 MT held by FRA and the private sector (see Figure 1). When the Crop Forecast results were announced in May 2017, Zambia had carry over stock of nearly 570,000 MT. In November 2017, the total maize stock in the country amounted to about 1,400,000 MT with the FRA holding the majority of the stocks followed by millers. Unlike, the previous marketing season, the FRA was holding 46 percent of the maize stocks, millers had 27 percent, while grain traders had 20 percent of stocks. The grain traders were less active during the 2017/18 marketing season because they still had stocks from the last season.

Figure 17: Maize Stocks held by various players between May 2016 and May 2017

Source: Stocks Monitoring Committee (2017)
In May 2017, the Minister of Agriculture announced the lifting of the maize export ban and shortly after, the 10 percent export tax that was introduced in the previous season, was also removed but with a caveat tied to level of production. The Minister of Finance announced that the export tax would be put in place whenever Zambia’s annual maize production fell below 2 million MT.

On 25th June 2017, the Government through the FRA announced a maize buying price of ZMW60 per 50 Kg which was a drop from the ZMW85 per 50 Kg offered in the previous season. This price was closer to the prevailing market price offered by the private sector. However, as expected some stakeholders in the agriculture sector were not too happy about this as they argued that the FRA buying price was way below the cost of production by most farmers.

Nevertheless, evidence has shown that direct government price support is a costly and an ineffective way of stabilising the maize and maize meal prices for both farmers and consumers. The biggest losers from low maize prices are mostly the high cost surplus producers whose productivity is too low to cover the cost of production. The key therefore lies in increasing farmers’ productivity – a sure way of sustainably reducing production costs for farmers than asking for government to artificially raise prices.
6.1 Maize

In the 2016/2017 maize production season, Zambia crop forecast projected a record maize production of 3,606,549 MT, with a surplus of 1,178,516 MT. Due to the La Niña weather conditions and an increase in the area of maize planted, maize production in Zambia was expected to increase by 26 percent, between 2015/2016 and 2016/2017 seasons according to the CFS. This maize supply response from the previous season was mainly due to high maize market prices prevailing in Zambia, and the region due to the El Niño weather patterns. Total area under maize was reported to have increased by 21 percent from 1,364,977 Ha in 2015/2016, to 1,644,741 Ha in the 2016/2017 agricultural season (Figure 18). Whilst, maize yield, only changed marginally from 2.10 MT/Ha to 2.19 MT/Ha in 2015/2016 and 2016/17 agricultural seasons respectively (Ministry of Agriculture, 2017).

Figure 18: Maize production, area planted and yield, 2013-2017
At the beginning of the production season, Zambia faced a major challenge with the Fall Armyworm (FAW) which initially ravaged maize fields in the early stages of crop establishment. The swift response led by MoA and the Disaster Management and Mitigation Unit (DMMU) saw the timely distribution of chemicals and sensitisation of farmers, which averted the risk of losses. There are unverified reports that Zambia spent over ZMW 30,000,000 in combatting the spread of the FAW. Zambia’s maize losses arising from the fall army worms were estimated to be less than 10 percent.

The problem of the FAW though effectively addressed last year will likely emerge this growing season, as reports of the pest attacking winter maize and other host plants such as wheat have been reported in 2017. These are indications that the pest is still active in the country and the Eastern and Southern Africa region as a whole. There are regional efforts through institutions such as FAO, and the International Maize and Wheat Improvement Center (CMMYT) to provide regional protocols to combat the pest which is likely going to remain in Africa for a very long time.

The Fall Armyworm

6.1.1 Extent of participation of private sector in maize marketing

The 2017/18 maize marketing season has been characterised by low private sector participation. In the previous marketing season, many of the large private grain traders obtained financing from banks to facilitate the purchases of grain in anticipation of high domestic and regional prices. When the government imposed an export ban, some of the traders could not fulfil contracts on grains earmarked for exports – hence the huge carryover into the current marketing season. Interviews with grain traders reviewed that this situation had a ripple-effect as it led to defaults on loans. As a result, there is loss of confidence by financial institutions to lend to grain traders this season, which partly contributes to the low participation in the current season.

However, during IAPRI’s field visits, millers were found to be more actively purchasing maize from farmers and in fact, were providing a major maize market in the Copperbelt, Central and Southern provinces. The reason for the active participation of millers during the 2017/18 marketing season was the low cost of maize, which supports lower cost of production. However, most millers do not have sufficient storage capacity, hence they have limited capacity to absorb the surplus through their own purchase but rely on large traders for their stock.
6.2 Wheat

Based on the Zambia National Farmers Union (ZNFU)’s preliminary post-harvest assessment, Zambia is expected to produce more than 279,329 MT, against a requirement of 395,000 MT (as estimated by the MoA’s Food Balance Sheet) (Figure 19). This represents an increase from 221,644 MT in the previous season reported by the MoA1. Given the carryover stocks of about 56,331 MT, Zambia may still require to import wheat to meet its deficit, which may be less than 60,000 MT. There are major challenges affecting wheat including the reduced irrigation water, and power, which have limited the growth of the subsector in the last 5 years. However, Mkushi, which is the major wheat producing farm block in Zambia, is expected to increase the irrigated area through a number of irrigation projects. Improvement in power supply is also expected from the Zambia Electricity Supply Corporation (ZESCO), the main electricity supplier as well as alternative sources such as the Lunsemfwa Hydro-power Company.

In order to fill deficits in production, the government allows specific quantities of wheat to be imported in the country in consultation with ZNFU, grain traders and millers. Imports were allowed to fill the 2016/17 production deficit, by lifting the wheat import ban in the first quarter of 2017. The reversal of the ban was intended to boost national supplies and to contain the expected price rises (FAO, 2017). Close to 27,000 MT has since been imported since the ban was lifted. By opening up for imports, this averted further rise in the wheat prices which had spiked around March 2017.

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1 Provisional CFS results show that wheat production in 2016/17 production season was expected to drop to 193,713 MT.
6.3 Soya beans

In the 2016/17 season, Zambia was expected to produce 351,416 MT of soya beans, an increase of 31 percent from 267,490 MT from the previous season (Figure 20). Of this output, smallholder farmers were estimated to account for 42 percent of the production compared to 32 percent in the previous season. The area planted increased to 231,630 Ha from 145,763 Ha the previous season, representing an increase of 59 percent. Meanwhile, the yield rate declined by 17 percent, hence the increase in production was mainly due to area expansion resulting from many more farmers producing soya beans. The average yield among the small-scale farmers was 0.93 MT/Ha, compared to commercial farmers whose average yield was 2.87 MT/Ha.

The supply response can be attributed to the high soya beans prices the previous season, when it was trading at an average price of US$ 494 per MT (MoA, 2017). Zambia’s soya beans national requirement is about 268,000 MT, which means that Zambia produced a surplus of nearly 200,000 MT in the 2016/17 production season, also taking into consideration the carryover stock of roughly 100,000 MT.

Due to the high soya beans price, and large carryover stock, the market prices for soya beans in the 2017/18 marketing season crashed, dropping by 44 percent compared to the last marketing season. With the low market prices, there has been a public outcry, particularly from farmers, that these market prices are a disincentive for them to continue producing the crop. This has prompted the government through the FRA to include soya beans among the crops that it was purchasing in 2017, offering above market prices especially in Eastern province where prices have been the lowest. Nevertheless, at the end of its buying period, FRA had only purchased about 3,215 MT (Stock Monitoring Committee, 2017). Towards the end of year, however, soya beans prices have shown significant recovery, with soya beans trading at US$ 368 / MT as at mid-November compared to US$ 297 / MT in June when the season opened.
6.4 Cotton

According to the 2016/17 production season CFS results, seed cotton production was 89,293 MT, a 20 percent decrease from the previous year (Figure 21). The area planted was 113,649 Ha, representing a decline of 18 percent from the previous season. About 11.5 percent of households grew cotton in the 2016/17, compared to 10.1 percent in the 2015/16 season, a 1.4 percentage point increase. Total cotton purchases by ginners this year was about 52,000 MT, an indication that actual cotton production was possibly lower than forecasted in the CFS. While the rainfall patterns were favourable for cotton production earlier in the production season, the heavy rains experienced at flowering stages of the cotton plant affected the development of the lint and seed. This partly explains the decline in both yield and total production. Another reason advanced for the decline in area planted was the low price of cotton relative to soya beans, which is a competing cash crop for smallholder farmers.

In the 2016/17 marketing season, soya beans were trading at an average of ZMW 4.5 per Kg, whilst cotton was trading at an average of ZMW 3 per Kg. This might have prompted a number of farmers to allocate more land to soya beans instead of cotton with the expectation that the prices in the next season would follow a similar pattern. Conversely, a reduction in cotton production in the 2016/17 agricultural season led to an increase in the cotton prices in 2017, to an average of ZMW 3.80 per Kg. Thus, following the cycle, production of seed cotton might pick up in the coming season as area planted increases in response to the higher price. Unfortunately, a decline in international prices is projected with prices expected to fall from US$ 0.80 per pound (ZMW 17.6 per Kg) to about US$ 0.60 per pound (ZMW 13.2 per Kg), which will translate into lower domestic prices.

Figure 21: Cotton production, area Planted and yield, 2012-2016

Source: CFS Data, 2012-2017
6.5 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 the needed diversity diets and also supports incomes for smallholders. About 15.9 percent of the smallholder farmers in Zambia grew mixed beans in 2017, compared to 13.9 percent in 2016, representing an increase of 2 percentage points. Production of mixed beans increased slightly by 1.3 percent to 45,938 MT from 45,351 MT the previous season. The area planted decreased from 83,635 Ha to 90,434 Ha (about 7.5 percent decrease), with a marginal yield increase from 0.50 MT/Ha to 0.55 MT/Ha. Of great concern is the declining area under mixed beans since 2014, and yields that have remained below one (1) MT (Figure 22).

![Figure 22: Mixed Beans, area planted and yield, 2012-2016](image)

Source: CFS Data, 2012-2017

6.6 Groundnuts

Groundnuts are the second most widely grown smallholder crop in Zambia, with 52.9 percent of households producing groundnuts in 2017, which has decreased from 56.6 percent in the previous year (a decrease of 3.7 percentage points). Groundnuts production has been on an upward trend since 2015, which has continued in 2017. According to the CFS, groundnuts production increased by 28 percent from the previous year to reach 168,699 MT in 2017 (Figure 23). This was mainly due to increase in area, which increased to 269,611 Ha (representing a 20 percent increase from the previous year), and yields marginally increased to 0.63 MT/Ha (6 percent increase from the previous year).
The groundnuts value chain growth offers significant opportunities for smallholder farmers as it is dominated by smallholder farmers. It is an important source of income especially for women. 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 in the country. There are significant linkages to processors such as peanut butter processors and export markets such as South Africa and China, but these have not been realised due to high aflatoxin levels in the groundnuts.

One of the major reasons for the decline in groundnuts yields and production is that farmers continuously recycle groundnuts seed and this has resulted into the deterioration of yields. Therefore, to make Zambian groundnuts competitive on the world market requires investment in the seed supply, as well as ensuring Sanitary and Phyto-Sanitary (SPS) compliance, particularly with groundnuts which are susceptible to aflatoxin infection. Public investment in testing facilities, which if were freely available to companies seeking to export groundnuts, would help to offset some of the risks of investing in the sector and stimulate more production and productivity.

There are a number of key interventions supporting the groundnuts value chain, mostly led by donors. The main program has been the Feed the Future (FtF) initiative which targeted 200,000 smallholders in Eastern province with production, marketing and nutrition interventions in the groundnuts value chain among other key value chains (Curtis et al., 2015). The FtF initiative was implemented via the Profit Plus project which has since concluded. IAPRI is currently leading the evaluation of the FtF Programme in Eastern province. Another intervention is ongoing in Central province led by Musika Development Limited focusing on smallholder markets for groundnuts.

Figure 23: Groundnuts production, area planted and yield, 2012-2017

Source: CFS Data, 2012-2017
6.7 Horticulture

Horticultural production holds one of the best prospects as a pathway out of poverty for most land constrained smallholder farmers. Albeit, it is highly constrained with a myriad of challenges mostly on the marketing side. For example, the sector faces very high price volatility which increases the risk and reduces profitability for most of the poorly resourced smallholder farmers. The high price volatility arise mostly from under developed marketing channels with more than 80 percent of the horticultural products being traded on the informal market. In addition, there are limited value addition opportunities and refrigeration facilities required to deal with the inherent short shelf life of most horticultural commodities.

Figure 24 shows the Lusaka wholesale and retail prices of tomato, onions, rape and cabbage in 2017. Volatility of prices has been most prominent for tomato and onion compared to cabbage and rape. Between April to July 2017, the prices of tomato and onion spiked upward, but have been trending downwards, with onion prices spiking again in October. The price spike in tomato experienced over the period has also been attributed to the outbreak of tuta absoluta in Zambia and the region as a whole.

Figure 24: Average wholesale and retail prices of selected horticultural products in Lusaka in 2017

Source: IAPRI MIS system
Originating from South America, the pest feeds on tomato plants and is a serious threat to production and profit in the sector. The highly adaptable insect has been able to advance rapidly across territories, and pick up resistance to pesticides along the way. Hence, biological controls need to be developed quickly to help contain the pest. The surveillance carried out by the Zambia Agricultural Research Institute (ZARI) showed that the pest was present in Northern, Central and Lusaka provinces. Given that tuta absoluta infestation can result in 80-100 percent losses, the tomato industry is greatly threatened unless a nationwide solution to control the pest is sought. ZNFU in June 2017 formed a multi-stakeholder task force to coordinate the fight, the spread, and effects of tuta absoluta. The impact of this effort is yet to be assessed.

6.7.1 Import Ban

The horticultural sector was also at the centre of highly polarized debates when the MoA announced that it was banning the importation of selected vegetables and fruits in order to boost local production in March 2017. Premised on the need to protect local farmers from cheap imports originating mostly from South Africa and Tanzania, there was mixed reception to the announcement. On one hand, the ZNFU welcomed the decision because it had the potential to make horticulture more profitable for local farmers who were competing with some cheaper imported commodities, as well as compel local chain stores to procure locally produced products. The ZNFU estimated that the country was losing up to US$ 42 million annually from the importation of fruits and vegetables.

Conversely, there were counter arguments that the move by the MoA would lead to shortages of fruits and vegetables as local production was not adequate to meet the high demand both in terms of quality and quantity. The move was also condemned as it contravened the Common Market for Eastern and Southern Africa (COMESA) protocol on trade, to which Zambia is a signatory. This would, for example, trigger unnecessary retaliation from Zambia’s key trading partners. By some, the import ban was also viewed as “… a blunt tool for stimulating local production of vegetables, as well as a poor substitute for measures such

5 More details about the task force can be found at http://www.znfu.org.zm/article/taskforce-tuta-absoluta-formed.
as investments in local infrastructure that would enable local producers to compete favourably” (Lusaka Times, 2017). Consequently, the ban was lifted at the end of March 2017.

6.7.2 Smallholder farm profitability

IAPRI research has shown that production of horticultural products is 8 to 10 times more profitable than maize (Hichaambwa and Chamberlain, 2015). Thus, smallholder farmers stand to benefit significantly from diversifying away from maize into more profitable horticultural products. However, the sector is faced with two major constraints; poor market infrastructure and limited public resources for both soft and hard infrastructure. In addition, the country has no system in place to effectively track annual production and marketing information required to help the sector make informed investment decisions. Hence, like 2016, it was not possible to provide comprehensive statistics about the sector in 2017.

Therefore, there is an urgent need for the Government through the Central Statistical Office (CSO) and MoA to deliberately invest in national horticultural statistics to enhance knowledge of the sector and aid in policy decisions. Government should also continue investing in the requisite infrastructure such as feeder roads, provide market linkages between smallholders in rural areas to the areas where these products are in high demand, as well as promote small-scale irrigation. With such investments, there would be no need for ad hoc protectionist policies as the sector would become competitive.

6.8 Fisheries and Livestock

Fisheries and livestock play an important role in Zambia’s agriculture sector, together accounting for 35 percent of the agricultural GDP. The MFL has been in existence since 2015. The main goal of splitting Agriculture (crops) and Fisheries and Livestock into two ministries was to ensure that the latter received greater attention and funding. In 2017, the MFL received about 14.6 percent of the total agriculture budget, compared to 23 percent in 2016 (Figures 25a and 25b). Despite the proportions indicating a reduction in the allocation, the overall amount of funds for the MFL increased by 27.6 percent i.e. from ZMW 708.5 million to ZMW 903.8 million.
Policies and investments that support greater commercialisation by smallholder livestock producers hold significant income growth and poverty reduction potential seeing as the sector accounts for 35 percent of the agricultural share of Zambia's GDP.

### 6.8.1 Livestock sector

Data from the SNAP, and MFL shows that that the sector has experienced growth in terms of livestock population and their products (Tables 1 and 2). Pigs exhibited the highest growth rate from 2016 to 2017 at 47 percent, compared to 42 percent in 2015 to 2016. Table 1 also presents the projected livestock population and growth rates between 2015-2016 and 2016-2017. Egg production showed an upward trend in production of 52 percent from 2016 to 2017. Egg production, and ultimately consumption, is projected to grow to 77 eggs per capita by 2019 in Zambia to meet the demand for use of eggs as a cost-effective protein-rich food source (Krishnan and Peterburs, 2017).
### Table 2: Livestock Population: 2013 -2017

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2015-2016</td>
</tr>
<tr>
<td>Cattle</td>
<td>4,026,658</td>
<td>4,300,000</td>
<td>4,624,220</td>
<td>4,984,909</td>
<td>5,388,686</td>
<td>7.7</td>
</tr>
<tr>
<td>Sheep</td>
<td>115,338</td>
<td>131,300</td>
<td>149,420</td>
<td>170,637</td>
<td>195,892</td>
<td>14.1</td>
</tr>
<tr>
<td>Goats</td>
<td>3,375,433</td>
<td>3,500,000</td>
<td>4,095,000</td>
<td>4,823,910</td>
<td>5,692,213</td>
<td>17.8</td>
</tr>
<tr>
<td>Pigs</td>
<td>1,098,951</td>
<td>1,533,402</td>
<td>2,146,762</td>
<td>3,048,403*</td>
<td>4,481,152*</td>
<td>42.0</td>
</tr>
<tr>
<td>Poultry</td>
<td>122,605,273</td>
<td>146,055,266</td>
<td>174,470,000</td>
<td>212,853,583</td>
<td>266,066,750</td>
<td>22.0</td>
</tr>
</tbody>
</table>

Source: MFL (2017)

### Table 3: Livestock Products: 2010 -2017

<table>
<thead>
<tr>
<th>Product</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2016 - 2017</td>
</tr>
<tr>
<td>Milk (MT)</td>
<td>452,000</td>
<td>463,020</td>
<td>524,000</td>
<td>584,979</td>
<td>645,959</td>
<td>10.4</td>
</tr>
<tr>
<td>Eggs (000)</td>
<td>630,112,735</td>
<td>1,058,000,000</td>
<td>1,097,376,727</td>
<td>812,953,087</td>
<td>1,239,425,000</td>
<td>52.4</td>
</tr>
<tr>
<td>Hides</td>
<td>245,987</td>
<td>278,219</td>
<td>289,025</td>
<td>303,174</td>
<td>313,785</td>
<td>3.4</td>
</tr>
<tr>
<td>Beef</td>
<td>3,474,284</td>
<td>3,800,000</td>
<td>4,104,000</td>
<td>4,624,220</td>
<td>4,984,909</td>
<td>7.7</td>
</tr>
<tr>
<td>Pork</td>
<td>383,378,816</td>
<td>408,751,305</td>
<td>439,407,653</td>
<td>470,064,001</td>
<td>500,720,349</td>
<td>6.5</td>
</tr>
<tr>
<td>Poultry</td>
<td>3,409,572</td>
<td>3,818,227</td>
<td>4,352,779</td>
<td>4,803,399</td>
<td>5,275,003</td>
<td>9.8</td>
</tr>
</tbody>
</table>

Source: Ministry of Fisheries and Livestock (2017)
The beef and dairy sectors are growing at around 7 percent and 10 percent annually respectively. In 2017, Government continued to implement livestock restocking programmes through multiplication and sale of cattle and goats to small-scale farmers, women, youths and the differently abled people.

During 2017, Keembe pig breeding centre sold 278 pigs to small scale farmers out of 1,128 pigs which were available at the time. Over 700,000 cattle had been vaccinated against major diseases namely: Foot and Mouth Disease (FMD), Contagious Bovine Pleuropneumonia (CBPP), East Coast Fever (ECF), Anthrax, Black Quarter, Haemorrhagic septicaemia, Rabies and New Castle Disease. As a result of these effective control measures, there has been a notable reduction of livestock diseases in disease prone areas (MFL, 2017, Personal Communication). In 2017, Zambia also recorded a reduction in deaths arising from CBPP, FMD, Rabies and New Castle.

6.8.2 Fisheries

The fisheries and livestock sector in Zambia experienced some key policy gains in 2017. With regard to capture fisheries which have been faced with depleting fish stocks, the main focus in 2017 has been on training of co-management committees, monitoring control and surveillance, and stock assessments. The department of Fisheries successfully implemented the 2017 mandatory annual fish ban in order to reverse the declining fish catches. Major activities undertaken in 2017 with regard to the development of aquaculture included: aquaculture park development, genetic improvement of fish species for culture, training of fish farmers, fish feed improvement, and fingerling production. In addition, research on fish feed fortification with lemon fruit to boost immunity of fish continued at the National Aquaculture Research and Development Centre in Mwekera.

The Government continued promoting aquaculture through establishment of Aqua-parks in high potential zones. Planning for infrastructure development in aquaculture parks began under the Zambia Aquaculture Enterprise Development Project (ZAEDP). Overall, growth in the fisheries sub-sector was strengthened for both capture and aquaculture with production increasing to a total of 77,029 MT for the period January to June 2017, from 56,241 MT recorded over the same period in 2016 (Figure 26). This was explained by higher participation by commercial and emergent fish farmers in aquaculture, and enhanced enforcement of fisheries regulations in capture fisheries. The MFL, and the Zambia Bureau of Standards collaborated in harmonising fish and fish trade standards that are in line with COMESA and the Southern Africa Development Community (SADC) member countries.
Despite recording growth in aquaculture and livestock production, the fisheries and livestock sub-sectors continue to face numerous challenges. These challenges are summarised in Box 3.

**Box 3**

**Challenges facing the Fisheries and Livestock sector**

- Inadequate and delayed releases of budgeted funds for programme implementation;
- Weak policy frameworks for fisheries and livestock;
- High prevalence of livestock pests and diseases;
- Unsustainable and illegal fishing practices and overfishing in natural water bodies;
- Inability to undertake a livestock census and regular annual statistical surveys;
- Inefficient input and output markets;
- High post-harvest losses;
- Inefficient agricultural extension services
Chapter 7

Budget Highlights
The total budget for 2018 is ZMW 71.7 billion (or 25.9 percent of the GDP), an 11 percent increase from ZMW 64.51 billion in 2017. Of this, ZMW 6.34 billion was allocated to the Agriculture sector, an increase of 26 percent increase from ZMW 6.03 billion in 2017. The share of allocation to the agricultural sector decreased from 9.4 percent in 2017 to 8.8 percent in 2018, moving further away from the CAADP target of 10 percent. Box 4 presents some budget speech highlights for the agricultural sector planned for 2018.

**Box 4**

**Agricultural Sector Budget Speech Highlights**

- To diversify agriculture and raise farmer productivity through development of a farm block model of which three will be on board in 2018
- Complete construction of eight (8) remaining artificial insemination centres to improve livestock production
- Continue working on 200 dip tanks to prevent animal disease and construct four (4) regional laboratories
- Removal of customs duty on various inputs that are used in the manufacture of stock and fish feed
- Introduction and development of farm blocks in Muchinga, Copperbelt and Northern provinces
- Full migration to E-Voucher system to cover one million beneficiaries
- To maintain the strategic food reserves at 500,000 MT Finalise the comprehensive livestock and aquaculture census in 2018
- Promotion of cage fish farming on Lake Mweru, Kariba, Tanganyika, Bangweulu, and in water bodies in Western province
- Recruitment of 750 extension service workers for Agriculture, Fisheries, and Livestock
- Facilitation of US$ 100 million Public Private Partnership investment for agricultural mechanisation in Lusaka South Multi-Facility Economic Zone
- Some notable successes of E-FISP Pilots
  - A comparison of implementation costs between the e-voucher and conventional FISP showed that Government could save a lot of money by implementing FISP through the e-voucher, as there are no procurement, transportation, storage, and handling costs involved.
  - Participation of the private sector in input distribution to rural farmers increased by 83 percent, from 230 agro-dealers during the 2015/16 farming season, to 422 during the 2016/17 season.
  - Although farmers were still biased to redeeming fertilizer and maize seed, the system encouraged agricultural diversification. For instance, in the livestock rich areas such as Southern province, about 10 percent of the households reported purchasing veterinary drugs and dip chemicals, and another 5.5 percent redeemed their vouchers for insecticides and herbicides.
  - Evidence from IAPRI show that the E-FISP will create more than 3000 jobs associated with the expansion of the input agro dealers.
7.1 Implementation of FISP through E-Voucher (E-FISP)

After two pilot phases, the Government announced the nationwide e-voucher roll-out during the 2017 budget speech. The full migration of the FISP through the electronic voucher countywide in 2017/18 agricultural season was welcome by many stakeholders.

- Number of beneficiaries has reduced from 1.6 million to 1 million
- Spending on FISP has reduced by 35 percent between 2017 and 2018, but remains very high at 35.4 percent of MoA budget or 62.4 percent of Poverty Reduction Programmes
- 2018 e-FISP allocation is still 33 percent higher than 2016 allocation.

In general, if implemented well, the e-FISP is intended to achieve the following objectives:

- Reduce public expenditure on the delivery of inputs;
- Crowd in more private sector in agro-input distribution, thereby promoting competitiveness and transparency in the supply and distribution of inputs;
- Ensure timely delivery and access to inputs by smallholder farmers;
- Provide farmers with freedom to choose inputs of their choice thereby promoting agricultural diversification; and
- Reduce leakages and increase the number of intended beneficiaries by linking the e-cards to a particular farmer and their National Registration Card (NRC).

7.2 FRA Pricing and size of Strategic Grain Reserves

The government announced that the strategic grain reserves of the country would be maintained at 500,000 MT and market based pricing would be used by the FRA. However, scepticism towards this pronouncement has remained among some stakeholders as calls by farmers continue for FRA to exceed its target; more especially with the crash in maize and soya beans prices in 2017.

The Government should be commended for not interfering with the maize prices during the 2017/18 marketing season. There is no doubt that the move towards market based pricing system by FRA will continue to attract a lot of attention and resistance from various stakeholders. Nevertheless, the time is now for Government to remain steadfast because if sustained, the decision will result in less volatile prices in the medium to long run, with limited government intervention.

7.3 Zambia Aquaculture Enterprise Development Project

The government allocated ZMW 50 million towards the development of fish, fingerlings and feed production. This is in line with government efforts towards diversification of the agricultural sector through increased aquaculture production. This allocation is also aimed at providing support to the private sector in developing the aquaculture value chain through activities such as establishing freezing and processing facilities, hatcheries, and fish feed plants.

7.4 Agricultural Mechanisation

The Minister of Finance in the 2018 budget speech revealed that US$ 100 million has been secured under a Public Private Partnership to facilitate a tractor and agricultural equipment assembly plant in the Lusaka South Multi-Facility Economic Zone. Also, US$ 40 million had been obtained from EXIM bank of India for the purpose of agricultural mechanisation.
7.5 Tax measures to the Agriculture Sector

A number of tax measures were announced. Stakeholders welcomed the tax incentives to the sector in the form of reduction in customs duty or Value Added Tax (VAT) exemptions. No analysis has been done yet to comment on the impact of the tax proposals.

**TAX REDUCTIONS**
- Removal of 20% capital allowance on new plant and machinery acquired by a soft drinks manufacturer set up in a rural areas
- Suspension of customs duty on various inputs used in the manufacture of stock feed and fish feed
- Extension of the range of imported products that are locally produced on which a surtax will apply
- Reduction of customs duty on bricks used in the formation of furnaces from 15% to 5%
- Removal of customs duty on refractory materials from 15% to 0%
- Exemption of unprocessed and semi-processed tobacco from Value Added Tax
- Removal of insurance premium levy on reinsurance as a way of reducing the cost of insurance

**TAX INCREASES**
- Introduction of excise duty of ZMW2 per 50 Kg of cement
- Increase customs duty on unprocessed tobacco and tobacco refuse from 15% to 25% or ZMW 15 per Kg, which is higher
- Introduction of a levy at the rate of 15% on all imports that are not accompanied by a corresponding proof of payment through the banking system
- Introduction of 5% Property Transfer Tax on Intellectual Property. This includes trademarks, patents and brands that can be traded
Chapter 8

Conclusion
Policy Stability?
The agricultural sector is key to unlocking economic growth and provides the main support for Zambia's rural economy. The potential for agricultural growth in Zambia is staggering but requires very tough decisions to be made in order to fully harness this potential. This potential is intricately linked to the stated priorities, actions, and investments of the public sector, which has been constrained by maize centric policies and sometimes ad hoc policy shifts affecting private sector investment and operations.

Improvements of rural livelihoods as the key to achieving broad-based poverty reduction and improved environmental outcomes in Zambia. They require among other things, enhancing smallholder agricultural productivity, expanding agricultural markets and trade, improving natural resource management, and expanding the resilience of vulnerable households to external shocks. All this requires the private sector to be the centre with the Government providing the necessary supportive role.

The Zambian Government in 2017 committed to a country-wide rolling out of the e-FISP, a step in the right direction with regards to stimulating agricultural diversification. The FRA Act proposals of expanding the role of the Agency into local and export market are not in line with the country’s commitments to having an agricultural sector that is private sector-led.

Based on an extensive literature review of best global and regional practices on successful economic diversification, key findings suggest that for Zambia to achieve broad based economic growth through agriculture there is need for:

- Increased and sustained investment in research and development to enable the country to adopt modern country-specific farming techniques that are suitable to its culture and climate.
- Guided public and private investment in infrastructure.
- Increased promotion of the diversification of Zambia’s agricultural sector by implementing policies that utilise the comparative advantage of the diverse agricultural conditions in the country.
- Promotion of the commercialisation of the agricultural sector through the removal of the constraints that farmers face, especially in accessing both short and long-term agricultural finance, productivity enhancement technology, extension messages, and markets.
- Promotion of value addition to generate stronger forward and backward linkages between sectors of the economy.
- Creation of a conducive and stable policy environment that allows for the greater participation of the private sector.
- Stronger institutions that support the agricultural transformation agenda.
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