



Lessons Learnt from the Implementation of the E-voucher Pilot

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Key Points

1. Electronic voucher system (E-voucher) 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.
2. 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.
3. 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 second phase of pilot, hence unlocking the potential to for agricultural diversification in the country.
4. Compared to the traditional FISP, about 14.5% (K71,756,245) of the implementation costs were saved under the e-voucher system in the 13 pilot districts. If we consider savings from undistributed and unloaded cards, total savings increase to K135,831,199 representing 27.4%.
5. 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 Ministry of Agriculture (MoA) Programme Coordinating Office resulting 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 Farmer Input Support Programme (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;
 - 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 solved 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; and
 - 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.
6. 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.

INTRODUCTION: Zambia is 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 the Indaba Agricultural Policy Research Institute (IAPRI) for the

government to reform the FISP subsidy program, the Ministry of Agriculture (MoA) finally 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.¹

¹ Chibombo, Kabwe, Kapiri Mposhi, Mumbwa and Chisamba in Central Province; Ndola District on the

Copperbelt Province; Chongwe district in Lusaka Province; and Chikankata, Choma, Kalomo,

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.

Challenges with the Traditional/Conventional FISP: The e-voucher was recommended in order to address major challenges with the traditional FISP where government distributes the physical inputs to selected recipients (currently 4 by 50kg bags of fertilizer and 10kg of maize seed). Other seeds (rice–10kg, sorghum–5kg, groundnuts–20kg, orange maize–10kg, soya beans–50kg, cotton–10kg, beans–30kg, and sunflower–4kg) were recently added to the package to try to address crop diversification issues.

It cannot be disputed that maize production has increased tremendously during the fertilizer subsidy period (mainly through area expansion), but this has been achieved at a huge cost to the treasury while the impact on crop yields, input, market development and poverty has remained dismal. Several studies have shown that subsidized fertilizer is disproportionately allocated to wealthier households (Jayne et al. 2011; Chibwana, Fisher, and Shively 2011; Ricker-Gilbert Jayne, and Chirwa 2011), crowds out private sector (ACF 2009; World Bank 2010), and has not resulted into economically viable increases in maize production (Mason and Tembo 2015).

Under the traditional FISP, the private sector has remained constrained in providing input and output marketing services (ACF 2009; World Bank 2010). As households develop a dependence 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, which is not suitable to large parts of the country where soils are acidic.

The other challenge has been the difficult to quantify is that subsidized fertilizer have been characterized by leakages through diversion and resale before reaching the intended beneficiaries (Mason and Tembo 2015).

The e-voucher was recommended to mitigate some of these challenges and was specifically, intended to:

- i. Crowd in more private sector participation in agro-input distribution, thereby reducing public expenditure on the delivery of private goods such as fertilizer and seed;
- ii. Ensure timely delivery and access to inputs by smallholder farmers;
- iii. Allow farmers to choose inputs of their choice thereby promoting agricultural diversification; and
- iv. Reduce leakages and increase the number of beneficiaries.

It is against this backdrop that, this brief summarizes the lessons learnt from the implementation of the e-voucher pilot in 13 districts and how they can benefit the implementation of the expanded pilot in the second phase.

DATA AND METHODS: IAPRI in collaboration with MoA monitored the implementation of the e-voucher pilot program. The monitoring team raised issues needing MoA's immediate attention throughout the implementation process.

Since the launch of the e-voucher pilot, the team from IAPRI and MoA undertook several monitoring visits in all pilot districts. These monitoring activities involved interviews and discussions with officers from MoA including the Agricultural Coordinators at Provincial and District levels (PACOs and DACOs), District Marketing and Development Officers, Agriculture Assistants, farmers, and approved agro-dealers. In addition, Focus Group Discussions with smallholder farmers were conducted during the collection of e-voucher baseline data in May, 2016. Interviews with farmers and cooperatives were conducted to get an overall view of the farmer experiences with the e-voucher system compared to the traditional FISP. This brief uses the monitoring reports and baseline survey analysis to summarize lessons

learnt during the first phase of the e-voucher pilot to help improve the implementation of the expanded second phase pilot.

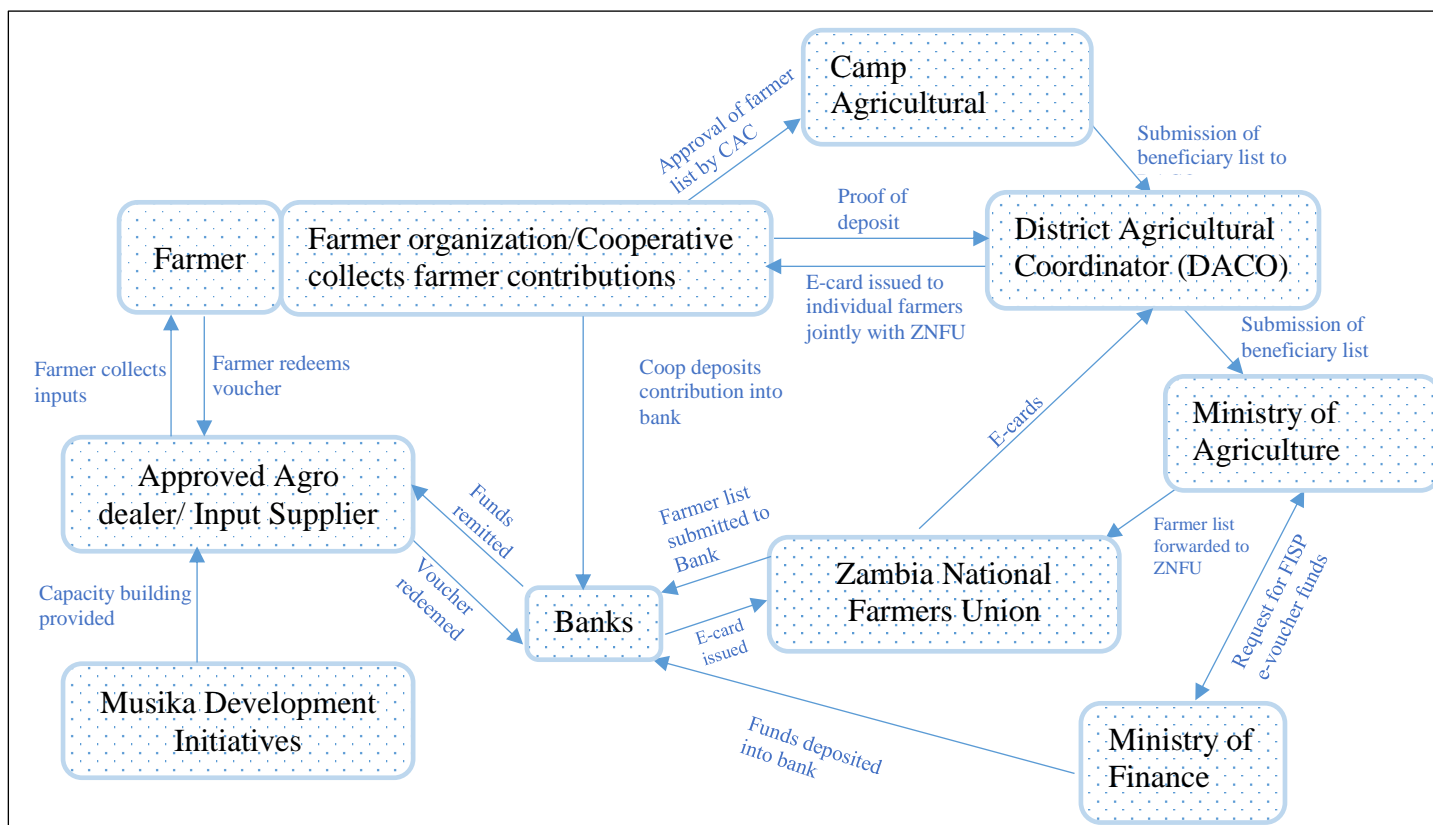
The E-voucher Pilot Program: An e-voucher uses a mobile delivery and tracking system to distribute subsidized agricultural inputs through agro-dealers/input suppliers to targeted farmers. Each beneficiary farmer’s e-card is linked to their specific name and National Registration Card (NRC) number. On confirmation of the transaction, an e-voucher allows instant electronic payment to agro-dealers/input suppliers’ online accounts for the inputs redeemed by the farmer (Sitko et al. 2012).

The FISP e-voucher system is implemented by MoA through the Programme Coordinating Office (PCO). The PCO works both through the provincial (PACO) and district structures (DACO) including Camp Agricultural Committees. Among the functions of the PCO was to create awareness of the e-voucher system to all stakeholders. While DACO’s office, through the agricultural extension officers, was responsible for awareness of farmers about the

operation of the e-voucher system, Musika was responsible in creation of awareness and training of agro-dealers/input suppliers. MoA produced an e-voucher implementation manual that contained detailed information about the program and specific roles for each implementing agent. MoA implemented the 2015/2016 e-voucher pilot in collaboration with Zambia National Farmers Union (ZNFU). Using their already existing e-VISA card platform, ZNFU facilitated the printing, distribution and activation process of e-cards through the banks. Agro-dealers and input suppliers who stocked and supplied agricultural, livestock/veterinary and fisheries inputs to farmers. The participating agro-dealers and input suppliers were selected through a consultative process in the pilot districts using an agreed upon criteria. These agro-dealers/ input suppliers were required to acquire Point of Sale machines through their own arrangements with the banks (MAL 2015).

The other implementing partners included Food and Agriculture Organization (FAO), Swedish International Development Agency (Sida),

Schematic Diagram of the E-voucher Model



Source: Adapted from the 2015/2016 e-voucher implementation manual with author's modifications.

European Union (EU) and Banks (Zambia National Commercial Bank, Barclays Bank, United Bank of Africa).

FINDINGS:

Private Sector Participation in Inputs Distribution to Rural Farmers: The e-voucher pilot crowded in more private sector participation in input distribution to rural farmers. During the 2015/2016 agricultural season, about 230 new agro-dealers came on board as a result of the e-voucher. Registered agro-dealers participating in the program were required to stock their shops with a variety of inputs in addition to fertilizer and maize seed.

In some cases, some agro-dealers transported inputs to various agricultural camps in order to provide inputs closer to the farmers. This helped to cut down farmers' transport costs.

Inputs Stocked by an Agro-dealer in Chibombo



Photograph by Auckland Kuteya.

Timely Delivery of Inputs: Based on the baseline survey results, nearly 50% of the e-voucher beneficiary farmers reported having redeemed their inputs by December 2015. The other half reported receiving inputs late due to delayed issuance of e-cards by the government. The inputs were available in the agro-dealer shops but farmers could not access them because district personnel had delayed submitting the lists of beneficiaries to the Programme Coordinating Office in Lusaka, a situation that led to late printing and distribution of e-cards to farmers. This delay in turn led to late activation of the e-cards and redeeming of inputs. On the other hand,

only about 21% received their inputs by December 2014 under the traditional FISP (RAL\$15).

Some MoA officers talked to during monitoring visits complained of having too many documents to scan to send to MoA headquarters and ZNFU. In some cases, these officers did not have the proper scanning equipment. In addition, frequent load shedding hampered their ability to complete and send all requirements as required by the PCO.

Recommendation: 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 and submission of farmer details to the PCO from the districts is done well ahead of time. Thus, the PCO should have a revised list of beneficiaries by May/June. This would allow ample time for verification and processing of e-cards in order to avoid potential delays during the implementation process. Delivery of e-cards to farmers should be done 2-3 months before onset of the rains (at least by October). MoA district offices responsible for the implementation of the e-voucher pilot need to be timely and adequately supported financially to meet all logistical requirements to enable farmers access to their verified e-cards on time. These include transportation, equipment for scanning, telephones, internet, and electricity backup equipment, just to mention but a few. In addition, these MoA officers need to be trained on how to scan and attach email documents.

Stimulating Agricultural Diversification: As expected from an initial pilot, the baseline results show that the majority of the households (85%) redeemed their e-cards for maize seed and fertilizer (Table 1). However, the other 15% redeemed other inputs including livestock inputs. For example, in the livestock rich areas such as Southern Province, about 10% of the households reported purchasing veterinary drugs and dip chemicals. The purchase of other inputs apart from maize seed and fertilizer is likely to increase during second phase of pilot as farmers choose inputs of their own choice depending on the comparative advantage in their area. Therefore, it is likely that the e-voucher would continue to help unlock the potential for agricultural diversification. This is a step forward in moving

from a maize centric agricultural structure to a more diversified agricultural sector.

Table 1. Types of Inputs Redeemed

Type of agro-inputs redeemed	% households redeeming inputs			
	Total	Central	Lusaka	Southern
Fertilizer	60.7	56.6	72.5%	62.4%
Maize Seeds	24.3	36.4	27.5%	14.8%
Cowpeas	0.6	0.0	0.0%	1.1%
Common Beans seeds	0.6	1.0	0.0%	0.3%
Insecticides	1.6	0.3	0.0%	2.6%
Herbicides	2.0	1.0	0.0%	2.9%
Agricultural Lime	0.1	0.3	0.0%	0.0%
Horticultural Inputs	1.1	0.7	0.0%	1.6%
Veterinary Drugs	3.8	1.4	0.0%	6.1%

deemed mostly fertilizer and maize seed. Table 2 shows that roughly half (49% of the households redeemed their e-cards only on one type of input, mainly fertilizer. The other 41.5% bought 2 types of inputs and the remaining 9.5% redeemed more than three different types of inputs. Another challenge cited by the farmers was that the e-voucher program was still biased towards maize because the start and closing period for redemption of the e-card coincided with the maize production season. This was seen as a huge impediment to agricultural diversification because non-maize producers were disadvantaged. For example, livestock production is not just limited to the period October to February but production takes place the whole year.

Table 2. Number of Different Types of Inputs Redeemed by Households

Number of inputs redeemed	% households redeeming inputs
1	49.0
2	41.5
3	6.8
4	1.6
5	0.9
6	0.2
Total	100

Source: FISP E-voucher baseline survey 2016.

A third challenge was with the data capturing system used during the 2015-16 e-voucher pilot

Dip Chemicals	2.6	1.0	0.0%	4.0%
Sprayers	1.3	0.3	0.0%	2.1%
Others	1.4	0.7	0.0%	2.1%
Total	100	100	100%	100%

Source: FISP E-voucher baseline survey 2016.

Challenges: Field visits by the monitoring team revealed that in some cases, farmers' choices were restricted to maize and fertilizer because the cooperative chairpersons in collaboration with extension officers only arranged the delivery of maize seed and fertilizer to their members instead of the farmers themselves visiting the agro-dealer shops.

This could be the main reason why most farmers re

implementation. The Management Information System (MIS) used to capture information of agro-dealer/farmer transaction missed an opportunity to collect the type of input redeemed. The focus was mainly on the value of the inputs redeemed. The inability of the system to capture such pertinent information is critical because it does not allow us to record the demand for various inputs by location. Therefore, it would not be possible to use the data to measure the extent of the program on agricultural diversification.

Recommendation: It is very important to rectify some of these shortcomings in the expanded pilot phase during the 2016-17 agricultural season. In particular, the e-card redemption system should capture real time information on type of inputs redeemed. In order to be able to measure diversification, there is need to have codes for different types of inputs. This will help to measure exactly which inputs and their amounts being redeemed. This information can further be used for targeting as well as cluster marketing (for agro-dealers) in subsequent farming seasons. Also, it is important for the PCO and key stakeholders to discuss how best the program can accommodate farmers who would like to use their e-cards beyond the maize production season. This would help provide the keys to hasten agricultural diversification. For audit purposes, however, there is need to have a start and closing date of

the program. For example May 1st May to 30th April of the following year.

Improvements on Beneficiary Targeting and Reduction of Leakages: Another important advantage of the implementation of the e-voucher was to help with beneficiary targeting. Although this is difficult to measure, our conclusion is that the implementation of the e-voucher has to some extent helped to improve beneficiary targeting. Unlike in the traditional FISP program, the beneficiary farmers under the e-voucher were required to go in person with their identity cards to collect the e-vouchers. The e-vouchers had a pin code, a security feature that was only known by the owner. In doing so and according to farmer focus group discussions, access to inputs by the beneficiary farmers was enhanced unlike in the traditional FISP where instances of pilferages of inputs to non-targeted individuals were noted.

In addition, the farmers who attempted to submit false information (e.g., NRCs for their deceased relatives) were unable to collect the e-cards because the beneficiary was required to go in person to collect the card. This in itself helped to reduce leakages of inputs to those who wanted to have undue advantage over others by getting more inputs. The MoA estimated that more than 20,000 ghost farmers were eliminated from the list of beneficiaries (Zambia Daily Mail 2016)

Challenges: Despite these positive developments, some households had multiple recipients of the e-cards because they could afford the down payment. According to the baseline survey, 24% of the households interviewed reported having two or more beneficiaries of the e-cards. Multiple beneficiaries from the same household means that well off households have more access to the government input subsidy than the poorer households. Unfortunately, the traditional FISP program also faces the same challenge. As long as the subsidy is targeted via cooperatives set up only to access benefits from a government program, it is likely that well deserving households may fail to benefit from the government subsidy. Worse still, cooperative membership fee of around K250–K300 per farmer was too high for some farmers making it impossible for many poor farmers from accessing subsidized inputs.

Recommendation: In the expanded phase of the e-voucher implementation, it may be important for

the MoA district personnel responsible for the e-voucher logistics to critically scrutinize the beneficiary list coming from the farmer cooperatives. In case there are queries, the camp officers can help rectify the problems of having multiple recipients in certain households. This may go a long way to increase the number of beneficiaries from more households. Also, the e-voucher should be linked to already existing programs in order to help improve targeting.

Efficient Use of Government Resources: Unlike the traditional FISP where government is responsible for the procurement (via selected tender), transportation, storage and handling costs of inputs, the e-voucher demonstrated how public resources could be saved. Allowing private sector to be responsible for their own procurement and distribution, allows government to concentrate on strengthening the targeting and redemption systems.

A comparison of the implementation costs between traditional FISP versus e-voucher implementation in the thirteen e-voucher pilot districts as shown in Table 3, shows that the country saved nearly 71.8 million kwacha (representing 14.5%) under the e-voucher system. If we take into account savings from undistributed and unloaded cards, the total savings came to K135,831,199 representing 27.4%.

Table 3. Implementation Cost Comparison between traditional FISP and E-voucher

Cost type (in 13 e-voucher pilot districts based on 241,000 beneficiaries)	Estimated costs under traditional FISP (A)	Estimated costs under e-voucher (B)
Cost of inputs/subsidy	470,546,475	409,700,000
Cost of input distribution to districts	12,187,370	0
Cost of local input distribution	13,091,120	0
Card production and maintenance	0	8,194,000
Card distribution and trouble shooting	0	3,174,720
Agro-dealer support and backstopping costs	0	3,000,000
Total	495,824,965	424,068,720
Saving (A-B) 14.5%	71,756,245	

Source: ZNFU 2015.

The huge monetary saving combined with other benefits of the e-voucher makes it more compelling for the government to implement the

subsidy program through the e-voucher countrywide.

Nevertheless, the success of the pilot during the 2015/16 agricultural season was threatened by rising inputs prices especially fertilizer. Due to the continued depreciation of the kwacha, the prices of inputs skyrocketed such that the initial value of the voucher could not compare to the value of inputs that were being received by farmers in the non e-voucher districts. The government stepped in to cushion this impact by topping-up the voucher by an extra K700. The top-up demonstrated why it is important to timely distribute the e-cards as well as encourage competition among input suppliers and agro-dealers. Given that the farmers would always compare the value of the e-voucher to that of the traditional FISP, it is important for the government to deal with all identified teething issues with e- voucher pilot program so that the system can be rolled out and implemented throughout the country. Having the programs run side by side will always result into this problem. Cost savings from the traditional FISP can be used to raise the number of beneficiaries or the value of the e-voucher. In addition, the government could focus more on the value of the support rather than a specific input package, as farmers are encouraged to buy inputs they really need.

Other Operational Challenges: Despite the notable successes, the e-voucher pilot implementation was faced with other rectifiable operational challenges. These included farmer sensitization, e-cards activation, and limited personnel capacity to implement the program.

Farmer Sensitization: It was noted during the monitoring visits that some farmers interviewed were not aware of how the e-voucher system worked. For example, some did not know they could use their vouchers for any input of their choice besides fertilizer and maize seed. Also, there were instances where some agro-dealers redeemed non-agricultural inputs such as mealie meal.

Despite these problems, more than 90% of the farmers interviewed during the baseline survey indicated they were aware of the e-voucher and its benefits. However, 4.3% of the farmers

interviewed initially associated the system to Satanism and refused to get their e-cards. Hence, there is need to intensify the sensitization program of all the stakeholders including MoA personnel, local leaders, farmers, and agro-dealers, especially on the benefits of the program, what inputs can be redeemed, role of cooperatives, and who can benefit from the program. To be successful, different media possibly translated in local languages should be used to sensitize and educate stakeholders about the benefits of implementing the input subsidy program through an e-voucher program instead of the traditional FISP. MoA District Officers have a key role to play in the sensitization process. However, it was noted that in all the 13 districts, MoA district offices did not have adequate resources to carry out their duties effectively. This was mainly attributed to delayed operational budget releases.

Availability of Diverse Inputs: It was also observed during the monitoring visits that some agro-dealer shops did not stock all the inputs on the voucher. Among inputs that farmers could redeem included live animals, veterinary drugs, herbicides, livestock feed, and sprayers. It would be unrealistic to expect that all agro-dealers would have these inputs in the pilot phases because fertilizer and maize seed still remain strongly associated with the input subsidy program. However, there were incidences where some farmers indicated that some agro-dealers redeemed the cards for inputs that were not in stock and asked the farmers to wait for delivery. Essentially, this meant that the agro-dealers were financing the orders from pre-payments by the farmers. This reinforces the need to collect information about what the farmers are buying in order to help input suppliers and agro-dealers respond to spatial demand for different inputs covered under the e-voucher. Also, there is need to think of ways of making affordable financing to reputable agro-dealers to help them stock their shops.

E-card Activation: One of the major complaints by farmers and agro-dealers was the long delays in e-card activation. Farmers received the e-cards but could not work because they had no money on them, hence, could not redeem inputs in a timely manner. Ninety two percent of the farmers

interviewed in the baseline survey indicated that the major problem was delayed card activation, and 46% indicated that they did not have any information about whether their cards were activated or not. The problem of e-card activation was also compounded by errors about the beneficiaries. About 8% of the households in the pilot districts reported that their names or national registration card numbers were wrongly entered when they registered and this delayed their e-cards activation. Other cards that were recorded as activated were failing to be redeemed. The high incidences of e-card failures at redemption point curtailed the success of the e-voucher program because major input suppliers threatened to stop delivering inputs to agro-dealers on credit as they were delaying to remit money to them.

Interviews with some agro-dealers revealed that they felt that there was selective activation of cards, suggesting that there was no transparency within the system. Also, there was inadequate staffing at ZNFU to deal with high volumes of activation problems. Therefore, there is an urgent need to review the way the program is structured to remove all unnecessary human related impediments in the e-card activation system. Preferably, the current manual system should be eliminated. There is need for an electronic system that is activated whenever the correct identification codes are entered. In addition, the farmer registration and verification process should be done well in advance. There is need to consider full proof biometric registration process to hasten the registration and verification process.

CONCLUSIONS: In general, the implementation of the e-voucher pilot system can be judged as successful despite the challenges discussed in this brief. The expanded e-voucher program will benefit from the lessons learnt outlined in this report. IAPRI and the MoA team will continue to monitor the implementation of the second pilot phase and make recommendations for timely action by MoA. If implemented effectively, the e-voucher system will be one of the pathways to encourage agricultural diversification in the country as farmers are given an opportunity to obtain inputs of their choice. Government can save a lot of money currently being used in fertilizer

procurement and distribution of limited inputs. Instead, the government will crowd-in private sector participation in inputs distribution to farmers, thereby, leveraging public expenditure and encouraging private investment in the agro-dealership.

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