Budgetary Implications of the Agriculture, Fuel, and Electricity Subsidies
Submitted to the Expanded Committee on Estimates

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1.0 About IAPRI

Established in 2011, Indaba Agricultural Policy Research Institute (IAPRI) is Zambia’s first indigenous policy research institute dedicated to the analysis of the agricultural and environmental sectors. IAPRI is a non-profit company limited by guarantee and collaboratively works with public and private stakeholders. IAPRI exists to carry out agricultural policy research and outreach, serving the agricultural sector in Zambia to contribute to 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, amongst other things; enhancing smallholder agricultural productivity, expanding agricultural markets and trade, improving natural resource management, and the expanding the resilience of vulnerable households to external shocks. IAPRI dedicates substantial research and advocacy efforts towards inducing beneficial change in Zambia’s agricultural policy environment.

IAPRI’s mandate is to utilize empirical evidence to advise and guide the Government of Zambia 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 trusted, impartial, and high-quality research on agricultural, food, and natural resource policy issues in Zambia, and the wider southern African region;
- Integrating research findings into national, regional, international programs and policy strategies to promote sustainable agricultural growth, and reduce 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.

2.0 Subsidies in Zambia

In order to achieve the policy objective of reducing poverty and improving income distribution, Zambia has employed a number of policy measures and programs to help smallholder farmers. To properly understand the benefits and negative effects of the removal of agriculture, fuel, and electricity subsidies, it is important first to clarify the economic role that these subsidies are meant to play.

In Zambia, agricultural input subsidies are implemented through the Farmer Input Support Programme (FISP), Food Security Pack (FSP) and Social Cash Transfer, whilst output or maize price subsidies are implemented through the Food Reserve Agency (FRA). The FISP’s main objective was to secure the country’s food security through smallholder maize production by improving their access to affordable inputs, while FSP
is a Government transfer program aimed at ensuring food security, alleviating poverty, and reducing malnutrition through increased crop production among vulnerable households.

While input subsidies are meant to lower the cost of production for smallholder farmers, maize price subsidies attempt to lower consumer prices and raise producer prices (Kuteya et al., 2014). The role of fuel and electricity subsidies in agriculture is meant to reduce the cost of commodity production and processing.

However, the perception surrounding these subsidies is anchored around the belief that they have not been achieving their intended purposes. This belief can be reinforced by the fact that in 2013, the Government removed the fuel, farmers, and millers subsidies under the presupposition that spending on these subsidies was greatly draining the national treasury. The removal of these subsidies were received with mixed feelings and those opposed to the action feared that the move could have adverse effects on crop production - especially among the poor farmers - and compromise national food security. On the other hand, those in favour of the removal of subsidies felt losses in crop production to agro-processing were likely to be minimal as these subsidies largely benefited wealthier farmers.

In spite of evidence indicating that very little of the subsidy benefits are passed onto the intended beneficiaries, the Government has continued devoting huge sums of money towards FRA and FISP subsidies. Table 1 shows both approved and released funds/subsidies for FISP and FRA from 2013 to 2016. Table 1 shows that the share of released funds against the budgeted amounts for FISP and FRA since 2013 through 2015 was in fact above 100%. This figure can be attributed to the supplemental funding that was directed to support these subsidy programs outside of the budgeted amounts. For example in 2014, the proportion of released funds against what was initially budgeted was roughly 300%. In 2013, the amount released for the FRA was nearly four times higher than the budgeted amount. The immediate implications of these budgetary discrepancies include that resources directed towards supplementing subsidy budgets might be drawn from other equally important core activities. Ultimately, these core activities tend to receive less funding than initially allocated which in turn affects their efficiency and effectiveness in meeting their planned objectives for the year.

The disparities between approved estimates and actual releases suggest that the agricultural budget only offers a rough guide of spending priorities. The total funds spent on FISP and FRA alone since 2013 through 2016 was more than 10.4 billion kwacha given that the releases in 2016 were for the first 110 months of the year, January to October. Although no research has been done to establish the right size of the FISP, the current FISP size seems to be on a higher side.
### Table 1: FISP and FRA Subsidies, 2013 to 2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Farmer Input Support Programme</th>
<th>% Released</th>
<th>Food Reserve Agency</th>
<th>% Released</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approved Budget (K'000)</td>
<td>Released (K'000)</td>
<td>Approved Budget (K'000)</td>
<td>Released (K'000)</td>
</tr>
<tr>
<td>2013</td>
<td>499,972</td>
<td>1,122,467</td>
<td>300,000</td>
<td>1,111,189</td>
</tr>
<tr>
<td>2014</td>
<td>500,000</td>
<td>1,455,726</td>
<td>1,013,331</td>
<td>1,544,787</td>
</tr>
<tr>
<td>2015</td>
<td>1,338,068</td>
<td>2,118,440</td>
<td>992,901</td>
<td>1,887,047</td>
</tr>
<tr>
<td>2016*</td>
<td>1,003,551</td>
<td>786,540</td>
<td>750,000</td>
<td>394,800</td>
</tr>
<tr>
<td>Total</td>
<td>3,341,591</td>
<td>5,483,173</td>
<td>3,056,232</td>
<td>4,937,823</td>
</tr>
</tbody>
</table>

Source: Ministry of Finance

*Releases for 2016 were as at October, 2016

These two programs are politically popular but substantially drain the national treasury, with limited impacts on productivity and poverty reduction. Spending on FRA and FISP has been done at the expense of broad based expenditure on key drivers of agricultural growth. Examples of key drivers of agricultural growth include; rural infrastructure (roads, rail, and telecommunication), agricultural research and development, market information, irrigation, and institutions that foster the development of effective markets, and complementary services such as agricultural extension and credit. Additionally, these programs have been maize centered thereby undermining Zambia's ability to become more diversified to achieve sustainable and inclusive agricultural growth as well as to become the region's food basket. The benefits of FRA and FISP have accrued to mostly the larger and relatively already well off households with very little impact on yields and poverty reduction. Consequently, rural poverty has remained high at above 75% for over two decades.

For subsidy programs to have an impact on farmers, it is important to understand the three broad categories of farmers in Zambia's agricultural sector. These are smallholders, medium, and large-scale. The smallholder farmers are the majority which are also classified into three categories (Category A, B, C). Category A are the smallest and they cultivate between 0 and 2 hectares. These are mainly producers of staple crops especially maize with an occasional marketable surplus. Category B smallholder farmers cultivate between 2 and 5 hectares, whilst Category C cultivate between 5 and 20 hectares. It is very important to consider these categories when targeting beneficiaries of subsidies. The medium and large-scale farmers are just a small proportion of the total farmers in the country. These farmers produce various crops for both the local and export market. Figure 1 illustrates the structure of the Zambian agricultural sector.
3.0 The Big Beneficiaries from FISP and FRA Subsidies

According to Kuteya et al., (2016), distributors of fertilizer i.e. transporters and fertilizer companies that are offered government tenders, benefit more from public resources under FISP. Further, Chapoto et al., (2015) found that those who are thought to benefit directly from FISP and from the operations of FRA tend to oppose any changes to the design and structure of the programmes. The authors also found that as long as there is something to be gained from the status quo, people tend to protect it. This rent-seeking behavior tends to obstruct change.

Mason and Jayne, (2012) found that about 33% of the subsidized fertilizer does not reach the intended beneficiaries, and instead ends up being resold as commercial fertilizer. There has always been a huge discrepancy between the targeted number of beneficiary households and those who actually receive the FISP fertilizer. For example, Table 2 shows that since 2010 through to 2013, less than half of the targeted number of farming households reported to have benefited from FISP fertilizer (Column E). For fertilizer tonnage, on average, only 60% of the planned quantity was distributed each year since the program’s inception in 2002/03 agricultural season (Column G).

Studies that evaluated Malawi’s subsidy program also indicated that the targeting system was weak because relatively wealthier households acquired more Government subsidized fertilizer than poorer households (Chibwana, Fisher, and Shively, 2011; Ricker-Gilbert, Jayne, and Chirwa 2011). Research findings from Asia and high-income countries also suggest that the costs of universal subsidies often outweigh their benefits, and that input suppliers usually capture a large part of those benefits because the cost savings are not fully passed on to farmers (Brooks, Dyer, and Taylor, 2008 as cited in Ricker-Gilbert, Jayne, and Shively, 2013).
Table 2. FISP Targeted and Actual Beneficiaries by Year

<table>
<thead>
<tr>
<th>Agricultural season</th>
<th>Planned fertilizer (MT)</th>
<th>Subsidy level (%)</th>
<th>Target # of beneficiary HHs</th>
<th>Actual # of beneficiary HHs</th>
<th>% of beneficiary HHs</th>
<th>Fertilizer received by HHs (MT)</th>
<th>% of fertilizer received by HHs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002/03</td>
<td>48,000</td>
<td>50%</td>
<td>120,000</td>
<td>102,113</td>
<td>85%</td>
<td>31,722</td>
<td>66%</td>
</tr>
<tr>
<td>2003/04</td>
<td>60,000</td>
<td>50%</td>
<td>150,000</td>
<td>101,139</td>
<td>67%</td>
<td>33,372</td>
<td>56%</td>
</tr>
<tr>
<td>2004/05</td>
<td>46,000</td>
<td>50%</td>
<td>115,000</td>
<td>64,854</td>
<td>56%</td>
<td>16,792</td>
<td>37%</td>
</tr>
<tr>
<td>2005/06</td>
<td>50,000</td>
<td>50%</td>
<td>125,000</td>
<td>74,040</td>
<td>59%</td>
<td>23,595</td>
<td>47%</td>
</tr>
<tr>
<td>2006/07</td>
<td>84,000</td>
<td>50%</td>
<td>210,000</td>
<td>164,229</td>
<td>78%</td>
<td>58,404</td>
<td>70%</td>
</tr>
<tr>
<td>2007/08</td>
<td>50,000</td>
<td>50%</td>
<td>125,000</td>
<td>140,612</td>
<td>112%</td>
<td>43,596</td>
<td>87%</td>
</tr>
<tr>
<td>2008/09</td>
<td>80,000</td>
<td>75%</td>
<td>200,000</td>
<td>192,860</td>
<td>96%</td>
<td>55,114</td>
<td>69%</td>
</tr>
<tr>
<td>2009/10</td>
<td>100,000</td>
<td>75%</td>
<td>500,000</td>
<td>292,685</td>
<td>59%</td>
<td>69,103</td>
<td>69%</td>
</tr>
<tr>
<td>2010/11</td>
<td>178,000</td>
<td>76%</td>
<td>891,500</td>
<td>430,141</td>
<td>48%</td>
<td>116,116</td>
<td>65%</td>
</tr>
<tr>
<td>2011/12</td>
<td>182,454</td>
<td>79%</td>
<td>914,670</td>
<td>422,624</td>
<td>46%</td>
<td>108,396</td>
<td>59%</td>
</tr>
<tr>
<td>2012/13</td>
<td>183,634</td>
<td>XX</td>
<td>877,000</td>
<td>122,533</td>
<td>14%</td>
<td>33,657</td>
<td>18%</td>
</tr>
<tr>
<td>2013/14</td>
<td>188,312</td>
<td>50%</td>
<td>900,000</td>
<td>440,810</td>
<td>49%</td>
<td>115,341</td>
<td>61%</td>
</tr>
<tr>
<td>2014/15</td>
<td>208,236</td>
<td>--</td>
<td>1,000,000</td>
<td>---------------------------</td>
<td>Not available</td>
<td>-------------------------------</td>
<td></td>
</tr>
</tbody>
</table>

Source: MAL 2014b; MAL/CSO Various years.

On the other hand, FRA’s activities have also largely impacted negatively on the private sector participation in maize marketing. For instance, the FRA’s pan-territorial purchasing prices, which have usually exceeded market prices, have driven some private actors out of the market. In addition, in a number of years, the FRA has purchased the majority of the maize on the market dampening demand for traders or commercial farmers as the commercial mills lobby for subsidized maize from FRA. This move by the FRA has reduced competition in the wholesaling sector and concentrated the maize supply chain around a Government-led marketing system. Furthermore, the FRA’s selling of maize at subsidized prices to commercial millers later in the year does not only give comparative advantage to millers that access subsidized maize, but also creates price uncertainty in the maize market. These factors have been discouraging the commercial farming sector from producing maize (Kuteya and Sitko, 2015).

According to the Famine Early Warning Systems Network (FEWS NET), the FRA in 2011 bought maize from farmers at $270 per metric tonne and sold it to millers at $180 per metric tonne. This resulted in a “50 percent loss” to the Government. In 2013, according to then Minister of Agriculture, Hon. Robert Sichinga, the FRA was buying maize at 65 kwacha per 50kg bag and selling to millers at less than 5 kwacha the purchase price. This amounted to a loss of 100 kwacha per metric tonne (IRIN News, 2013).

Chisanga and Chapoto, (2016) have estimated that the costs of purchasing and storing 500,000 Metric Tonnes (MT) of maize for eight (8) months by the FRA are in excess of 1 billion kwacha (Table 3).
Table 3: Estimated Cost of Maintaining a 500,000 MT Strategic Reserve

<table>
<thead>
<tr>
<th>Cost of new crop purchased July - October 2014</th>
<th>Unit</th>
<th>Quantity</th>
<th>Price/Cost per unit ZMW</th>
<th>Total ZMW</th>
<th>Total US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value based on purchase price</td>
<td>MT</td>
<td>500,000</td>
<td>1,700</td>
<td>850,000,000</td>
<td>85,000,000</td>
</tr>
<tr>
<td>Logistics costs</td>
<td>MT</td>
<td>500,000</td>
<td>200</td>
<td>100,000,000</td>
<td>10,000,000</td>
</tr>
<tr>
<td>Estimated 8 months carry costs (Oct '16 to May '17)</td>
<td>MT</td>
<td>500,000</td>
<td>90</td>
<td>45,000,000</td>
<td>4,500,000</td>
</tr>
<tr>
<td>Re bagging costs</td>
<td>MT</td>
<td>500,000</td>
<td>100</td>
<td>37,500,000</td>
<td>3,750,000</td>
</tr>
<tr>
<td>Estimated total costs of new crop purchased July-October 2016</td>
<td></td>
<td>1,032,500,000</td>
<td>103,250,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Translated Cost/MT as at end May 2017</td>
<td></td>
<td></td>
<td></td>
<td>2,065</td>
<td>207</td>
</tr>
</tbody>
</table>

Source: Chisanga and Chapoto, (2016).

4.0 Electricity and Fuel subsidies

Since 2015, electricity shortages led to the importation of power by ZESCO, at a higher cost to the Government. In an effort to maintain the cost to consumers, an electricity subsidy amounting to about 1.7 billion Kwacha by the Zambian Government has been in effect. Similarly, high crude oil prices triggered government’s intervention in form of a fuel subsidy to cushion against a potential negative impact on consumers. This has cost the treasury about 10 billion Kwacha from 2013 to 2016. In total, 20 billion Kwacha has been spent on FISP, FRA, electricity, and fuel subsidies.

Table 4: Electricity and Fuel subsidies, 2013 to 2016

<table>
<thead>
<tr>
<th>Year</th>
<th>Electricity Arrears</th>
<th>Fuel Arrears</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approved Budget (K'000)</td>
<td>Released (K'000)</td>
</tr>
<tr>
<td>2013</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2014</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2015</td>
<td>-</td>
<td>364,458</td>
</tr>
<tr>
<td>2016*</td>
<td>-</td>
<td>1,346,400</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>1,710,858</td>
</tr>
</tbody>
</table>

Source: Ministry of Finance
*Releases for 2016 were as at October, 2016

In the short run, the benefits that are likely to come along with the removal of fuel subsidies include an increase in the level of available funds that can be channelled to other important sectors such as education and health. In the long run, the removal of this subsidy is likely to attract competition in the energy sector by enabling market forces to determine the price of fuel. On one hand, the fuel subsidy removal is likely to promote increased private sector participation in the importation of petroleum products, which will in turn enhance open competition and free-up the market. Zambians will be empowered to participate in the sector and allow the Government to focus on the development of other key sectors of the economy. The current fuel price is
likely to lead to research for cheaper power generation alternatives, such as biofuels. In time, identification, promotion and utilization of alternative sources of power may reduce the country's current overdependence on crude oil, increase competition, and help improve the economy.

On the other hand, the removal of fuel subsidies may cause imported consumer products to become more expensive as a result of increased transportation costs, this will result in an increase in the cost of living. Small scale business services that are dependent on subsidized fuel will be impacted negatively, especially given the fact that public electricity supply from ZESCO is not reliable. Equally, factories and industries that depend on petroleum products and goods transportation will experience increased production costs and therefore face an increase in the cost of doing business. Further, as a result of increases in operational costs, product competitiveness is likely to reduce. This will reality will affect the export competitiveness of Zambian products.

Similarly, the removal of the electricity subsidy is likely to lead to an increase in the level of funds available for alternative public expenditure in the short-run, this will help in reducing the country’s current budget deficits. However, the impact in the short-run is likely to be dependent on the nature of expenditure. For the medium to long term (and if maintained), the removed subsidy will make investments in the energy sector more lucrative for the private sector—an important result given that this has been a constraint to private sector investments in the past. While there are benefits to the energy sector, it is likely that the agricultural and manufacturing sectors will be adversely affected (effects include; loss of employment, reduced outputs, reduced foreign exchange earnings, and the potential closure of manufacturing firms who cannot cope with the increases in operational costs), and they will in turn pass the cost to consumers. Firms operating in agriculture will become less profitable as the rise in production costs is unlikely to be met by a proportionate increase in commodity prices. For agriculture, we expect that the impact will be highest in the poultry, dairy, and agro-processing industries. For exported produce, the impact will be felt more in the horticulture, cotton, sugar, coffee, and tobacco industries, given their increasing importance in the share of agricultural exports, and that Zambia is a small country incapable of influencing international prices.

5.0 Strategies Government can use to attract investments in the electricity sector

First and foremost, a more reliable electricity sub-sector will require increased and sustained private sector participation in the sub-sector, coupled with strong Government commitment to the development of the sector. Therefore, an electricity secure Zambia will require:

1) Private sector investments and these will be dependent on:
   - A gradually introduced cost-reflective tariff system. For this to work, existing bulk power supply agreements need to be revised to allow for adjustments
(Adamu, 2015). No private entity will engage in electricity generation unless it makes economic sense.

- Identification of a suitable Independent Producer Power Procurement Programme. This should be backed up by clear processes and documentation for power procurement and contracting. This was key in the implementation of South Africa’s Independent Producer Power Procurement programme (Eberhard and Kolker, 2014).
- Increased access to finance for the private sector via Government backed power purchase agreements. Access to finance will also depend on the profitability of the proposed investment. Smaller power projects are likely to yield positive risk adjusted returns as compared to large hydropower projects (see Ansar et al., 2014).
- A comprehensive REFIT policy that is well implemented and backed-up by up to date technologies.
- Strong Government commitment towards implementing the National Energy Policy and other associated policies. In particular, the executive branch of Government will play an important role given the powers it has over decisions made by the Energy Regulation Board (ERB) and ZESCO. Very recent experience has shown policy inconsistencies which are worrisome and a cause for concern. For instance, in February 2015 the Government approved a 24 month freeze on domestic electricity tariffs for all domestic consumers, by the last quarter, ZESCO had implemented new cost reflective tariffs on all consumers, which were very shortly after reversed by executive orders (Adamu, 2015).

2) Implementation of the National Energy Policy and Vision 2030 in a way that increases exploitation of the hydropower potential while keeping in mind the need to spread hydrological risk. Investments in the high drought-risk southern parts of the country should not come at the expense of highly potent sights in the northern and north-western parts of the country. This is key for long-term energy security in light of climate variability. Other electricity generation sources will also play an important role in reducing the load on the ZESCO grid—wind and solar technologies will be key in this respect, especially for irrigation on commercial farms, and for feeding excess power into the ZESCO grid. Diversification into thermal and geothermal power will also be vitally important (Samboko et al., 2016).

3) From ZESCO’s side, a reliable power sub-sector will require increased efficiencies, which will contribute to regular maintenance and upgrades to infrastructure.

6.0 Strategies Government can use to stabilize prices and fuel supply

1) Liberalizing the fuel sector to inject competition in the sector.
2) Prospecting for oil within the country;
3) Implementing existing liquid biofuel blending mandates, allocating previously cancelled biofuel contracts will be a key economic signal to the private sector.

7.0 Recommendations related to FRA and FISP

We recognize that recommending the complete Government withdrawal from the market is neither realistic nor desirable. However, Government must avoid policies that crowd out private sector participation, and should instead seek to facilitate market growth as well as make every effort to leverage private sector investments. For instance, in the case of FRA:

1) FRA’s role should be limited to purchasing strategic reserves, and should stick to modest prescribed quantities and areas of purchase.
2) FRA should purchase strategic reserves at market prices. FRA should seriously consider buying through the recently launched ZAMACE and the private sector (grain traders).
3) FRA should always dispose of unused strategic reserves at market prices to both the formal and informal sector, as well as selling through the commodity exchange.

As for FISP, studies suggest that implementing input subsidies through the electronic voucher system (e-voucher) can effectively address many of the problems that are facing the traditional FISP. It is hoped that the e-voucher will:

1) Promote agricultural diversification;
2) Ensure timely access to inputs by smallholder farmers;
3) Help minimize administrative burden and costs, thereby reducing direct Government involvement in inputs procurement/importation and in-country distribution;
4) Encourage private sector participation in agricultural inputs importation, manufacturing, and in-country distribution;
5) Reduce size of FISP but increase social cash transfer for needy people.

References


