



OPPORTUNITIES AND CHALLENGES IN ENHANCING AGRICULTURAL DEVELOPMENT IN ZAMBIA

**Advisory Note Prepared For
Ministry of Agriculture
Ministry of Fisheries and Livestock
Ministry of Finance
Ministry of Planning and Development
Ministry of Industry, Trade and Commerce**

October 12, 2016

Introduction

Zambia has just completed the general election and under a new Constitution. Politically this is an opportunity because the new Constitution and the full five year government mandate will promote economic stability. There are some accepted economic realities such as a current tight fiscal space, Climate Change, and a poor rural sector. Addressing these challenges requires that the most effective tools and strategies be employed. Business as usual is not an option anymore hence, the government needs to implement major changes which initially, are likely to be less popular but will within five years 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 to reduce poverty and become a major foreign exchange earner. This Advisory Note provides the government with a candid situational analysis and policy options to address some key challenges hindering Zambia's progress in becoming a regional food basket. There are ample opportunities that have the potential of awakening this sleeping giant sector.

The revised Sixth National Development Plan, aligned to the PF Manifesto, recognizes that agricultural development is critical for achieving inclusive growth and poverty reduction in Zambia. Both documents clearly indicate that to attain more inclusive agricultural growth there is urgent need to address the "unbalanced agriculture policies which have favored maize production and disadvantaged the production of other crops". Despite this recognition, very little progress has been made to diversify agricultural spending away from its current focus on maize, a low value crop. The consequences of the current policy approaches, where the majority of the agricultural budget is used to subsidize inputs for maize production and maize markets, are clear. The paradox of growth without poverty reduction suggests that income inequality in rural areas is growing rapidly, while limited progress is being made to improve the productivity of small-scale farms.

Currently, agricultural policies in Zambia do not achieve these objectives. Instead, they constrain growth by under-funding 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 and institutions that foster the development of effective markets, and complementary services such as agricultural extension and credit. Additionally, the maize centric policies are undermining Zambia's ability to become a stronger player in the regional agricultural sector, which further inhibits inclusive growth.

CHALLENGES AND RECOMMENDED POLICY OPTIONS

1. How to deal with potential rising mealie meal prices?

Policy makers are always confronted by the classic “food price dilemma.” On the one hand, they are under pressure to ensure that maize producers received a higher price, on the other hand, they are under pressure to keep mealie-meal prices at a tolerable level for consumers. Unfortunately, the government has not been very successful in striking a balance between these two competing objectives, mainly because the solutions tend to put severe strain on the Treasury, as well as stifle private sector investment into the agricultural sector due to unpredictable policies.

Maize grain prices have come down since the coming of the new harvest in May 2016. Nevertheless, high price volatility is expected to continue throughout the 2016/17 marketing season because Zambia is the only country in the sub-region with an exportable surplus. Zambia’s maize is much cheaper compared to other countries in the region especially Zimbabwe, Malawi, and Democratic Republic of Congo (DRC). As the 2016/17 marketing season progresses, it is realistic to project that maize grain and mealie meal prices in the country will rise as supplies on the market dwindle. This does not mean the country’s food security will be threatened or that people should panic: this trend happens every year and moreover Zambia has sufficient stocks to easily meet self-sufficiency requirements. The question is; how much should prices be allowed to go up without causing panic to stakeholders? The solution lies in properly harnessing the many market-based solutions discussed in this note, and not the costly government interventions through consumer subsidies to millers or export restrictions.

Studies conducted by IAPRI have shown that passing consumer mealie meal subsidies through commercial millers is not an effective way to lower prices to the consumers. This is because it is difficult to enforce the price agreements in a free market, especially if there are opportunities to make more money in neighboring countries. For example, it is difficult for the government to curtail the movement of subsidized mealie meal or maize grain to border areas where prices are much higher due to the demand from consumers in neighboring countries. In other words, Zambia would be helping to subsidize consumers in neighboring countries.

Further, the Rural Agricultural Livelihood Survey (RALS) 2015 indicates that only 4% of the rural households consume commercially milled mealie meal; therefore the availability of grain on local markets is very critical. This means that the government and stakeholders need to urgently seek less costly solutions - other than consumer subsidies through cheaper maize to millers - to effectively help poor urban and rural consumers. Additionally, heavily restricting exports will only lead to worsening the incidences of rampant informal/illegal trade resulting in loss of government revenue, and an increase in the possibility of implementing further drastic measures to constrain formal exports. This is due to the fact that the huge price differentials between Zambia and its deficit neighbours has created opportunities for some to take the risk and make huge profits.

Policy Options/Recommendations

Immediate Actions

1. Government should release funds and pay for the maize they have purchased from smallholder farmers through FRA. This will provide the farmers who delivered their maize to FRA with the necessary resources to prepare for the next season. Further delays may affect 2016/17 agricultural season.
2. The current situation is that most of the maize stocks not held by farmers are in the hands of the FRA, private Traders and/or Millers, with very little supply to the informal markets in the compounds. This limits consumer options. There is an urgent need to increase direct access of maize grain to consumers. The option of disposing grain to the informal markets would relieve some of the food price pressure on low-income consumers, who normally buy more expensive repackaged mealie meal 'pamelas'. This will be one of the more effective ways of reducing mealie meal prices to low income consumers by providing them with cheaper alternative meal options.
3. Communities should be sensitized to the following reality, given the high demand in the country and region, mealie meal prices may increase in the short-run but that government will put in place more cost effective alternative programs to help cushion the impact on the poor consumers. There exist programmes that can be implemented at a fraction of the current consumer subsidy programme. The following programs are proposed:
 - Consider increasing the number of recipients under the social cash transfer system. This should be deliberately promoted as a programme to cushion poor and vulnerable households from any rising maize meal prices. This will help deal with the political sensitiveness of maize grain and maize meal prices. This programme can be run at a fraction of the current subsidy programme.
 - Increase quantities to community sales to increase direct access of maize grain to consumers. FRA has experience with implementing this programme and the effects on cushioning consumers from rising mealie meal prices is reported to be large.
4. Millers should be encouraged to buy their maize grain stocks from the traders at market prices rather than expect subsidized grain from FRA. FRA should sell maize at market prices. This will significantly reduce budgetary pressures on the Treasury, eliminate market distortions and rent seeking behavior, as well as attract more private sector investments in the agricultural sector. This strategy will allow prices to fluctuate based on production levels and will provide farmers with incentives to produce more, whilst simultaneously enabling traders and millers to invest more in storage, and the government to use the country's limited resources to invest in the key drivers of agricultural growth such as; extension, research and development, rural infrastructure, and irrigation.

Medium and long-term options (2-5 years)

1. Maize production from large scale farmers declined from more than 400,000 metric tonnes (MT) a few years ago to 163,000 MT in the 2015/2016 season. Zambia urgently needs to harness large-scale commercial farmers' potential to produce early maize for export under irrigation. Given the high cost of producing early maize, this will require export off-takers and policy guarantees from government on exports. To kick start such a project, it could be run as a pilot with institutions such as the WFP as a potential offtake.

Without consistent policy, large-scale farmers will continue to shun maize production. In this regard, Government and other stakeholders should keep a close eye on the effects of the La Niña phenomenon. If there are adverse effects, the country should trigger the production of winter maize timeously. This will allow Zambia to effectively exploit its production potential.

2. To unlock the local supply, the country has to embrace a well-managed formal export trade regime. This will help the country to increase export earnings and reduce levels of maize smuggling/informal maize exports. The early maize programme should be up-scaled to ensure that Zambia secures its export market. In 2015, the country earned over 170 million United States Dollars from maize grain exports alone. The country has the potential to earn significantly more.
3. A well-managed price stabilisation policy allowing for clear triggers for maize purchases and releases by FRA needs to be formulated. This would allow normal seasonal price fluctuations to take place, a key ingredient for encouraging private sector investments into the agricultural sector. For example, an agreed price floor and ceiling could be established, it would then act as a trigger for maize purchases or releases from the strategic reserve.
4. Maize grain and maize meal should always be sold at market price to avoid creating distortions that discourage investments into the agricultural sector and instead create huge government budget deficits. Poor and vulnerable consumers can be helped through less expensive market based government support programmes

2. FRA's inability meet its 2016/17 maize purchases target

Given the current market conditions, private traders have not been deterred by the announced FRA buying price of K85 per 50kg bag (approximately US\$170/ tonne). As of July 2016, private traders were buying at an average price of K95 -K112 per 50kg (approximately \$190-\$224/tonne) and paying on the spot. Private maize traders are expected to remain active this season after entering the market much earlier, ahead of the FRA. As of 11 October, 2016 the FRA had only managed to purchase about 276,000 metric tonnes, unlike other years where they would have fulfilled their target by this time. This means private traders have been competing heavily with FRA. Furthermore, there are reports that farmers are holding their maize longer to be able to cash in later when the maize prices peak. This situation has to be encouraged as it promotes more investments into the sector in the coming seasons.

On the other hand Millers have not been very active in the market. Based on past experiences, millers were anticipating that the government would supply their requirements out of FRA's 1,000,000MT anticipated purchase target. However, this strategy is likely to be less effective this season because of FRA's slow pace to meet its 2016/17 maize purchases target. There should not be any reason to panic as long as the recommendations made in this note are implemented. Instead, Millers should be encouraged to buy their requirements at market prices as the subsidy is very heavy to the Treasury, and the impact on mealie meal prices is minimal.

Stocks verification done by the Stocks Technical Committee and funded by IAPRI revealed that the country has more than 1.2 million metric tonnes excluding what the small scale farmers might be holding. The implication of this is that the export ban may result in the country having a lot of maize going into the next season. This will have negative effects on maize prices and reduce incentive for farmers to produce maize in the future. Also, in the short-term smuggling of maize and rent seeking behavior is likely to increase as riskier individuals try to cash in on the lucrative export market.

Policy Options/Recommendations

Immediate actions

1. Government should release funds to FRA to enable them to pay farmers on time. This will increase the chances of FRA meeting its SGR target but more importantly, give the farmers who delivered to the Agency resources to start preparing for the next season.
2. . Zambia needs to urgently harness large-scale commercial farmers' potential to produce early maize for export under irrigation.

Medium and long-term options (2-5 years)

1. To allay the concerns of the private sector about FRA's involvement into the market, the government should review the FRA mandate. In particular, the Government should direct its investments towards other key drivers of agricultural growth that would benefit many more people and help farmers diversify away from maize only.
2. With ZAMACE coming on board, it is important that FRA considers buying the strategic reserves through the commodity exchange when fully operational. This will result in a reduction in costs of maintaining the strategic reserve as logistics to procure grain such as handling, transportation, storage costs etc. will be borne by private sector rather than FRA.

3. How can the country take advantage of the current regional maize demand without jeopardizing food security?

Zambia is the only country in the region with surplus maize, hence demand for this maize very high. Deliberate efforts to intensify supply to deficit neighbours such as Zimbabwe, Malawi, and DRC need to be made without affecting local food security. This will enable Zambia to maintain and raise its standing as a reliable supplier in the region, as is the case with the seed sector.

Zambia has a surplus but not enough to meet all the regional requirements. Regional maize prices are at least 40-50% higher than the Zambian maize prices. The situation will likely worsen as we draw near to the hunger season (November through March). **This does not mean Zambia has to shut its borders.** Zambia has an opportunity to export maize to the deficit countries and earn much needed foreign currency but this is not possible if the borders remain closed. For example, in 2015, Zambia's agricultural exports were at US\$670,716,000 and maize & maize products accounted for 30% (US\$210,098,000) of the export revenue from agricultural exports. Unfortunately, in 2016 the country wasted the opportunity of earning the much needed foreign currency due to politically triggered export restrictions. The new government needs to seriously reconsider this policy and look to other more progressive options in order for the country to become the bread basket of the region.

Discretionary and unpredictable government intervention is one of the greatest policy problems plaguing the maize marketing system and food security in Zambia. This is because actual and potential government interventions generate private sector uncertainties and inaction, leading to the additional need for government intervention. Therefore, the government should provide a stable and predictable policy framework to hasten Zambia's potential of becoming a regional food basket. This should be done through the enactment of the Agricultural Marketing Bill, setting up of the Agricultural Marketing Council, and adhering to the legislation provided therein. This bill will help promote effective coordination between the private and public sector through greater consultation and transparency with regard to changes in FRA purchase and sale prices, import and export decisions, and triggers for release of stocks. Once this legislation is in place, crop marketing will be based on a transparent and predictable set of rules and regulations, a situation that is likely to bring in more private investments and participation in the sector.

In the current mixed policy environment, the government co-exists 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, 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.

Policy Options/Recommendations

Immediate actions

1. To unlock the local maize supply, **the country has to reopen the borders**. Zambia has enough maize as verified by the Stocks Committee Technical meeting that visited the provinces. Instead of a well-publicised export ban, the country should embrace a well-managed formal export trade regime. This will help the country to increase export earnings and reduce levels of maize smuggling/informal maize exports. Zambia should continue in its quest to become the regional food basket. Formal exports of maize should be encouraged and continue as the country prepares for another season.
2. The early maize programme should be scaled up to ensure that Zambia secures its export market. In 2015, the country earned over 170 million United State Dollars from **maize grain** exports alone. The country has the potential to earn significantly more.

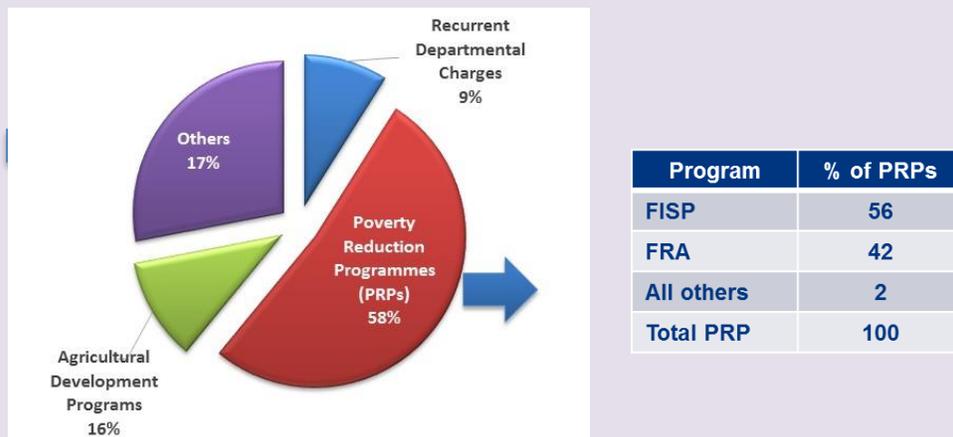
Medium and long-term options (2-5 years)

1. There is an urgent need to resume the process of the **enactment of the Agricultural Marketing Act**. The Act will provide guidance on the involvement of government in the maize market, fertilizer, seed, crops and livestock markets, bringing the most needed policy transparency and predictability that will enhance the market for smallholder farmers. The Act will help improve the policy consistencies in maize marketing and other agricultural products
2. It is important that FRA reviews the level of the annual strategic grain reserve. The current 500,000 MT strategic reserve should take into account the following factors:
 - a) the improved irrigation capacity in the country -- commercial farmers at short notice can be contracted to produce maize to fill any anticipated shortfall;
 - b) despite rising population, consumption patterns today are different from many years ago -- demand for non-maize food products is increasing;
 - c) the infrastructure to procure and import grain has improved over the years; and
 - d) There are cheaper alternatives compared to physically holding all strategic reserves for at least eight months.
3. A well-managed price stabilization policy allowing for clear triggers for maize purchases and releases by FRA needs to be formulated. This would allow normal seasonal price fluctuations to take place, a key ingredient for encouraging private sector investments into the agricultural sector

4. How can GRZ invest the limited budget resources in the agricultural sector?

The distribution of the agricultural budget in the recent past has not placed enough emphasis on broad-based public investments. Ninety eight percent (98%) of the budget allocated for poverty reduction programmes in the agriculture budget is being spent on the FISP and FRA. This has not proved effective at boosting productivity or reducing rural poverty (Figure 1).

Figure 1: 2016 Budget Allocation



Though politically popular, as the experience in Zambia and other countries in the region demonstrates, these subsidy programs are typically less effective at stimulating agricultural growth in comparison to investments in research, extension, roads and other public goods. This is because subsidies often displace private spending that would otherwise occur, and are prone to diversion and manipulation. Heavy spending on FISP and FRA has left few resources to invest in these well recognized drivers of agricultural growth and stifled diversification as the country policies are maize-centric. Given that most farmers are land constrained (cultivating on average 2 hectares or less), policies that promote continuous cultivation of a low value crop such as maize will be less likely to solve the poverty problem facing most Zambian smallholders.

The other major problem is the continued delayed budget releases to the Ministries of Agriculture, Fisheries and Livestock. For example, extension staff regularly receive their salaries but field operational funds (recurrent expenditure) are released late affecting the delivery of extension services. In addition, the delayed releases do not only affect operations, but affect the performance and/or implementation of other agricultural programs.

Policy Options/Recommendations

Immediate actions

1. **Rebalance government funding to key drivers of agricultural growth.** Reorientation of spending, away from FRA and FISP towards increased investment in public goods including:
 - a. irrigation development as a means to mitigate drought and improve productivity;
 - b. crop, soil, and livestock science research and development to enhance genetic advances and refinements in the adaptation of improved practices and technologies;
 - c. extension programs, particularly focusing on effective and appropriate input use, and integrated soil fertility management practices to improve soils and raise crops' response to inorganic fertilizer delivered; and
 - d. Physical infrastructure development.
2. **Improve timing of budget releases.** The government needs to put in place effective monitoring systems designed to increase budgeting transparency and accountability aimed at reducing or eliminating delayed budget releases.

Medium and long-term options (2-5 years)

1. In 2017/18 agricultural season, the Government should consider implementing the e-voucher throughout the country. The e-voucher has the potential to reduce the current high costs of delivering fertilizer to farmers, as well as promoting agricultural diversification.

5. FRA's Role In Maize Marketing?

The FRA has become one of the major drains on financial resources for the National Treasury with very limited impacts on poverty reduction and productivity. This is because government expenditure through FRA has been benefiting larger and relatively well-off households, hence having limited impact on rural poverty reduction. Furthermore, continued bumper harvests have seen FRA expanding its role beyond buying strategic reserves.

FRA interventions have been discretionary and unpredictable, creating one of the greatest policy problems plaguing the maize marketing system and food security in Zambia. This is due to the fact that actual and potential government interventions by the FRA, generate private sector uncertainties and inaction leading to a cycle of recurrent need for government intervention. Buying beyond the prescribed strategic grain reserves target (currently 500,000 metric tonnes) has resulted in farmers getting paid late and making it difficult for the private sector to plan and operate efficiently. Further, FRA offloading maize on the market at a reduced or subsidized price has continued to hurt farmers who produce early maize, grain traders, and all millers who do not have access to price-discounted FRA maize. This comes at a very huge expense to the Treasury, and causes unnecessary headaches for policy makers who are concerned about the recurrent country's budget deficit. IAPRI estimates that the cost to the National Treasury for holding 500,000 metric tonnes of maize is approximately US\$26.7 million using a conservative storage loss of 10% over a period of 8 months (Table 1).

Policy Options/Recommendations

Medium and long-term options (2-5 years)

1. FRA's role should be limited to purchasing strategic reserves, and should stick to prescribed quantities and areas of purchase. Any attempt to deviate from this role is usually accompanied by undesirable effects on farmers and private sector participation.
2. FRA should purchase strategic reserves at market prices. FRA should seriously consider buying through the recently enhanced ZAMACE. This innovative approach will lead to an efficient market that is not distorted by significant government presence and intervention in the market.
3. The MoA should work with stakeholders to resume the stalled process of enacting the Agricultural Marketing Act. The Act will provide guidance on the involvement of government in the maize market, fertilizer, seed, crops and livestock markets, bringing the most needed policy transparency and predictability that will enhance the market for smallholder farmers. We recognize that recommending 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.
4. 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.

Table 1: The Cost to the National Treasury of Holding 500,000 Metric Tonnes of Maize 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		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

Source: Authors calculations

Note: The following assumption ate 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 10ZMW; d) finance cost per month at 40ZMW/metric tonne; e) storage losses estimated at 10%.

4. How to Effectively Reform the FISP to Increase Agricultural Productivity and Private Sector Input Distribution Network?

Since 2002, Zambia has been spending roughly 40 percent of the agricultural sector budget on the FISP, a subsidy programme mainly supporting the production of maize. The aim of this subsidy program is to increase agricultural productivity, rural incomes, and national food security, while at the same time aiding in the development of private sector input markets. However, the evidence suggests that it has not worked. While it cannot be disputed that during the FISP period, the nation has experienced tremendous increases in maize production (mainly through area expansion as a result of above market FRA prices), this has been achieved at a huge cost to the Treasury while the impact on maize yields, input market development, and poverty has been minimal.

Under the traditional FISP, the private sector has remained constrained in providing input and output marketing services. As households develop a dependency syndrome on fertilizer subsidies, it crowds out commercial fertilizer purchases and affects investments from the private sector. In terms of agricultural productivity, the traditional FISP fails to recognize the spatial variability of soil fertility and climatic conditions in the country, and as a result uses the blanket fertilizer recommendation of one-size fit all as the basis for determining the package size, disregarding the comparative advantage of different areas. To that effect, we have seen the government continuing to invest heavily in Compound D and Urea fertilizer through the revival of Nitrogen Chemicals. Unfortunately, these fertilizers are not suitable to large parts of the country where soils are acidic.

Zambia is now in the process of reforming the Farmer Input Support Programme (FISP) to implement the subsidy program through a flexible electronic voucher (e-voucher). After years of lobbying by various stakeholders including IAPRI for the government to reform the FISP subsidy program, MoA launched the e-voucher program as a pilot in thirteen selected districts during the 2015/2016 agricultural season with an initial target of 241,000 smallholder farmers. MoA is already working on the modalities of expanding the pilot to 39 districts during the 2016/17 farming season. From this expansion, it is expected that the program will be rolled out to the rest of the country.

Preliminary findings show that the e-voucher system implementation has crowded in more private sector participation in inputs distribution to rural farmers in the initial 13 pilot districts. Agro-dealers are now 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. About 85% of the farming households redeemed their vouchers for fertilizer and maize seed. The remaining 15% purchased other farm inputs. This is likely to increase during the second phase of the pilot, hence unlocking the potential to for agricultural diversification in the country.

Despite these successes, the e-voucher pilot was faced with challenges that threatened the successful implementation of the program. These included the following:

- a. delayed submission of beneficiaries lists to the MoA Programme Coordinating Office resulted in delayed delivery and activation of e-cards;
- b. rising fertilizer prices due to the depreciation of the kwacha that nearly made the e-voucher less attractive to the traditional FISP. As a result, government had to top-up the value of the voucher from 1,400 to 2,100 kwacha, inclusive of a farmer contribution of 400 kwacha;

- c. 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 resolved the problem;
- d. reported selective activation of e-cards, a problem that led to delayed access of inputs by some farmers;
- e. reported incidences of farmers surrendering their non-activated cards to agro-dealers to access inputs in advance. This could have led to some farmers losing out as some agro-dealers might have redeemed the cards in the absence of the farmers;
- f. 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
- g. The current e-voucher redemption system does not have the capability of identifying the type of inputs redeemed by farmers. This makes it impossible to map the demand for various inputs.

Policy Options/Recommendations

Immediate actions

1. Upscaling the implementation of a flexible e-voucher: The government should be commended for allocating resources in the 2016 budget towards the implementation of an e-voucher. We encourage the government to extend the voucher to the whole country so that it can be used to purchase inputs other than fertilizer which are vital to boosting broad based productivity. These include seeds for other crops, veterinary medicines, blended fertilizers, lime, herbicides, tractor services, farming equipment, chaka hoes, rippers etc.
2. Based on the baseline survey results, nearly 50% of the e-voucher beneficiary farmers reported having redeemed their inputs very late due to delayed issuance of e-cards by the government. Given that one of the main objectives of the e-voucher is to ensure timely delivery of inputs, it is paramount that the issue of selection of beneficiaries is dealt with. In addition, the delivery of e-cards to farmers should be done 2-3 months before onset of the rains (at least by October).

Medium and long-term options (2-5 years)

1. Prioritize some investment in identifying appropriate fertilizers 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.
2. Government should channel more resources to social cash transfers to assist vulnerable households. Cash transfers have proven to be effective in assisting vulnerable households as well as helping stimulate grassroots economic activity

STRATEGIC DIVERSIFICATION

It is widely accepted that, if Zambia is to witness sustainable agricultural growth and poverty reduction it will need to diversify agricultural output as per the PF Manifesto. This entails investing in other sub-sectors such as horticulture, livestock, and fisheries.

1. Horticulture Production and Market Development

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 been neglected by government policy which continues to prioritize the maize sector which has very low potential to solve poverty issues in the country. Only a paltry 20 percent of the smallholder farmers participate in horticultural markets in Zambia despite its high poverty reduction potential.

The poverty reduction potential for fruits and vegetables relative to maize is clear. A relatively market oriented smallholder in Zambia might sell 1 to 2 metric tonnes of maize to FRA at a price ranging from K65-K70 per 50 kg. Total gross revenue of this farmer will range from K1,300 to K2,800 (approx. US\$210 to US\$453), nearly all of it occurring immediately after harvest. The average smallholder 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 to K30,000 (approx. US\$3,236 to US\$4,854) -- 10- to 20 times higher than typical maize sales values.

However, in trying to exploit these opportunities, smallholder farmers confront a series of often intractable constraints including; high cost of production and marketing; the intensive knowledge requirement for horticulture production (which they normally do not have); fresh produce's perishability and the lack of any cold chain; and extreme variability in prices. The horticulture subsector 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.

Policy Options/Recommendations

Medium and long-term options (2-5 years)

1. Government needs to make a deliberate effort to support smallholder horticultural production and marketing through, as a first step and matter of priority, facilitation of the development of strategically located wholesale markets with appropriate hard and soft market infrastructure through private-public partnerships starting with Lusaka and the Copperbelt.
2. The horticultural wholesale section of Soweto Market which is playing a very critical role in the supply chains but faced with critical infrastructural and management problems needs to be developed at a new site with adequate allowance for heavy traffic flow, appropriate infrastructure development (basic ground paving with drainage outlets, designated in and outflows for vehicular traffic, loading and off-loading bays, storage facilities, etc. as well as an appropriate management system including the participation of only trained and certified brokers. Lessons from other countries such as South Africa and to some extent Mozambique would help in this regard.

Once this is done for Lusaka, the same can be replicated on the Copperbelt and other parts of the country. There is need to recognize the importance of improving horticultural wholesale markets as a driver to increased smallholder supply chain participation and urban supply of high quality fresh produce at competitive prices.

2. Livestock Sector Development

The national total meat demand is projected to grow from 120 thousand tons (as of 2012) to over 600 thousand tons in the year 2027, and national milk consumption from 260 million tons to over 1200 million tons over the same period. However, with the rapidly increasing demand, there will still be a deficit of about 320 thousand tons of meat and 760 million liters of milk (MAL *et al.*, 2011). Meeting this rapidly increasing demand for animal-sourced foods is a big opportunity for smallholders to earn a better living. But both the traditional production and marketing systems need to catch up with the rapidly changing environment.

Despite the importance of livestock rearing to smallholders' livelihoods in Zambia, the majority of smallholder production and marketing remains confined to the "traditional" sector. Average ownership and marketing of livestock per household is also low. This is because of:

- a) limited disease and bio-safety management at all stages of the value chain;
- b) low input husbandry techniques, including limited adoption of animal confinement, leading to high levels of animal mortality and low productivity;
- c) Low capacity to comply with sanitary and phytosanitary regulations, leading to limited market opportunities, and;
- d) Poorly coordinated marketing systems that link farmers to urban consumer markets.

Therefore, the ability of smallholder producers to benefit from the growing demand for animal products in Zambia depends on strengthening the performance of the production and marketing system utilized by smallholder animal producers, and integrating the traditional sector with the commercial sector.

Policy Options/Recommendations

Medium and long-term options (2-5 years)

1. The government should move to finalize the livestock policy to ensure a stable and predictable policy framework is in place for the livestock sector.
2. Direct more resources to disease control through the construction of new, and the rehabilitation of existing community dip tanks, and enactment of a deliberate policy to encourage farmers to dip their animals. This could be done through livestock vaccination campaigns for diseases of national importance.
3. Direct more resources into effective breeding programs and rehabilitate existing breeding centers.
4. Strengthen the veterinary extension service delivery through deploying of veterinary assistants at camp level. The livestock extension should then focus on improved animal husbandry, and promotion of supplementary feeding for livestock especially during lean periods
5. Promote smallholder supplementary livestock feeding and commercialization of the same.
6. Support livestock research that will develop appropriate livestock production technologies
7. Investment in livestock trading markets in production areas

3. Fisheries Sector Development

The Central Statistics Office (CSO) projects a population of 20.5 million people by the year 2025 requiring fish production of 247, 000 tons to meet the local demand. The fish deficit is estimated to escalate from the current 57,000 metric tonnes to over 171, 000 tons [excluding exports and imports] of fish by the year 2025. Given the current fish production, more effort needs to be directed into the fisheries sector if the supply/demand gap is to be bridged. Notably, the production from capture fisheries is not likely to increase due to over fishing.

The fisheries sector is facing numerous challenges that must be addressed if the sector is to benefit the people and the economy of Zambia. Through consultation with the fisheries sector experts, some of the major challenges the sector faces include; conflicting legal framework; low production and productivity; lack of fish storage facilities; weak institutional arrangements and regulatory frameworks; and weak enforcement of fisheries regulations.

Policy Options/Recommendations

Medium and long-term options (2-5 years)

1. Formulation of the Fisheries Sector Policy: There is an urgent need to formulate a policy to guide the development of aquaculture and fisheries in Zambia.
2. Institutional rearrangement: The current institutional set up and funding structure does not suit aquaculture development. There is need to split the Fisheries Department into two, to enable one department to focus on Capture Fisheries and the other on Aquaculture.
3. Harmonization of the relevant legal framework: There must be a deliberate effort to harmonize the various Acts of Parliament that relate to the fisheries sector to avoid conflicts.
4. Operationalization of the Aquaculture and Fisheries Fund: The fund will increase fish production from aquaculture, especially by small and medium scale players hence contributing to a reduction in high rural poverty levels.