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 “to be the Centre of Excellence for Agricultural Policy Research and Outreach in Zambia”.

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 utilize 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
Preface

I give me great pleasure to present to you IAPRI’s first issue of the Zambia Agriculture Status Report covering the period January to December 2016. This report comes at a pivotal time when the country experienced moderate El Niño weather conditions, held peaceful tripartite general elections under a new republican constitution, and piloted the FISP electric voucher.

Compared to other countries in the region, Zambia was not as devastated by the El Niño weather conditions. Despite this development, the uncertainty of the effects of the El Niño raises questions as to how Zambia and other countries in the region can better prepare for such climatic cycles. With the advent of climate change, the frequency of events such as the El Niño and La Niña are expected to increase. The need for regional Governments to invest in this new area of concern has become more imperative than ever before.

Early in the year, we saw the Government embrace the open border policy bringing the country appreciable foreign exchange from the export of maize grain, maize products, and seed. Farm gate prices rose to levels above that offered by FRA, and private sector were in the lead buying maize from smallholder farmers. Unfortunately, Zambia did not fully take advantage of the regional export opportunities as exports were banned in May, 2016. As the only country in Southern Africa with a maize surplus, the high demand in the region resulted in increased informal trade.

The Ministry of Agriculture implemented the e-voucher pilot (E-FISP) in 13 districts. This is a step in the right direction. Preliminary results of the e-voucher pilot implementation has helped to crowd in agro-dealers, provided farmers with a choice of inputs to utilize for their specific farming needs, reinforced the possibility of moving the agriculture diversification aspiration forward, and saved the country resources as inputs did not need to be physically distributed to recipients. The year ended with the Government announcing that the E-FISP would be implemented countrywide in 2017.

This report is the first of an annual series that will be produced by IAPRI summarizing the status of the agriculture sector in Zambia. The next volume will therefore, be published in December 2017. IAPRI welcomes your feedback in order to improve the content of this series.

Chance Kabaghe
Executive Director, IAPRI
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Contents

Preface ii
List of Figures vi
List of Tables vii
List of Abbreviations viii

Chapter 1. Agriculture’s Place in Zambia’s Economy 1

Chapter 2. Structure of the Zambian Agricultural Sector 3

Chapter 3. Performance of the Zambian Agricultural Sector in 2016 7
  3.1 2015/2016 Agricultural Season 8
  3.2 Progress towards CAADP Targets 9
  3.2.1 Agricultural Gross Domestic Product 9
  3.2.2 Declining agriculture contribution to GDP 10
  3.2.3 Quality of the Agricultural Sector Budget 10

Chapter 4.0 Improved Technology use 14
  4.1 Fertilizer use 15
  4.2 Electronic Voucher -FISP pilot 17
  4.3 Use of Improved Seed 20

Chapter 5. Agricultural Trade Performance 22
  5.1 Maize Export Ban 27

Chapter 6.0 Sector Performance 28
  6.1 Maize 29
Contents

6.1.1 Extent of participation of private sector in maize marketing 30
6.2 Wheat 30
6.3 Soya beans 31
6.4 Cotton 32
6.5 Mixed Beans 34
6.6 Groundnuts 35
6.7 Horticulture 36
6.8 Fisheries and Livestock 36

Chapter 7.0 2017 Budget Highlights 42
7.1 Implementation of FISP through E-Voucher (E-FISP) 44
7.2 FRA sticking to Strategic Grain Reserves 44
7.3 Emergent Farmers Assistance Fund 45
7.4 Tax measures to the Agriculture Sector 45

8.0 Conclusion 47

References 49
List of Figures

Figure 1: Rainfall, Soil and Crop Suitability by Agro-Ecological Region  2
Figure 2: Zambia’s Farm Structure  5
Figure 3: Contribution of Agriculture to GDP and Value added per worker, 2005-2015  9
Figure 4: Agriculture growth rates, 2011-2015  10
Figure 5: Share of Agriculture Budget/Spending to Total Government Budget  11
Figure 6: 2016 Budget Allocation to Ministry of Agriculture  13
Figure 7 A: Fertilizer use and rate of use among smallholder farmers, 2003 to 2016  15
Figure 7 B: Fertilizer use and rate of use among smallholder farmers, 2003 to 2016  16
Figure 8: Total Fertilizer consumption, 2002-2014  16
Figure 9: Total Fertilizer consumption, 2002-2014  17
Figure 10: Improved seed use, 2003 to 2016  20
Figure 11: Agriculture imports and exports, 2011-2016  24
Figure 12: Net agricultural export value in Zambia: 2011 - 2016  24
Figure 13: Proportion of value of exports in total value of agricultural exports, 2011-2016  25
Figure 14 A-D: Import to Export Ratios for Fisheries, Horticulture, Groundnuts and Tobacco  26
Figure 15: Maize Production, Area Planted and Yield, 2012-2016  29
Figure 16: Wheat Production, Area Planted and Yield, 2012-2016  31
Figure 17: Soya Bean Production, Area Planted and Yield, 2012-2016  32
Figure 18: Cotton Production, Area Planted and Yield, 2012-2016  33
Figure 19: Mixed beans Production, Area Planted and Yield, 2012-2016  34
Figure 20: Groundnuts Production, Area Planted and Yield, 2012-2016  35
Figure 21: Comparison of Budget Allocations to MOA and MFL  38
Figure 22: Fish Production in Metric Tonnes: 2010 – 2015  41
List of Tables

Table 1: Types of Inputs Redeemed through the e-voucher in the 13 Pilot Districts  18
Table 2: Livestock Population: 2010 -2015  40
Table 3: Livestock Products: 2010 -2015  40
List of Abbreviations

CAADP  Comprehensive Africa Agriculture Development Programme
CFS    Crop Forecast Survey
CSO    Central Statistical Office
DRC    Democratic Republic of Congo
E-FISP Electronic Farmer Input Support Programme
E-Voucher Electronic Voucher
FISP   Farmer Input Support Programme
FRA    Food Reserve Agency
GDP    Gross Domestic Product
LCMS   Living Conditions Monitoring Survey
MoA    Ministry of Agriculture
MFL    Ministry of Fisheries and Livestock
MoFNP  Ministry of Finance and National Planning
MT     Metric Tonnes
NAIP   National Agriculture Investment Plan
NGO    Non-Governmental Organisations
PRPs   Poverty Reduction Programmes
SPS    Sanitary and Phyto-Sanitary
VAT    Value Added Tax
Chapter 1

Agriculture’s Place in Zambia’s Economy
Zambia’s agriculture sector provides the main support for the rural economy. This assertion is based on the fact that about forty nine percent of the Zambian population depends on agriculture, primarily through smallholder production for their livelihoods and employment (CSO, 2014). Notwithstanding this fact, in 2015 the sector contributed 8.5 percent to the GDP and approximately 9.6 percent of national export earnings (CSO, 2015; World Bank, 2016). The potential for agricultural growth in Zambia is staggering. With over 750,000 km² of land, massive endowments in surface and sub-surface water resources, and a population density of just 19.24 people per km², Zambia is uniquely blessed with the natural endowments to become the breadbasket of the southern and central African region (Figure 1).

In the early stages of development, the growth of the agricultural sector is key for achieving development objectives (Diao et al., 2010). Therefore, as a developing country, growth in the agricultural sector is the clearest avenue through which sustainable economic growth and poverty reduction can be achieved in Zambia.

Figure 1: Rainfall, Soil, and Crop Suitability by Agro-Ecological Region

Source: Author’s illustration using data from Ministry of Agriculture
Chapter 2
Structure of the Zambian Agricultural Sector
Where is Zambia’s Agriculture?
Zambian agriculture has three broad categories of farmers: smallholders, medium, and large-scale. The smallholder farmers are the majority and are classified into three categories (Category A, B, C). Category A are the smallest and they cultivate between 0 and 2 hectares. They are mainly producers of staple crops especially maize with an occasional marketable surplus. Category B smallholder farmers are those cultivating between 2 and 5 hectares; whilst Category C are those cultivating between 5 and 20 hectares. The medium and large-scale farmers are just a small fraction of the farming community but these farmers produce various crops for both the local and export market.

The current estimate of the medium and large scale farmers may be understated because there is evidence to suggest that a lot more home-grown emergent medium and large-scale farmers have established themselves in the past few years. The Ministry of Agriculture in collaboration with IAPRI and Michigan State University are currently planning an exercise to update these estimates.

Figure 2 illustrates the structure of the Zambian agricultural sector in 2016.

Source: Authors illustration with data from Crop Forecast Survey (2016)
Chapter 3

Performance of the Zambian Agricultural Sector in 2016
3.1 2015/16 Agricultural Season

The 2015/16 agricultural season was characterised by El Niño weather pattern which plunged the country into much speculation and anxiety about food security. This was exacerbated by the fact that the year 2016 was an election year hence, maize and food security issues were very topical and sensitive.

Notably, there was growing concern that due to poor rainfall at the start of the 2015/16 agricultural season, Zambia would not be able to produce enough maize to feed its population especially those in the southern regions of the country i.e. Western, Southern, Lusaka, Eastern, and some parts of the Central Province. Fortunately, the effects of El Niño were moderate and the country managed to produce an exportable surplus of more than half a million metric tonnes (more than 12 million 50 kg bags).

In general, the northern parts of the country received normal to above normal rainfall, and maize production in these areas offset the shortfall in production from the southern parts of the country, which received normal to slightly below average rainfall.

Picture taken in Southern Province by Cardinal Hachikona, IAPRI
3.2 Progress towards CAADP Targets

Zambia like most countries in Africa is a signatory to 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 following the Maputo Declaration on Agriculture and Food Security in 2003, and reaffirmed by the Malabo Declaration in June 2014.

The declaration committed African 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. Pursuant to its participation in the CAADP process, Zambia in May 2013 launched its 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 objectives.

3.2.1 Agricultural Gross Domestic Product

Zambia’s agricultural GDP has over the years been sustained at above 6% (Figure 3). Due to a myriad of factors including a reduction in production due to poor rainfall, load shedding, rising input prices, and the depreciation of the Kwacha, Zambia’s agricultural GDP is expected to drop to below 8.1% in 2016.

Source: Central Statistical Office (2016); World Bank (2016)

Figure 4 shows the agricultural GDP growth rate for Zambia for the period 2011 to 2016. Due to poor rainfall in both the 2014/15 and the 2015/16 agricultural seasons, the country recorded a decline in agricultural GDP growth from 1.1 percent in 2013/14 down to -7.7 percent in 2015, and is expected to remain negative in 2016. Despite this decline, the sector’s contribution to GDP has consistently been above eight (8) percent, whilst the rate of growth has remained below the CAADP target of 6%.

Nevertheless, if appropriate investments are made, conducive and stable agricultural policies are implemented, and the business environment is improved, Zambia has significant potential to transform its agricultural sector to perform above and beyond the CAADP targets.

\[ \text{The NAIP focuses on four key investment areas: (i) sustainable natural resources management; (ii) agricultural production and productivity improvement; (iii) market access and service development; and (iv) food and nutrition security and disaster management.} \]
3.2.2 Declining Agriculture Contribution to GDP

As shown in Figure 3, Zambia’s agricultural GDP has followed a downward trend since 2005. One might ask whether this is good or bad, and the answer would be “it depends”. To adequately answer this question, one has to analyze other trends in the economy. Ideally, if structural and agricultural transformation is taking place, the agricultural sector contribution to GDP is supposed to decline. Meaning productivity in the sector would be increasing, thus the level of output and productivity per worker increases creating linkages that feed into the growing manufacturing and other related sectors of the economy. Therefore, a decline in the contribution of agriculture to total GDP would be accompanied by an increase in the manufacturing sectors which absorbs the surplus labour from the agricultural sector. However, if this is not happening, then the declining contribution of agriculture to total GDP would be viewed as a bad situation.

Unfortunately, Figures 3 shows that Zambia’s declining contribution of agriculture to GDP is not accompanied by increases in agricultural labour productivity or increases in the manufacturing sector respectively. Badiane (2011), finds that in most African countries, the decline in agriculture GDP is mostly associated with the movement of the labour force from the agricultural sector into the informal service sector in urban areas, and is usually not the result of productivity increases. This trend shows that the agricultural sector in Zambia has failed to stimulate growth in other sectors and create the necessary linkages required to transform the economy.

3.2.3 Quality of the Agricultural Sector Budget

Figure 5, shows the trend of the annual budgetary allocations to agriculture in Zambia. The budget for the agricultural sector in 2016 was 6.5 percent of the national budget down from 9.5 percent in 2015. However, it is important to note that this was not only peculiar to the ministries of Agriculture, Fisheries and Livestock but other ministries as well due to a reduction in the overall government budget in 2016.

This is not to say that Zambia has completely failed to achieve the 10% CAADP target. Since 2003, about nearly half of the Zambia’s budgetary allocation to agriculture has in fact surpassed the CAADP target. This determination is reached if and when supplementary funding to output price support through the Food Reserve Agency (FRA) and input subsidies via the Farmer Input Support Program (FISP) is included in the analysis of the budgetary allocation (orange bars in Figure 5).
However, as depicted in Figure 5 in other years including 2016, the agriculture budget allocation has been below the CAADP target of 10 percent. These observations point towards the need for the Government of Zambia to review the composition of the agricultural budget in order to align it with the needs of the Zambian agricultural sector.

Although, Zambia has made some progress towards achieving the growth and spending objectives of CAADP. A closer examination of the agricultural sector’s quality of expenditure raises significant concerns. This is due to the observation that the distribution of the agricultural budget in 2016 like in the past years has not placed enough emphasis on the broad-based public investments necessary to stir agricultural growth and transformation. As a result, in 2016, a significant proportion of the Ministry of Agriculture’s budget (58 percent) was allocated to FISP and FRA, translating to 98 percent of the poverty reduction programmes (Figure 6). Unfortunately, these programmes have been found to be ineffective at boosting productivity or reducing rural poverty (see Nkonde et al., 2011; Burke et al., 2012; Mason et al., 2013).
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. This is due to the fact that 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 marginal decline in rural poverty by 1.3 per cent from 77.9 per cent in 2010 to 76.6 per cent in 2015 (LCMS, 2015). This is despite heavy spending on FRA and FISP. Continued heavy spending on FISP and FRA has left few resources to invest in these well recognized drivers of agricultural growth. Zambia’s primary policy objective of achieving accelerated growth and competitiveness in the agricultural sector cannot be achieved unless adequate public resources are committed towards catalysing the desired growth.
Chapter 4

Improved Technology Use
Adoption of improved agricultural technology 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; fertilizer use and improved seed.

### 4.1 Fertilizer Use

Figure 7A shows the percentage of households that used fertilizer over the period 2002 to 2016. Nationally, about 58.4 percent of rural households reported using fertilizer in the 2015/16 agricultural season. This fertilizer was mostly earmarked for maize. The proportion of households using fertilizer decreased by one percentage point from 59.2% in 2015. In 2016, fertilizer use varied by province, with Lusaka having the highest percentage (76.4 percent) of farmers that used fertilizer, followed closely by Central with 75.5 percent. Western Province on the other hand had the least percentage of farmers that used fertilizer, with only 11.7 percent reporting using fertilizer in 2015/16 agricultural season (Figure 7B). The total fertilizer used among the smallholder farmers in Zambia declined by 21.9%, from 348,764 metric tonnes (MT) to 272,764 MT (CFS report, 2016).

Over the past decade or so, there has been an upward increase in the percentage of farmers reporting using fertilizer as well as the rate of fertilizer application (Figure 7A). Across all rural agricultural households, the average fertilizer use per hectare in 2016 was 100.7 kilograms per hectare among fertilizer users compared to 120.7 kilograms per hectare in 2015, a 16.6 percent decrease.

**Figure 7A: Fertilizer use and rate of use among smallholder farmers, 2002 to 2016**

![Fertilizer use and rate of use among smallholder farmers, 2002 to 2016](image)

**Source:** Crop Forecast Survey (2003 – 2016)
In general, at the national level, the total fertiliser nutrients used in Zambia has been trending upwards since 2002 mainly because the number of farmers using fertilizer has been increasing, and FISP can be credited for this increase. (Figure 8). In terms of kilograms of fertiliser per hectare of arable land, Figure 9 shows that Zambia’s fertiliser consumption has increased by 69.2 percent from 26 kilograms per hectare since the inception of FISP in 2002 and reached 44 kilograms per hectare in 2014, just 6 kilograms short from the Abuja Declaration target of at least 50 Kilograms per hectare.

Source: FAOSTAT (December 08, 2016)
Zambia is now in the process of reforming the FISP to implement the subsidy programme through a flexible electronic voucher (E-voucher). After years of lobbying for the government to reform the FISP subsidy program by various stakeholders (including IAPRI), the Ministry of Agriculture (MoA) launched the e-voucher program as a pilot in 13 selected districts during the 2015/2016 agricultural season, with an initial target of 241,000 smallholder farmers. MoA has been working on the modalities of expanding the pilot to 39 districts during the 2016/17 farming season. This expansion is expected to lead to the rolling out of the program to the rest of the country in 2017 as announced by the Minister of Finance during the 2017 budget presentation.

During the 2015/16 agricultural season about 25 percent of FISP was distributed through e-vouchers. Preliminary findings from IAPRI research show that the implementation of the e-voucher system has crowded-in more private sector participation in the distribution of inputs to rural farmers in the initial 13 pilot districts. Agro-dealers were able to stock more diverse inputs in their shops. Despite some notable delays in e-cards activation, most farmers reported having access to inputs of their choice on time in nearby agro-dealer shops. In general, about 85 percent of the farming households redeemed their vouchers for fertilizer and maize seed while the other 15 percent purchased other farm inputs (Table 1).

However, there were variation by Province. For instance, in the livestock rich areas such as Southern Province, about 10 percent of the households reported purchasing veterinary drugs and dip chemicals, 2.6 and 2.9 percent redeemed their vouchers for insecticides and herbicides respectively.

The purchase of other inputs apart from maize seed and fertilizer is likely to increase during the second phase of pilot as farmers choose inputs of their own choice depending on the comparative advantage in their area. It is therefore, highly likely that the E-FISP will continue to serve as an important tool in unlocking the potential for agricultural diversification. This is a step forward in moving from a maize-centric agricultural structure to a more diversified agricultural sector.

Source: FAOSTAT (December 08, 2016)
Despite these successes, the e-voucher pilot was faced with challenges that threatened the successful implementation of the program. Box 1 summarises some of these challenges. Details of the lessons learnt during the implementation of the E-voucher pilot are contained in the policy brief entitled “Lessons Learnt from the Implementation of the E-voucher Pilot” (Kuteya et al., 2016).
BOX 1

2015/16 E-Voucher Pilot Implementation Challenges

• Delayed submission of beneficiaries lists to the MoA Programme Coordinating Office resulting in delayed delivery and activation of e-cards;

• Rising fertilizer prices due to the depreciation of the kwacha that nearly made the e-voucher less attractive to the traditional FISP. Government had to top-up the value of the voucher from 1,400 to 2,100 kwacha, inclusive of farmer contribution of 400 kwacha;

• There were cases in Central Province of deliberate effort by some MoA staff to derail the implementation of e-voucher pilot in support of the traditional FISP. MoA’s quick action to discipline renegade staff solved the problem;

• Reported selective activation of e-cards, a problem that led to delayed access of inputs by some farmers;

• Reported incidences of farmers surrendering their non-activated cards to agro-dealers to access inputs in advance. This could have led to some farmers being disadvantaged as some agro-dealers might have redeemed the cards in the absence of the farmers;

• The charging of a redemption fee of 7 kwacha affected some farmers as they could not use the full value of the e-card; and

• E-voucher redemption system did not have the capability to identify the type of inputs redeemed by farmers limiting the usefulness of data captured. The inability to identify the inputs redeemed makes it impossible to map the demand for various inputs, information that will be useful for input suppliers and monitoring the extent to which the programme is helping unlock agriculture diversification.
4.3 Use of Improved Seed

Figure 10 compares the percentage of households using different types of seed over the period 2002 to 2016. Nationally, about 62 percent of the rural households used improved seed (irrespective of crop) in 2016 compared to 71.5 percent in 2015. For maize, the number of farm households using improved seed was 64.3 percent, decreasing by 10.8 percent from 2015.

There has been a general upward increase in improved seed use in Zambia. For example, since 2002, the number of farm households using improved seed increased by 33 percentage points. It was highest in 2015 and lowest in 2003. During the same period, the number of seed companies has also increased from 5 to approximately 16. This suggests that the 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 given the fact that hybrid maize seed is part of the subsidised package. Furthermore, the Government Food Security Pack (FSP) -which distributes free hybrid maize seed to vulnerable households- may have contributed to this increase in use of improved seed.

Source: Crop Forecast Survey (2002-2016)
Chapter 5

Agricultural Trade Performance
Zambia could become a major food exporter to Eastern and Southern Africa. The country shares borders with nine countries and as earlier alluded to, relative to other countries in the region, it has an abundance of water and fertile land, and a generally favorable climate for agricultural production. Additionally, as compared with other countries in the region it has a well-developed agri-business sector with more than 400,000 smallholder households linked to private firms through vertically integrated out-grower programs primarily for cotton, and (less so) sugar, tobacco, and soya beans. Large commercial farms and estates also play an important role in Zambian agriculture and account for the bulk of exports of sugar, tobacco, wheat, horticulture products, coffee, and soya beans.

Figure 11 shows the value of agricultural imports and exports as well as the ratio of imports to exports in Zambia for the period 2011 to 2016, whilst Figure 12 shows the net agricultural export values for the same period. The value of agricultural imports have stayed almost consistent at around US$420-440 million whilst agricultural exports have been trending downwards. This trend is shown by the rising ratio of agricultural imports to exports, meaning the country is increasingly importing more than it is exporting. This trend is augmented in Figure 12, where the net agricultural export values is clearly trending downwards.

In 2016, it is projected that Zambia will be a net importer of agricultural products. This may be mainly attributed to the maize export restrictions/ban instituted in 2016. The maize trade situation in 2016 is discussed later in this publication.
Figure 11: Agriculture Imports and Exports, 2011-2015

Source: ITC Trade Map (2016)

Figure 12: Net Agricultural Export Value in Zambia: 2011 - 2015

Source: Author calculations based on data from FAOSTAT (2016)
Figure 13 shows the proportion of different commodities and associated products in the value of agricultural exports between 2011 and 2015. What is discernable from this is that Zambia has five (5) main agricultural exports: a) maize and maize products; b) sugar; c) tobacco; d) cotton; and e) horticulture ranked in order of importance. The exports of maize and maize products fluctuate depending on season and government policy. There are indications that the value of maize and maize exports in 2016 will be far less than 2015 because of the export ban/restrictions place on the sector in May 2016.

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. Over the years, the value of imports for fisheries products has been increasing and in 2016 grew by more than 250 times than the value of exports. This is not surprising because the demand for fish and fish products outstrips local supply hence the remainder has to be filled by imports.

Import and export ratios for the other agricultural commodities and products (fisheries, horticulture, and livestock) are presented in Figures 14a to 14d.
We observe an increasing trend for horticultural commodities and products (Figure 14B), 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 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 2016, from 8.9 tonnes to 1.3 (Figure 14C).
5.1 Maize Export Ban

In 2016, Zambia was the only country in the southern African region with surplus maize. Hence, the demand for this maize was very high. Nevertheless, the government in May 2016 announced a temporary export ban of maize grain and maize products until after the general elections. This ban remains in place with a selective exemption for the Zambia Cooperative Federation to export 100,000 MT to Malawi.

In 2016, the opportunities for the country to earn foreign currency from maize exports could not be vigorously exploited because of the tripartite elections and the fear that exports would jeopardise Zambia’s food security. Unfortunately, the evidence that Zambia had enough maize in the country was largely ignored and the borders remained closed. This essentially meant that the potential for Zambia to demonstrate to its neighbours that it had the potential to become the regional food basket was missed. Instead, informal maize trade in 2016 was reported to be rife especially to Malawi and the Democratic Republic of Congo where prices for both grain and mealie meal were much higher than Zambia (see Chisanga and Chapoto, 2016).

Zambia, needs to embrace a managed maize trade regime without jeopardising food security. Time is running out to lift the export ban because the region is likely to get a good harvest in 2017. This means Zambia may be stuck with a lot of grain which will discourage private sector participation in the market or result in a price crash that may discourage farmers to produce maize in the future. A deliberate effort to supply deficit neighbours such as Zimbabwe, Malawi and DRC needs to be made without affecting local food security. What is required is advance planning.

Picture taken in Copperbelt, Kasumbalesa by Brian Chisanga IAPRI
Chapter 6

Sector Performance
6.1 Maize

The CFS results for 2015/16 showed that maize production would increase by 9.7 percent from 2,618,221 MT to 2,873,052 MT (Figure 15). While the average yield increased from 1.75 MT/Ha to 2.10 MT/Ha from the previous crop forecast. However, area planted declined by 8.66 % from 1,494,451 Hectares in 2014/15 season to 1,364,977 Hectares in 2015/16. Zambia’s 2016 food balance sheet, indicated that the country had sufficient stocks to fulfil both human and industrial use. With a total carry-over stock of 667,524 MT, Zambia’s total maize supply in the 2016/17 marketing season was 3,540,577 MT, with a marketable surplus of about 634,681 MT (MoA/CSO, 2016).

Despite the El Niño in 2015/16 production season, maize production has been within the average production range for the past five years. The largest harvest in Zambia’s was recorded in 2013/14. The country has increasingly become self-sufficient in the production of maize. With good rainfall and the sustained provision of huge government subsidies on both the production and marketing side, the country has continued to produce maize surpluses. The late onset and the improvement in the rainfall situation in the later parts of the season helped farmers who planted late to realise a near normal to above average harvest averting the fears of poor harvest due to El Nino.

Figure 15: Maize Production, Area Planted and Yield, 2012-2016

Source: Crop Forecast Survey Data (2012-2016)
6.1.1 Extent of Participation of Private Sector in Maize Marketing

Given the tight market conditions in the region, private traders participation in the maize market in 2016 exceeded expectations. Throughout the year, private traders were not deterred by the announced FRA buying price of K85 per 50kg bag (approximately US$170/tonne) because on average, the private traders were buying from smallholders at prices above FRA and paying on the spot. In some cases, prices were as high as K112 per 50kg (approximately US$224/tonne). By the end of the major maize buying season in August/September 2016, the private sector had bought more than 63 percent of the total reported maize surplus from the smallholder farmers. On the other hand, FRA had only managed to purchase about 260,000 metric tonnes (27% of total purchases from smallholder farmers), unlike other years where August/September were the peak purchase months.

On the other hand millers were not very active in the market. Based on past experiences, millers were anticipating that the government would supply their requirements out of the FRA’s 1,000,000MT anticipated purchase target. The experience in 2016 should encourage millers to buy their own requirements at market prices in order to minimize the heavy burden of an ineffective subsidy on the Treasury.

6.2 Wheat

Based on provisional production estimates, wheat production in 2016 is expected to be around 221,644 MT declining from 309,000MT in 2015. However, yields increased from 6.7 MT/ha to 7.6 MT/ha (Figure 16). The El Nino weather that characterised the 2015 season led to a decline in area. In addition power rationing also contributed to farmers reducing their area under wheat. Due to fears that the country would have shortages in wheat production, the Zambian government permitted the importation of up to 10,000 MT of wheat. However, the amounts of wheat imported to date are below this amount and based on the SAFEX/JSE futures market, wheat prices are coming down in anticipation of a good harvests in the region in 2017.

As at November 11, Zambia had about 142,520 MT of wheat stocks in the country (Stocks Committee, 2016). With the anticipated production and stocks available, the domestic supply of wheat will amount to 364,164 MT. Based on last years’ consumption requirements of 387,193 MT, this means that Zambia might have a marginal shortfall of about 23,029 MT.
6.3 Soya beans

Zambia has experienced tremendous growth in soya beans production in the last decade driven mainly by the livestock industry and human consumption including edible oils. Large commercial farmers still account for the larger share of soya beans production. However, small scale farmers have increased their production of soya beans. According to the Crop Forecast Survey, soya beans production in 2016 increased from 226,323 MT in 2015 to 267,490 MT. As at November 11, 2016, the stocks of soya beans in the country were 248,491 MT. According to the Food Balance Sheet, the domestic requirement is about 230,000 MT hence, Zambia has sufficient stocks of soya beans to meet the domestic demand with surplus for export.

Figure 17 shows that the production of soya beans and associated yields have been fluctuating due to weather patterns because area under soya beans has been trending upwards since 2012. As the soya beans production and processing sectors have matured in Zambia, significant protectionist pressure has begun to mount from policy lobbying groups, including ZNFU. The argument lodged by the lobby are that cheap edible oil imports are hampering the development of the soya bean sector and thus driving down incentives to invest in soya beans production and processing. To that effect, we have started to see trade restrictions bring imposed on the soya beans sector a situation that needs to be closely monitored in order not to promote inefficient producers or foster the development of an uncompetitive market for soya beans and its products.
6.4 Cotton

Cotton is one of the major export crops grown solely by smallholder farmers in Zambia. It is a crop produced by over 150,000 smallholder households, representing 10 percent of smallholder farmers in Zambia (Kabwe et al., 2016). Cotton production was 111,902 MT in 2016, a 7.7 percent increase from 2015. This is mainly explained by the slight increase in yields of about 100 kilograms per hectare since area under cotton has been trending downwards (Figure 18). Low productivity continues to be the major hindrance to growth in the sector making the sector uncompetitive and confining producers to poverty.
In terms of the general trends, cotton seed production peaked in 2012 with production as high as 275,000 MT. Since then, cotton seed production has averaged around 110,000 MT. There are currently 11 ginning companies with over 300,000MT ginning capacity per annum.

Prices of cotton have been a major disincentive for cotton producers in Zambia. Despite the gradual increase in prices of seed cotton on the local market from ZMW1.6 per kg of seed cotton in 2012 to ZMW2.6 per kg of seed cotton in 2014, production has continued to decline. This is partly due to the mistrust farmers have developed over the ginning companies, thus failing to respond to price incentives. However, when the price of seed cotton increased to ZMW2.6 per kg in 2015 from ZMW2.5 per kg of seed cotton in 2014, farmers responded and cultivated more cotton. This response was anchored in an increased level of trust from farmers based on a noted consistency in the increase of the price of seed cotton. However, seed cotton production of 2015 was affected by prolonged drought that was experienced in cotton growing areas. This resulted in farmers reducing area under cotton in 2016. However, because of improved yield, 2016 recorded an increase in production.
6.5 Mixed Beans

Mixed beans is one of the six most widely grown crop in Zambia apart from maize, groundnuts, sweet potatoes, cassava and rice (Tembo and Sitko, 2012). About 14% of the smallholder farmers in Zambia grew mixed beans in 2016. According to the Crop Forecast Survey, mixed beans production in 2016 declined from 50,398 MT in 2015 to 45,351 MT. The reduction was mainly due to a reduction in the area under mixed beans as well as a slight decline in the yield. Nevertheless, mixed beans yield has remained below one (1) metric tonne and the area under cultivation and production has been declining since 2014 (Figure 19).
6.6 Groundnuts

Groundnuts are the second most widely grown smallholder crop in Zambia. Improving the performance of the groundnut sector therefore holds significant opportunities for improving smallholder livelihoods. These opportunities are magnified by the fact that global producer prices for groundnuts continue to rise mainly due to the growing demand in China for groundnut oil. Tapping into this export opportunity holds significant promise for diversifying Zambia’s agricultural sector, increasing foreign direct investment (FDI), and decreasing rural poverty.

According to the Crop Forecast Survey, groundnuts production in 2016 increased from 111,429 MT in 2015 to 131,526 MT. Figure 20 shows that the area under groundnuts had increased between 2012 and 2014, after which it started to decline. Yields have generally remained below one (1) metric tonne, with fluctuations from year to year. Notably, the last time the country produced more than 150,000 MT of groundnuts was in 2010. One of the major reasons is that farmers continuously recycle groundnuts seed and this has resulted in the deterioration of yields. Therefore, in order to make Zambian groundnuts more competitive on the world market, there is need to investment in enhancing seed supply, as well as ensuring SPS compliance particularly given that groundnuts are susceptible to aflatoxin infection. The promotion/establishment of public investment in testing facilities, which are were freely available to companies seeking to export groundnuts would help to offset some of the risk of investing in the sector and stimulate more production and productivity.

Source: Crop Forecast Survey Data (2012-2016)
6.7 Horticulture

Rapidly rising urban populations, changing consumption patterns and renewed growth in per capita incomes in Zambia is creating major opportunities for local farmers by driving growth in domestic and regional market demand for food including horticultural crops (fruits and vegetables). Horticulture also provides significant value added potential through packaging, canning, slicing and dicing, and production of juice, sauces, preserves, and inputs to other food processing activities, all of which provide important opportunity to create jobs in both urban and rural areas. Unfortunately, this sector has largely been neglected by the Government in terms of policy, as it continues to prioritize the development of the maize sector which has very low potential to solve poverty issues in the country. The lack of policy support to the sector is evidenced by the absence of annual production and marketing data about the sector. Hence, it was not possible to provide comprehensive statistics about the sector in 2016.

The Rural Livelihoods Surveys done by IAPRI in collaboration with MoA and CSO provides some estimates about horticulture participation by rural smallholder farmers but lacks data on what is happening in urban areas. Nevertheless, past studies by IAPRI have shown that the poverty reduction potential for fruits and vegetables relative to maize is clear. For example, a relatively market oriented smallholder in Zambia might sell 1 to 2 metric tons of maize to FRA at an estimated price of K70 per 50 kg. The total gross revenue of this farmer would be K2,800.00 (approx. US$280), nearly all of it occurring immediately after harvest. The average smallholder farmer producing tomato on the other hand, may produce 10-15 metric tons (on less land) over several months and sell it at an average price of K2 to K3/kilogram, for a total gross value of K20,000.00 to K30,000.00 (approx. US$2000 to US$3000) -- 8- to 10 times higher than typical maize sales values (Hichaambwa & Chamberlin, 2015)

However, in trying to exploit these opportunities, smallholder farmers confront a series of often intractable constraints including; high costs of production and marketing; lack of intensive knowledge required for flourishing horticulture production; fresh produce’s perishability, and the lack of any cold chain; and extreme variability in prices. The horticulture sub-sector receives no public sector support throughout the value chain, except for isolated projects related to smallholder market linkage efforts by NGOs and other non-state actors. Therefore, Government needs to make a deliberate effort to support smallholder horticultural production and marketing, as well as data collection to realize the poverty reduction potential of this sector.

6.8 Fisheries and Livestock

A year and three months has since passed since the establishment of the Ministry of Fisheries and Livestock. 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 2016, the Ministry of Fisheries and Livestock received about 23 percent of the total agriculture budget compared to 0.03 percent in 2015 when the Ministry was still combined (Figures 21A to 21B).
The rising demand for animal proteins is driving a significant change in livestock markets for smallholder farmers. Policies and investments that support greater commercialization by smallholder livestock producers hold significant income growth and poverty reduction potential. Based on the Rural Agricultural Livelihood Survey of 2015, fisheries and livestock account for 8.6% of smallholder incomes and this contribution can be as high as 20% depending on the livestock type and the area of production. On average, livestock accounts for 21.6% of the smallholder productive assets, though the relative importance of livestock varies from province to province.

Data from the Ministry of Fisheries and Livestock shows that in 2014 and 2015 (Table 2, Table 3, and Figure 21 A and B). Table 2 also presents the projected livestock population and growth rates between 2015 and 2016. The piggery sub-sector is growing at about 40 percent each year, followed by aquaculture at 18 percent, then by poultry and egg production.
Figure 21: Comparison of Budget Allocations to MOA and MFL
**Table 2: Livestock Population: 2010 -2015**

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</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>3,038,000</td>
<td>3,478,510</td>
<td>3,598,700</td>
<td>4,026,658</td>
<td>4,300,000</td>
<td>4,624,220</td>
<td>4,984,909</td>
<td>7.5</td>
</tr>
<tr>
<td>Sheep</td>
<td>711,707</td>
<td>727,364</td>
<td>727,367</td>
<td>3,023,585</td>
<td>115,338</td>
<td>131,300</td>
<td>149,420</td>
<td>13.8</td>
</tr>
<tr>
<td>Goats</td>
<td>758,501</td>
<td>830,558</td>
<td>796,426</td>
<td>101,456</td>
<td>3,500,000</td>
<td>4,095,000</td>
<td>4,823,910</td>
<td>17.0</td>
</tr>
<tr>
<td>Pigs</td>
<td>711,707</td>
<td>1,108,192</td>
<td>1,815,685</td>
<td>1,098,951</td>
<td>1,533,402</td>
<td>2,146,762</td>
<td>3,048,403</td>
<td>40.0</td>
</tr>
<tr>
<td>Poultry</td>
<td>34,800,000</td>
<td>47,100,000</td>
<td>71,500,000</td>
<td>22,605,273</td>
<td>146,000,000</td>
<td>174,470,000</td>
<td>212,853,400</td>
<td>19.5</td>
</tr>
</tbody>
</table>

*Projection
Source: Ministry of Fisheries and Livestock (2016)

**Table 3: Livestock Products: 2010 -2015**

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<tbody>
<tr>
<td>Milk (MT)</td>
<td>215,000</td>
<td>306,000</td>
<td>370,000</td>
<td>452,000</td>
<td>463,020</td>
<td>524,000</td>
<td>13.2</td>
</tr>
<tr>
<td>Eggs (000)</td>
<td>326,000,000</td>
<td>429,000,000</td>
<td>529,547,245</td>
<td>630,112,735</td>
<td>1,058,000,000</td>
<td>1,216,700,000</td>
<td>15.0</td>
</tr>
<tr>
<td>Hides</td>
<td>238,584</td>
<td>245,987</td>
<td>278,219</td>
<td>289,025</td>
<td>303,174</td>
<td>313,785</td>
<td>3.5</td>
</tr>
<tr>
<td>Beef</td>
<td>23,129,471</td>
<td>25,874,903</td>
<td>29,375,668</td>
<td>30,474,284</td>
<td>3,800,000</td>
<td>4,104,000</td>
<td>8.0</td>
</tr>
<tr>
<td>Pork</td>
<td>288,767,500</td>
<td>328,752,000</td>
<td>332,039,520</td>
<td>383,378,816</td>
<td>408,751,305</td>
<td>439,407,653</td>
<td>7.5</td>
</tr>
<tr>
<td>Poultry</td>
<td>1,846,793</td>
<td>5,274,563</td>
<td>1,580,529</td>
<td>3,409,572</td>
<td>3,818,227</td>
<td>4,352,779</td>
<td>14.0</td>
</tr>
</tbody>
</table>

Source: Ministry of Fisheries and Livestock (2016)
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 2.

**Box 2**

**Challenges facing the Fisheries and Livestock Sector**

- Weak policy framework for fisheries and livestock;
- Inability to undertake a livestock census and regular annual statistical surveys;
- High prevalence of livestock diseases;
- Unsustainable fishing practices and overfishing in natural water bodies;
- Low productivity of local livestock breeds and inadequate fish fingerlings at the disposal of small-scale farmers;
- Poor supply of quality fingerlings and fish feed; and
- Ineffective extension services resulting in low adoption rates of technologies by farmers.
The total budget for 2017 is K64.51 billion (or 27.2% of the GDP), a 9.4 percent increase from K53.14 billion in 2016. Of this K6.08 billion was allocated to the agricultural sector, an increase of 84.1% from 2016. The share of allocation to the agricultural sector increased from 6.5 % in 2016 to 9.4% in 2017, reaching close to the CAADP target of 10%. Box 3 presents some budget speech highlights for the agricultural sector planned for 2017.

- To develop a sustainable, diversified and competitive agriculture sector;
- To promote diversification to cash crops cotton, cashew nuts, soya beans, cassava and rice;
- To promote fisheries and livestock by establishing 18 artificial insemination centres, cordon line in Shangombo to Jimbe, 4 fingerling centres in Rufunsa, Mungwi, Kasempa, and Chipepo as well as expanding the Fisheries Development Fund;
- To fully migrate to E-voucher starting 2017/18 agricultural season;
- Launching of Cashew Nut Infrastructure Support Program (US$55.4 million) for 600,000 beneficiaries in Western Province;
- Setting up of 20 irrigation schemes under the PPP model, particularly in farm blocks;
- Use of ICT to improve delivery of extension services to farmers;
- Policy consistency (agricultural marketing and trade), open border policy by introducing 10% tax on maize exports and FRA to stick to strategic reserves;
- Scaling up FSP from 30,000 to 40,000 beneficiaries and increased allocations to social cash transfers;
- Creation of a Fund under the Emergent Farmer Support Program (US$40 million) to support 1,000 emergent farmers in mechanization of crop production.
7.1 Implementation of FISP through E-Voucher (E-FISP)

The implementation of the FISP through the e-voucher countywide in 2017 was welcome by the stakeholders. However, the main question raised by many stakeholder was regarding why the allocation to FISP had been increased by about 189 percent from the previous allocation in 2016. The Ministry of Agriculture at the IAPRI Budget Analysis breakfast explained that the increase was mainly due to the value of the voucher which was increased from K1000 to K1700 per recipient and the fact that budgeting was done by crop with the number of beneficiaries for maize maintained at 1,000,000 farmers.

7.2 FRA sticking to Strategic Grain Reserves

Private sector welcomed the pronouncement by the Minister of Finance that the FRA in 2017 would only purchase strategic reserves. However, some stakeholders remain sceptical that this policy will be actualized given that the government in the past has failed to adhere to its promise by announcing to buy beyond the target and at above market prices resulting in supplementary fund being released to cover the cost of the additional purchases.

It is also worth noting that the allocation to FRA in 2017 was increased by 25.6% from the allocation in 2016. This mainly due to the increase in FRA purchase price from K75 to K85 per 50 kilogram bag.
Recent studies have shown that most of the emergent farmers are:

- Mostly urban based or rural elites;
- Going into farming for commercial purposes;
- Using and adopting new and improved technologies which make them more productive and efficient;
- More sophisticated than an average farmer;
- Produce for the market hence contribute to national food security;
- Marketing systems are transforming and becoming more dynamic as they look at the value chain.

7.3 Emergent Farmers Assistance Fund

The government allocated K40 million to the Emergent Farmers Assistance Fund and an additional K20 million to benefit 1000 farmers. This is a new fund and details are yet to be availed on how it will be implemented. However, it is recommended that for this fund to be meaningful to the agriculture sector, the fund should be managed through the financial sector and that farmers need to qualify through a merit based system.

7.4 Tax Measures to the Agriculture Sector

The budget speech was coupled with the announcement of a number of tax measures targeting the agricultural sector. Stakeholders welcomed the tax incentives to the sector in the form of reduction in customs duty or Value Added Tax (VAT) exemptions, whilst proposed new taxes or hiking of duties was met with mixed reactions depending on the effect on various stakeholders. For example, the 10 percent maize export tax was heavily criticised by Grain Traders Association of Zambia (GTAZ) and the Zambia National Farmers Union (ZNFU), whilst the Millers Association of Zambia (MAZ) welcomed the move on the basis that it would enable Zambia to export more value added products. No analysis has been done yet to comment on the impact of these proposals.
TAX REDUCTIONS

- Capital allowances rate on plant, equipment and machinery used in farming and agro-processing which has been increased from 50% in 2016 to 100% in 2017.
- Fish seed and fish feed exempt for VAT purposes.
- Fittings for irrigation –25% customs duty to be waived
- Aquaculture implements –customs duty to be suspended for a period of three years

TAX INCREASES

- Customs duty increase on semi-processed edible oil from 5% to 15% and on spare parts for various machinery and equipment from 5% to 15%
- Introduction of a 10% export tax on maize exports
Zambia has had a good year and held general elections under a new republican Constitution. Politically this is an opportunity given that the new Constitution, and the full five year government mandate will promote economic stability. There are some accepted economic realities such as the current tight fiscal space, climate change, and high rural poverty. Addressing the challenges in the agricultural sector requires that the most effective tools and strategies be employed. Business as usual is not an option. Hence, the government needs to be prepared to implement major changes which are likely to be unpopular initially but will within a short period result into broad-based economic growth.

Paraphrasing the Republican President’s words from his official opening of Parliament on 30th September 2016; the agricultural sector has the greatest potential to be Zambia’s vehicle for reduce poverty, and become a major foreign exchange earner. Indeed, there are ample opportunities that have the potential of awakening the agricultural sector in the country. However, this status update shows that as it stands, Zambia is still operating under the guise of “business as usual” in terms of public expenditure, productivity, and agricultural policies.

The current agricultural policies constrain growth by underfunding investments in key agricultural growth drivers that can benefit all rural people, such as; rural infrastructure (roads, rail, and telecommunication), agricultural research and development, market information, irrigation, institutions that foster the development of effective markets, and complementary services such as agricultural extension and credit. Further, the continuance of maize-centric policies is seriously undermining Zambia’s ability to become a stronger player in the regional agricultural sector, which further inhibits inclusive growth.

Zambia needs to return to a food policy and investment plan that addresses the following fundamental food policy challenges:

1. How to design agricultural inputs and output marketing systems to better serve as a catalyst for broad-based farm productivity growth, particularly for smallholders living near or below the poverty line;

2. How to cost-effectively deal with price instability for both consumers and producers in a liberalized marketing system;

3. How to develop the commitment to a consistent and stable policy environment to support long run private investment, and insulate the new systems from disruptive policy lurches in response to short-term political objectives; and

4. How to design a process of collaboration between policymakers, donors, researchers, and the private sector to maximize the probability of achieving improved agricultural policy and performance over time.
References


The Agricultural Sector In Zambia Requires...