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Achieving More with Less: Reform and Scaling Down of Food Reserve Agency and Farmer Input Support Programme and Boosting Social Protection

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Zambia continues to suffer from a regime of ineffectual subsidies and insufficient social protection. Despite evidence showing how the country's signature farming input and output subsidy programmes, i.e. the Farmer Input Support Programme (FISP) and the Food Reserve Agency (FRA) respectively, have failed to spur agricultural diversification, address low agricultural productivity, food security, and stubbornly high rural poverty rates, the country has continued to allocate significant resources towards their implementation. Notably, Zambia is currently grappling with the need to make some tough choices as it seeks to deliver on the Zambia-Plus Recovery Plan proposed by the Minister of Finance. Among other options, the government should consider how to scale back on discretionary spending whilst supporting economic growth and social development. Politically, maintaining the status quo is likely to be very costly given that the country can no longer afford the continued financial haemorrhage from the current operations of FISP and FRA. This paper presents a case for reforming FISP and FRA by providing alternative approaches that will work better for both the individual Zambians who rely on the state for support, and the country as a whole.

Key words:

Farmer Input Support Programme, Food Reserve Agency, Policy Reform, Social Cash Transfer, Zambia

Introduction

Zambia continues to suffer from a regime of ineffectual subsidies and insufficient social protection. Despite evidence showing how the country's signature farming input and output subsidy programmes i.e. the Farmer Input Support Programme (FISP) and the Food Reserve Agency (FRA), respectively, have failed to spur agricultural diversification and address low agricultural productivity, food security, and stubbornly high rural poverty rates, the country has continued to allocate significant resources to their implementation (see Box 1). Notably, Zambia is currently grappling with the need to make some tough choices as it seeks to deliver

on the Zambia-Plus Recovery Plan proposed by the Minister of Finance. Among other options, the government should consider how to scale back on discretionary spending whilst supporting economic growth and social development. Currently FISP and FRA take up a large chunk of this discretionary spending (about 57% of the agricultural budget in 2016 and 2017 respectively). The government needs to carefully consider how these two programmes can be more effectively streamlined.

Box 1: Reality Check

- Rural poverty currently stands at 77% despite billions of Kwacha spent on FISP and FRA (LCMS, 2015)
- Maize production has increased since the implementation of FISP and FRA but mostly at the expense of agricultural diversification. Increases in maize production have mainly been due to area expansion. Maize yields have marginally increased and the level is very low and not commercially or sustainably viable.
- Using the national nutrition indicators (wasting, stunting, and underweight), the CSO's Demographic Health Survey of 2014 reported that 40% of children under 5 are stunted, with 17% being severely stunted. Additionally, children in rural areas are more likely to be stunted (42%) than children in urban areas (36%)
- The Global Hunger Index Report (2015) ranked Zambia among the three countries with the worst rates of hunger in the World (IFPRI, Welthungerhilfe & Concern Worldwide, 2015).

There are conflicting ideas regarding how best to resolve the seemingly wasteful spending on agricultural subsidies. One school of thought advocates for the status quo to be maintained, arguing that any responsible government has an obligation to support its farmers to ensure food security and poverty reduction. On the other hand, there are calls for the complete removal of the input and output subsidies arguing that the benefits of the billions of Kwacha spent do not match the sector's growth, poverty rates, or productivity growth. Notwithstanding the strong arguments to stop the subsidy programmes, the political economy of these subsidy programmes usually leads to the status quo being the most preferred despite the high cost to the nation.

Given the sensitivities around subsidies, Indaba Agricultural Policy Research Institute (IAPRI) has been advocating for cost effective alternatives that would not burden the treasury but help achieve sustainable agricultural growth and poverty reduction. In particular, the Institute has consistently recommended that the government move towards smart subsidy programmes led by the private sector such as: the use of the flexible e-voucher, supporting

market-oriented solutions such as expanding social cash transfers (SCTs) to the poorest segments of the population in order to resolve the perceived problem of rising mealie meal prices, as well as managing the strategic reserves through the commodity exchange/warehouse receipts system.

Politically, maintaining the *status quo* is likely to be very costly given that the country can no longer afford the continued financial haemorrhage from the current operations of FISP and FRA. Government needs to make bold decisions and implement reforms that will have more far-reaching positive impacts in the agricultural sector. There is usually limited understanding of the opportunity cost of having massive programmes of this nature. At the same time, stakeholders do not understand when (for example) the government fails to pay farmers on time despite the fact that the FRA often purchases maize at above the budgeted target, or fails to fund the FISP e-voucher program.

Against this backdrop, this paper presents a case for reforming FISP and FRA by providing alternative approaches that will work better for individual Zambians who rely on the state for support, and the country as a whole. Throughout the paper, we argue that it is not prudent to maintain the *status quo* whilst simultaneously articulating alternatives that may enable the government to scale back the subsidy programme without huge political backlash.

Can Zambia Afford to Continue on the Well-Trodden Path of Heavy Input and Output Subsidies?

Given that more than 65% of the Zambian population depends on agriculture, primarily through smallholder production, for their livelihoods and employment (CSO, 2013), growth in the agricultural sector is the clearest avenue through which poverty reduction can be achieved. Nevertheless, the current spending strategy—which consistently prioritises ineffective and costly subsidies—would not achieve this desired growth and poverty reduction. Notably, most of the funds allocated to the sector over the years have been spent on fertiliser subsidies through FISP, and maize price stabilisation through FRA. Together these two programmes have accounted for 30-60% of the total agriculture budget between 2003 and 2014 (Figure 1).

Farmer Input Support Programme

Empirical evidence from IAPRI shows that in contrast to its major objectives (Box 2), FISP has not succeeded in reducing rural poverty as the upfront costs, explicit targeting, and land access requirements to be a FISP beneficiary tend to exclude poorer rural households (see Chisanga and Chapoto, 2015; Mason and Tembo, 2015; Mason *et al.*, 2013). Evidence on the impact of FISP suggests that the programme has had minimal impact on poverty, food security, and

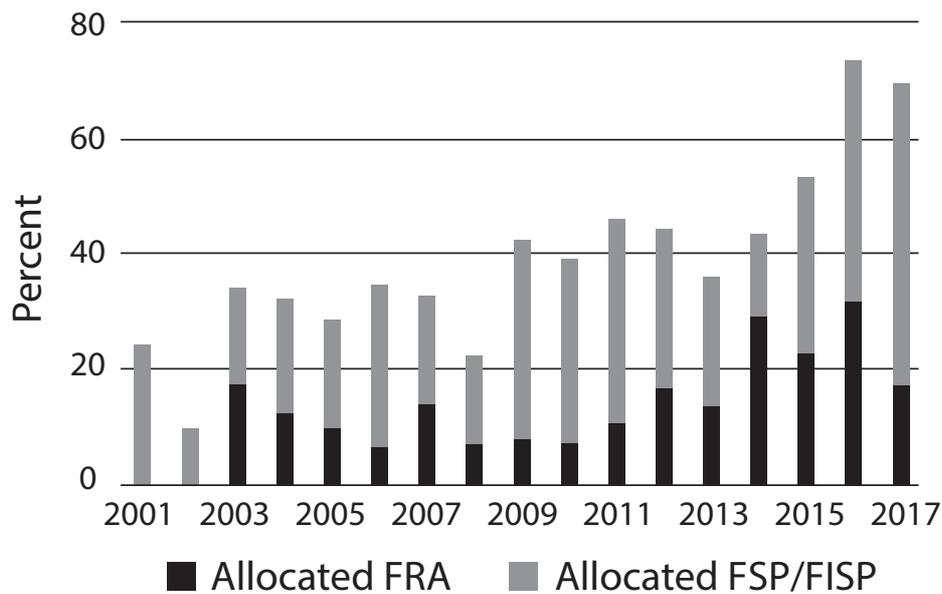


Figure 1. Share of FRA and FISP to Total Agriculture Budget Allocations
 Source: MoFNP various years; MAL various years.

smallholder farmers’ income due to implementation challenges. This includes late delivery of inputs, with 22% and 35% of farmers reporting late receipt of inputs in 2010 and 2014 respectively (Mason and Tembo, 2015; Mason *et al.*, 2013). Nkonde (2016) reported that the late receipt of inputs has been associated with a 4.2% reduction in input use efficiency, and production losses of more than 85,000 metric tonnes. In addition, nationally representative farm survey data consistently show that FISP fertiliser and maize seed have been allocated disproportionately to households with relatively large farms and greater asset wealth (Chisanga and Chapoto, 2015).

Under the traditional FISP, the private sector plays a limited role in providing input and output marketing services. Provision of subsidies tends to sideline commercial fertiliser purchases and in turn affects investments from the private sector. Households accustomed to subsidies develop a dependency syndrome as there is little evidence that farmers are graduating after two years of being on the programme.

In terms of agricultural productivity, the traditional FISP fails to recognise the spatial variability of soil fertility, and climatic conditions in the country. As a result, the traditional FISP uses the blanket fertiliser recommendation of ‘one-size fits all’ as the basis for determining the package size, and in doing so disregards the comparative advantage of different agro-ecological areas. Consequently, we have seen the government continue investing heavily in D compound and urea fertiliser, which is not suitable in large parts of the country where soils are acidic. This has adverse implications on productivity and overall production.

Box 2: Zambia's Farmer Input Support Program: Objectives and Reality:

Objectives

- Introduced in 2002 in response to the severe droughts in the 2000/01 and 2001/02 agricultural years, as well as the low loan recovery rates under the (loan-based) Fertiliser Credit Programme.
- Improving household and national food security, incomes, accessibility to agricultural inputs by small-scale farmers through a subsidy and building the capacity of the private sector to participate in the supply of agricultural inputs thereby reducing direct role of government.
- Implicit goal of poverty reduction given that the programme is classified as a "Poverty Reduction Programme –PRP" and consumes about 56.3% of PRPs budget or 30% of the agricultural budget.
- Intended beneficiaries targeting criteria:
 - Be a registered small-scale farmer and actively involved in farming within the camp coverage area;
 - Cultivate up to a maximum of 5 ha of land;
 - Have the capacity to pay the prescribed farmer contribution towards the total cost of an input pack.
 - Not concurrently benefitting from the Food Security Pack (FSP) Programme; and
 - Not be a defaulter from any agricultural credit programme.

Reality:

- No significant reduction in rural poverty – in fact rural poverty has marginally reduced from 78% to 76% since FISP was established in 2001.
 - Despite reaching maize self-sufficiency, yields remain persistently low. Production growth is mainly through areas expansion rather than productivity increases. Maize yields currently, average 2.1MT/h, 138% below the 5MT/ha as per the Malabo Declaration.
 - Limited evidence of farmer graduation.
 - Poor targeting of support, the 'one size fits all' approach hasn't worked.
 - Delays in input distribution regularly experienced by farmers.
 - Limited agricultural diversification.
 - FISP impact on private sector participation. Limited private sector participation under traditional FISP
- * *E-voucher implementing manual of 2016/17 has somewhat different targeting criteria in terms of land cultivated. The programme's target was up to a maximum of 2 ha. In addition, the target was extended to livestock farmers i.e. farmers raising 2 to 10 cattle, or 5 to 30 pigs, or 5 to 30 goats, or 20 to 100 chickens.*

Zambia is now in the process of reforming FISP to implement the subsidy programme through a flexible e-voucher. After years of lobbying for FISP reforms by various stakeholders, the Ministry of Agriculture (MoA) launched the e-voucher program as a pilot in 13 selected districts¹ during the 2015/2016 agricultural season with an initial target of 241,000 smallholder farmers. The pilot was expanded to 39 districts during the 2016/17 farming season. In the 2017 budget speech, the Minister of Finance, Hon. Felix Mutati announced intentions by the government to roll out the e-voucher to the rest of the country in the 2017/18 season. Unfortunately, the 2017 budget to FISP increased by over 189% as the number of planned beneficiaries surpassed the one million mark. Additionally, in the quest to promote agricultural diversification, MoA budgeting was done by crop. For example, the target beneficiaries for maize alone were set at one million farmers.

Reforming FISP will require the government to cut expenditure on it, and redirect these funds to investments in other key drivers of agricultural growth, such as research and development, extension, feeder roads, and irrigation. The government needs to acknowledge that FISP alone will not sufficiently energise the agricultural sector, but instead reduces funding to other key high return investments. The implementation of the traditional FISP alongside E-FISP² has also resulted in people concluding that the flexible e-voucher has been a failure. This heightened doubts whether the e-voucher would be successful when it was rolled out to the whole country in the 2017/18 agricultural season. IAPRI's E-FISP monitoring activities reveal that delayed funding due to the current tight fiscal space has led to delays in activating e-voucher cards. This is one of the factors that has led to the pilot programme being labelled 'a failure' by advocates of the traditional FISP. However, evidence from the e-voucher system in the first 13 pilot districts shows that delivering the subsidy through the e-voucher helped to involve more private sector participation in inputs distribution to rural farmers (see Kuteya et al., 2016). Participating agro-dealers stocked more diverse inputs in their shops giving farmers an opportunity to purchase inputs of their choice. Thus, a well-managed E-FISP is likely to unlock the potential for agricultural diversification in the country (Kuteya *et al.*, 2016).

Output Subsidies through Food Reserve Agency

The verdict on FRA is equally bleak. Decades of government subsidy policies have done little to address the high levels of poverty and inequality within the rural sector given that maize production and sales from smallholder farmers are highly concentrated. Depending on the year, the first 50% of sales from smallholder farmers to FRA are made by only 3-5% of farmers, and only around 30% of all smallholder farmers sell any maize to FRA at all (Chisanga

and Chapoto, 2015). In the context of a highly concentrated smallholder maize market, government maize purchases at elevated prices serve to transfer significant treasury resources to a small minority of relatively elite smallholder farmers. Given that most farmers, particularly the poorest farmers, are net buyers of the maize, at the very least, the FRA does nothing to help the majority of the rural poor which is in stark contrast to its mission of “*taking wealth to rural Zambia*” (Box 3).

Box 3: Zambia’s Food Reserve Agency: Objectives and Reality

Objectives:

- The Food Reserve Agency (FRA) was created through the Food Reserve Act, Cap 225 of the Laws of Zambia to administer the strategic food reserves, engage in market facilitation, development and management of the national storage facilities.
- FRA’s mission is to ensure national food security and provide market access for rural-based smallholder farmers by maintaining a sustainable national strategic food reserve.
- According to FRA, its main objective is to secure national food reserves and take wealth to rural Zambia.

Source: <http://fra.org.zm/about-us/>

Reality:

- Limited market facilitation: FRA in most years has failed to adhere to the statutory strategic reserve often buying above the prescribed target, hence, failing to encourage private sector participation.
- Setting FRA prices above the prevailing market prices causes market distortions.
- Interventions aimed at ensuring national food security and taking wealth to rural Zambia have had very little impact on the incomes of the poorest households.
- Increase in the average price levels of maize does not benefit the majority of the rural poor who are not able to produce a surplus.
- FRA buys mostly from larger and relatively better-off farmers.
- High pan-territorial and pan-seasonal prices hurt about 30% of rural farmers who are net buyers.
- FRA subsidy to consumers mainly benefit millers who receive subsidised maize.
- Delayed payments to farmers.
- FRA buying activities curtail agricultural diversification as most farmers tend to follow the market offered by FRA.

Buying beyond the prescribed strategic grain reserves target (currently 500,000 metric tonnes) has resulted in farmers being paid late, and made it difficult for the private sector to plan and operate efficiently. Further, the offloading of maize by FRA on the market at a reduced or subsidised price continues to hurt farmers producing early maize; grain traders; and all millers who do not have access to the discounted FRA maize price. These interventions come at a huge expense to the treasury and make it difficult to manage the country's budget deficit. Additionally, the money used to buy grain comes from commercial banks thus imposing an opportunity cost to the growth of other sectors within and outside agriculture.

Government has an adverse impact on commercial financial markets when it borrows money to finance maize-related purchases under FRA and FISP which could be financed by the private sector. IAPRI estimated that the cost to the national treasury for holding 500,000 metric tonnes of maize is approximately US\$26.7 million (excluding the procurement costs and FRA-related costs) using a conservative storage loss of 10% over a period of eight months (for details see Annex 1, Table A1). Scaling back the size of the strategic grain reserve and using a combination of physical and non-physical stocks could save the country considerable financial resources. Consequently, a portion of these resources could be channelled for use in other socially robust programmes as recommended in this paper.

Similarly, the strategy of selling maize to millers at subsidised prices with the expectation that consumers will buy mealie meal at lower prices is ineffective. It is more cost-effective to empower poor consumers through SCTs in order for them to be able to afford food in times of high prices. SCTs are less disruptive than targeting a selected group of well-connected millers or traders. Low income urban consumers do not possess enough money to afford formal sector retail prices for commercially packaged maize meal. Instead, they rely on daily purchases of very small, very expensive repackaged maize meal (known locally as "pamela") purchased from vendors in the market (Mwiinga *et al.*, 2003; Mason *et al.*, 2009). Chisanga (2016) shows that maize meal purchased in repacks costs 27% more than the full 25kg bag. Additionally, it was noted that those with little or no income resort to skipping meals or switching to less preferred diets.

FISP and FRA Reforms and Investments into Alternative Effective Social Protection Policies

There is irrefutable evidence that FISP and FRA have been costly and ineffective in reducing rural poverty, raising productivity, and encouraging agricultural diversification. It is therefore imperative that the government considers

reforming the two programmes, and begins to invest in alternative strategies. Going forward, a smarter subsidy regime which entails scaling back FISP and FRA allows the release of limited treasury resources to alternative social protection policies. These alternatives are far more cost-effective and can deliver on the key objectives of FRA and FISP more efficiently. . The recommendations suggested herein consider the political economy of the current subsidy regime, as well as the government objectives for implementing FISP and FRA which include market development, increased agricultural productivity and poverty reduction. The recommendations are structured around two key areas, namely; a) the reform agenda of FISP and FRA, and b) investment in alternative cost effective social protection policies and programmes.

Reforming the Food Reserve Agency

Discretionary and unpredictable FRA intervention continues to be one of the greatest policy problems plaguing the maize marketing system and food security in Zambia. This is because actual and potential government interventions by FRA generate uncertainties for the private sector, leading to inaction and a perpetual cycle of recurrent need for government intervention. Government, therefore, needs to consider reforms to the Agency in order to achieve food security and poverty reduction at the least possible cost. We make specific recommendations below.

Policy Options/Recommendations to Reform FRA

- A. In order to create space for other effective social protection programmes, the government needs to review the size of the country's strategic grain reserve. We propose that the government reduces the physical stock level of the strategic reserve, as well as its procurement and management. In particular, the physical reserve should be scaled back to 300,000 metric tonnes³ (MT) from the current statutory 500,000MT and save the country approximately US\$44.7 million through buying and storing the extra 200,000MT (see Table A1 for computation of the saving). In addition, the strategic reserve stock should be procured and stored on behalf of the government by the private sector through the commodity exchange and warehouse receipts system. FRA's role would therefore be to ensure compliance by all those involved in the procurement and storage of the grain. Zambia can draw lessons on how to engage the private sector in management of the strategic grain reserves from Ghana and Tanzania (see Mulungu and Chilundika, 2016).
- B. Where a well-managed early warning system incorporating both private and public stakeholders exists, the current 500,000MT is considerably more than the country needs if there's an impending shock. The current

Stocks Monitoring Committee is too ad-hoc and poorly equipped to deal with a long-term food security strategy. It is important to note that, due to improved irrigation capacity in the country, Zambia is now better placed to deal with shocks without the need to hold such huge and expensive stock levels. Commercial farmers can be contracted at short notice to produce maize to fill any anticipated shortfall. Further, consumption patterns today are different from many years ago, with demand for non-maize food products increasing. Finally, improvements in infrastructure over the years imply that it may be cheaper to procure and import grain as compared to physically holding all strategic reserves for at least eight months.

- C. A well-managed strategic grain reserve and price stabilisation policy allowing for clear triggers for maize purchases and releases by FRA needs to be formulated. This would allow for normal seasonal price fluctuations, which is a key ingredient for encouraging private sector investments in the agricultural sector. The failure to have a clearly established price stabilisation policy causes panic and knee-jerk policies with few winners and many losers.

Reforming the Farmer Input Support Programme

Government is commended for piloting the E-FISP and delivering input subsidies through a flexible e-voucher. Despite the teething problems facing the pilot programme, the upscaling of the E-FISP is most welcome given its potential to help kick-start sustainable agricultural diversification, and input market development led by the private sector. This would in the long run reduce the government's discretionary expenditure on agricultural inputs. Nevertheless, as indicated earlier the FISP programme (both the traditional FISP and E-FISP), have become too large, gobbling ZMW 2.58 billion or approximately US\$258 million equivalent to 52.6% of the MoA Budget) and are crowding out other cost-effective public investments which have high potential to increase productivity and sustainably reduce rural poverty in Zambia.

Policy Options/Recommendations to Reform FISP

- A. As a first step, the government needs to acknowledge that FISP has achieved sub-optimal impacts on raising agricultural productivity, agricultural diversification, and reduced rural poverty. This would then allow for the programme to be scaled back over time to prioritise the implementation of other cost-effective social protection alternatives. Therefore, going forward, there is need to cut the overall spending on FISP and cap it at no more than US\$105 million or not more than 20% of the agriculture budget and reach 500,000 smallholder farmers. Based on the 2017 budget, this will save the country up to US\$178 million. A

scaled back FISP delivered via the e-voucher system will improve targeting, diversification, and encourage private sector participation.

- B. The E-FISP should prioritise some investment in soil testing that allows for identifying appropriate fertilisers for each agro-ecological region, and ensure extension officers are adequately trained and provided with enough, and timely, resources to enable them to disseminate this information effectively.
- C. The identified shortcomings of implementing the e-voucher during the pilot phase need to be addressed if the programme is to be successfully rolled out to the whole country (see Annex 2). Specifically, the government will need to:
 - a. Commit to the e-voucher now, so all the actors in the system, from banks to local agriculture dealers have time to prepare properly;
 - b. Begin re-educating farmers now to ensure they understand the voucher and to limit abuse of the system; and,
 - c. Ensure the activation process works effectively and that funds are in place to enable farmers to use the cards in time for the planting season. In particular, there is need to eliminate all human elements from all processes that can be automated.
- D. We can see from examples of where the implementation has worked well, for example in Southern Province that the e-voucher is beginning to change behaviour and has been well received by farmers. Specifically, where the conditions above have been met, the e-voucher has:
 - a. Brought in more private sector participation in agro-input distribution, thereby reducing public expenditure on the delivery of private goods such as fertiliser and seed;
 - b. Ensured timely delivery and access to inputs by smallholder farmers;
 - c. Allowed farmers to buy inputs of their choice and started to develop agricultural diversification; and,
 - d. Reduced leakages through better targeting.

Alternative Cost-Effective Social Protection Policies

Scaling-back FISP and FRA is the right thing to do, but in isolation reducing expenditure on ineffective agriculture subsidies will not deliver the objectives stated in Boxes 2 and 3. Fiscal space created by reductions in expenditure on these programmes should be used to invest in higher return social protection alternatives that can deliver many of the objectives that FISP and FRA were purported to be delivering.

IAPRI proposes three alternative programmes that the government could invest in to deliver on the key objectives of reducing rural poverty, supporting farmers, and creating a sustainable and diverse market for farmers' agricultural

products. So, in contrasting the government's current approach, there is a case to reinvest the saved resources. To alleviate poverty the government could spend more on Social Cash Transfers (SCT), to reduce malnourishment and promote child development the government could pursue an expanded Home-Grown School Feeding Programme (HGSF) as well as provide nutrition support via a Women, Infants and Children Programme (WIC). In the latter two examples, direct support in the form of food would be provided to the households needing it most, whilst indirectly supporting farmers by providing a reliable local market for a diverse range of agricultural products including grains and livestock products.

When delivered alongside reforms of the FISP and FRA this dual support approach will mean continued, better targeted support for farmers alongside improved support for the poorest households in Zambia. So, what should these new programmes look like, and why do we think they will be a success?

Robust Social Cash Transfers Programme

The SCT received a huge boost in the 2017 budget, increasing by 82.8% from ZMW302 million to ZMW552 million (US\$30.2 million to US\$55.2 million). However, even at this level, SCT is still a very small fraction of what is allocated to FISP, about 19.3% in the 2017 budget. Further scaling-up SCT is desirable given that an additional US\$43.5 million for example, would mean that an extra 500,000 beneficiaries would be reached at the current levels of the monthly grant.⁴

Unlike FISP which targets food production among farmers, SCT tackles food-entitlement failures indirectly, by providing cash to both farmers and non-farmers. Hence, unconditional SCT can be used as an effective alternative to FISP because the programme stimulates demand for local goods and services, as most of the cash is spent on locally purchased goods. Further, SCT stimulates enterprises in rural areas enabling the poor to protect themselves and their assets against shocks, act as a support for development of human capital, in addition to enabling them to defend their long-term income-generating potential (Samson 2009). In so doing SCT improves agricultural productivity – due to increased spending on agricultural inputs – in contexts where the primary constraint was working capital rather than land.

Furthermore, the unconditional SCT has been found to have a positive effect on improving consumption and reducing poverty among participating households (Van Ufford et al., 2016). In addition, SCT has been shown to improve the nutritional status, health, and number of school-going children. Another recent evaluation of the Child Grant Programme (CGP) by Handa *et al.*, (2016) showed that the increase in consumption observed among households receiving the SCT was close to the per capita value of the transfer, as is the expectation

among very poor households. Consumption patterns among recipients also showed increased dietary diversity from starchy foods to protein containing foods (Chisanga and Zulu-Mbata, 2016). Additionally, due to SCT funds being spent locally within the communities where they were disbursed, economic activities in the local area were strengthened. SCTs are also linked to improved climate resilience among beneficiaries (Asfaw *et al.* 2016).

Universal Home Grown School Feeding Programme

The school feeding programme implemented by the Government of Zambia in collaboration with the World Food Programme (WFP) is acknowledged as an effective initiative that can simultaneously address the marketing challenge that farmers face, address the high malnutrition rate in school-age going children, and encourage school enrolment and attendance. Therefore, if the FRA is scaled down, funds saved could be channelled into a universal HGSF.⁵ The programme is multi-sectoral incorporating agriculture, education, health and nutrition, local government and finance. Notably, the African Union (AU) has recommended the HGSF as a tool for food security and poverty reduction (Kalaluka, 2016).

Currently, the HGSF Programme covers 38 Districts in nine provinces of Zambia. A total of 1,052,759 beneficiaries are targeted with grains (maize), pulses (beans and cowpeas), and cooking oils for a total of 182 days/. The total cost of procuring the commodities in 2017 is estimated at K87.2 million (US\$8.72 million), translating into about ZMW95 (US\$9.5) per child per year (WFP, 2015; ILO, 2016). There is a total of 3.4 million school-going children in rural areas in Zambia, so doubling the number of children supported by the programme would mean that 61% of the rural schoolgoing children would benefit, which would cost an additional US\$8.72 million each year excluding management costs. The bulk of this money would go directly to the farmers who were providing the food to the schools, thereby promoting local markets and diversification at local level.

The benefits of the current HGSF include the enhancement of smallholder farmers' productive capacity by linking them to a predictable market – in this case the school. By purchasing food requirements locally, the programme promotes participation of local smallholder farmers in value chains through market mechanisms. Farmers are reached through cooperatives, and capacitated with skills in crop aggregation to guarantee quality assurance. Through this approach, schools provide local farmers with a predictable outlet for their products, leading to a stable income, more investments and higher productivity. Due to the diversity of food requirements, the school feeding programme encourages food diversification as markets are provided for diverse foods other than maize alone.

Zambia can learn from one of the most celebrated school feeding programmes in Brazil.⁶ School feeding in Brazil is a duty of the State, and a universal right of students enrolled in public basic education, granted by the Constitution (Sidaner *et al.*, 2013). The Brazilian programme is exemplary in its scope, reaching more than 45 million students, with an allocated budget of some US\$1.9 billion for 2012, which is equivalent to US\$44 per student per annum.

Women, Infants and Children Programme

Savings from FISP and FRA could also be spent on a social protection programme that deals with health, malnutrition, and agricultural marketing problems. Despite increased interventions on nutrition, undernutrition still remains a widespread problem. Zambia suffers from some of the highest levels of undernutrition in the world. The most affected are women in the reproductive age group, and children below the age of five years. Hundreds of thousands of children and women suffer from one or more forms of malnutrition, including low birth weight, wasting, stunting, underweight, and multiple micronutrient deficiencies such as vitamin A, iron, zinc, and iodine. Undernutrition is responsible for 52% of all deaths occurring in children below the age of five in Zambia (UNICEF, 2009; DFID, 2011).

Introducing a programme that deals with malnutrition among pregnant women, and a programme for infants and children would create a market for a variety of agricultural commodities and products, as well as provide nutrition education and supplemental nutritious foods to help keep underprivileged pregnant women, new mothers, infants, and children under 5 healthy and strong. Target families could receive a variety of healthier choices in their food items, including; fresh milk, eggs, fruits and vegetables, whole grains, and infant foods. All these products can be supplied by local farmers.

The WIC programme has been implemented in the United States of America since 1972 and over the years the programme has greatly expanded. The existing body of research shows various impacts of the programme on child health and household food security. For example, studies have shown that the programme improves birth weights and improves women's prenatal care (Bitler and Currie 2004; Hoynes, Page, and Stevens 2011; Kreider, Pepper, and Roy 2014). Hanson and Oliveria (2009), estimated that the farm sector received almost US\$1.3 billion from the sale of commodities that are used in producing the US\$4.6 billion in WIC retail food sales.

Notably, introducing this programme in Zambia would not be to the scale of that in the USA, but would offer significantly cheaper support than current agriculture subsidies. Providing this programme to an estimated 250,000 women and 300,000 children would cost US\$46.2 million if support is at the

same level as the current SCT, ZMW70 (or US\$7) per recipient per month. The bulk of this money would flow directly to farmers producing food for the programme, providing more indirect support to the industry whilst delivering improved nutrition outcomes for Zambian women, infants and for malnourished, impoverished Zambian children.

Opportunities and costs of these proposals

There is clearly a strong economic and social case for reform that is set out in the previous sections. Re-focussing support away from ineffective agricultural subsidies towards cost-effective social protection policies will deliver better social outcomes in Zambia. However, in proposing these alternatives, we must also determine if these proposals are affordable. With the government committed to economic recovery through the Zambia Plus plan, and a potential support package from the IMF, Zambia is likely to face a period of fiscal constraint. Proposals for reforms need to be affordable in addition to delivering improved outcomes for Zambian citizens.

Table 1 sets out the financial opportunities created by reforming the agricultural subsidies and provides some indicative costs for new social protection programmes. This clearly shows that the approach advocated for in this paper is affordable and will help constrain spending, in addition to delivering improved support to those Zambians who need it most.

S/N	Proposal	Saving/ (Cost) (US\$)	Objectives of Programme
1	FRA reform: Scale back strategic reserve stock level to 300,000MT from the current 500,000MT	44.7 million	<ul style="list-style-type: none"> • Reformed FRA to focus on food security, ensuring less market distortion. • Further savings can be made if government procures the reserves via the commodity exchange with maize stored in certified warehouses.
2	Cap total FISP expenditure at no more than US\$100 million and target at least 500,000 smallholder farmers through a flexible e-voucher.	178 million	<ul style="list-style-type: none"> • Reformed E-FISP provides more cost-effective and efficient support to farmers, taking account of local conditions and enabling choice and diversification. • Promotes competitive private sector input provision.

3	Scale-up SCT beneficiaries by an additional 500,000 beneficiaries	(43.5 million)	<ul style="list-style-type: none"> • SCTs focused on poorest and most vulnerable households and target poverty reduction. • SCTs have a positive multiplier effect on the economy as cash creates an effective demand for food and non-food products helping local economies to grow.
4	Support one million more children via the Home Grown School Feeding (HGSF) programme.	(8.7 million)	<ul style="list-style-type: none"> • HGSF will not only ensure that children have access to regular meals, but also create local markets for a diverse range of farming products.
5	Provide nutritious food vouchers to 500,000 women and children	(46.2 million)	<ul style="list-style-type: none"> • WIC provides nutritional support to mothers and infants, reducing malnutrition, and supporting child development. At the same time the programme provides a market for local farmers.
6	Net saving/(Cost)	124.3.8 million+	<ul style="list-style-type: none"> • Savings be invested into key drivers of agricultural growth and other high return programmes

Table 1. Summary of opportunities and costs of proposals

Source: Authors' recommendations and calculations from 2017 Budget

Conclusion

In a liberalised market economy, the private sector is expected to effectively serve the needs of the millions of rural farmers and urban consumers, whilst the government is expected to provide a conducive environment and regulatory framework to benefit all stakeholders. Unfortunately, with a history of government intervention, the private sector in Zambia has often been blamed for failing to be responsive to the smallholder farmers' needs. The perceived failure of the market has led the Government of Zambia into spending colossal amounts of

money on FISP and FRA. However, this paper has presented a case for reforms and consideration of reinvestment of public resources into more cost-effective, and multifaceted social protection programmes which involve the private sector.

Another recommendation of this article is that the government should redirect government funding to key drivers of agricultural growth. This reorientation of spending, away from FRA and FISP should go towards increased investment in public goods including: irrigation development as a means to mitigate drought and improve productivity; crop, soil, and livestock science research and development - to enhance genetic advances and refinements in the adaptation of improved practices and technologies; extension programmes, particularly focusing on effective and appropriate input use, and integrated soil fertility management practices to improve soils and raise crop response to inorganic fertiliser; and rural physical infrastructure development especially feeder roads. In addition, the government needs to improve the timing of budget releases. Effective monitoring systems need to be designed to increase budgeting transparency and accountability aimed at reducing or eliminating delayed budget releases.

Last but not least, the country needs to enact an Agricultural Marketing Act to guide all private and public agricultural marketing activities in Zambia. In the mixed policy environment, the government coexists with the private sector as an unfairly large competitor, and this hinders the development of the agricultural sector. Complete government withdrawal from the market is neither realistic nor desirable. However, the 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. Therefore, an Agricultural Marketing Act will provide guidance on the involvement of the government in the maize market, fertiliser, seed, crops, and livestock markets bringing the most needed policy transparency and predictability that will enhance the market for smallholder farmers.

Endnotes

- 1 Chibombo, Kabwe, Kapiri Mposhi, Mumbwa and Chisamba in Central Province; Ndola District in Copperbelt Province; Chongwe district in Lusaka Province; and Chikankata, Choma, Kalomo, Mazabuka, Monze and Pemba districts in Southern Province
- 2 The difference between the traditional FISP and E-FISP is the delivery mechanism. The traditional FISP involves the government physically delivering the inputs (currently limited to fertiliser and seed) sourced from few suppliers through a tender process. Whilst, the E-FISP involves giving targeted farmers an input voucher that can be redeemed electronically through licensed agro-dealers. Delivery of inputs is the responsibility of private sector dealers.
- 3 Before 2013, the statutory maize strategic reserve was 300,000 MT based on monthly human and industrial demand of 100,000 MT per month for at least three months before imports could arrive in the country. The irrigation capacity of the country then was limited.

- 4 Beneficiary households are entitled to ZMW70 per month which they receive on a bi-monthly basis as a sum of ZMW140. Beneficiary households with persons living with disabilities receive double the amount i.e. ZMW280.
- 5 The Home Grown School Feeding Programme, is a social safety net which uses food as a value transfer to schoolchildren recognizing that school health and nutrition are fundamentals for child development and a significant input into a child's learning
- 6 Established in the 1950s, the PNAE is one of the most important strategies of Brazil's food and nutrition security policy. Its large coverage and innovative design act to strengthen family farming, while promoting access to adequate and healthy diets in all public schools. For more details on the evolution of the PNAE in Brazil, see Otsuki and Arce (2007).

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Appendix

Table A1: Cost to the National Treasury for Holding 500,000 Metric Tonnes by FRA

Description	Unit	Quantity	Price/ Cost per unit ZMW	Total ZMW	Total US\$
1. Cost of new crop purchased July - October 2016					
Value based on purchase price	MT	500,000	1,700	850,000,000	85,000,000
Logistics costs	MT	500,000	200	100,000,000	10,000,000
Estimated 8 months carry costs (Oct '16 to May '17) *	MT	500,000	90	45,000,000	4,500,000
Rebagging costs	MT	500,000	100	37,500,000	3,750,000
Estimated total costs of new crop purchased July-October 2016				1,032,500,000	103,250,000
Translated Cost/MT as at end May 2017				2,065	207
2. Value of 2016 Crop at May 2017 Export Parity Prices*					
Export Value by May 2017 based on Export Parity Price to Harare	MT	0	2,600	0	0
FRA maize sold at cost local market price		500,000	1,700	850,000,000	85,000,000
Less 10% storage losses				85,000,000	8,500,000
Net value of 2016 crop				765,000,000	76,500,000
3. Summary of Costs to Treasury					
Estimated total costs of new crop purchased July-October 2016				1,032,500,000	103,250,000
Gross Cost				1,032,500,000	103,250,000
Net value of 2016 crop				765,000,000	76,500,000
Gross Export Revenue				765,000,000	76,500,000
LOSS				267,500,000	26,750,000

Note: The following assumptions are used in computing the above costs to the Treasury: (a) Exchange rate 1US\$/10ZMW; (b) 2016 FRA Purchasing Price/50kg bag at 85 ZMW; (c) Logistics cost/50kg bag (transportation, loading and offloading) at 10 ZMW; (d) finance cost per month at 40 ZMW/metric tonne; (e) storage losses estimated at 10 percent.

Table A2

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 fertiliser 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.