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# Electronic Smart Subsidies in Agriculture for Food Security in Tanzania

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## Introduction

Agricultural sector remains the basis for most Tanzanian's economic activities as more than 80% of the population depends on agriculture for subsistence, employment, income and other basic needs. The sector contributes more than 24% of Gross Domestic Product (GDP); accounts for about 66% of commodities export; 26% of the total foreign earnings; and provides raw materials to domestic agro-based industries (NBS, 2007). However, relative to other developing regions of the world, agriculture in Tanzania is undercapitalized, uncompetitive and underperforming and this declining performance is symptomatic of inadequate expenditures in the sector. One of the constraints facing agriculture in Tanzania as pointed out by the National Strategy for Growth and Reduction of Poverty (URT, 2005) is low productivity of land. Conscious of the need to reverse the current declining trend in agriculture, the United Republic of Tanzania provides subsidies through voucher system to farmers on fertilizers, seeds, seedlings and pesticides through the National Agricultural Input Voucher Scheme (NAIVS).

The objective of NAIVS was to increase smallholder farmers access and use of critical agricultural inputs so as to increase production and productivity of food and cash crops, contributing to food security and poverty reduction (World Bank, 2009).Under NAIVS, the Government expenditure on fertilizer subsidy increased from 31.9 billion in 2008/2009 to128.7 billion in 2010/2011. Also the quantity of subsidized fertilizers increased from 130,000 tonnes to 201,015 tonnes in 2010/2011 (MAFC, 2013). Under NAIVS, selected farmers are entitled to input voucher to acquire inputs below the market price based on voucher value. The government spending on this program was intended to increase production of rice and maize in agro ecological areas with high production potential of these staple crops. Initially the programme was planned to cover 65 districts in the country. However due to political influence the program was extended to 130 districts out of 152 with more cops introduced into the program including cotton, tea, coffee and cashew.

Although the system has reduced input cost burden to poor farmers, agricultural productivity of the targeted crops particularly maize and paddy in many areas has not increased substantially commensurate to the level of government investments in the program. Kato (2013) outlines

several points associated with this. These include late delivery of vouchers which lead to non-use of inputs by farmers; increase of input price beyond reach of some farmers, farmers selling signed vouchers to the agro-dealers at cheap price whereby the agro-dealers get full payment from the bank without redeeming inputs, poor due diligence in identifying input stockists that lead to selection of some stockists who have no adequate capital to deliver required amount of inputs to farmers, and input adulteration by traders. This paper presents an innovative model (**Electronic Smart Subsidies in Agriculture (ESSA)** that has been developed by Sokoine University of Agriculture in Tanzania to mitigate the problems highlighted above. This model is improvement of the voucher system by leveraging on ICT development to minimize paperwork and link farmers directly with agro-dealers in a transparent environment. The business sector (fertilizer and seed companies) and farmers will drive the system with the Government playing a supportive role. Essentially in this model, a cash component of the product value is put directly in the hands of the farmers via mobile phones (e-envelop) and thus stimulate demand for fertilizer seeds.

**Operational framework of ESSA**

The government provides financial support to qualifying smallholder farmers to go to an identified agro-dealer to buy a specified amount of inputs. This support is a cash support to be loaded on the farmers' mobile phones. Suppliers of inputs work with the Government at various levels to strengthen or develop a national input distribution network. Each farmer visits the agro-dealer delivery site with a balance of money required to top up on the Government subsidy by transferring their electronic voucher (e-voucher) to the agro-dealers phone. In turn, a farmer receives fertilizer and seeds. For the sake of transparency, the transactions at the delivery centres take place in the presence of several (4-5) witnesses selected in manner that they cannot easily collude. After reconciliation agro-dealers submit claim for funding at a participating commercial bank.

**Advantages and challenges of ESSA**

| **Potential advantages of the ESSA** | **Potential challenges of the ESSA** |
|---|---|
| • Inputs will reach intended beneficiaries in the correct amount;<br>• Aggregate agricultural production will likely;<br>• Promotion of agro-dealer network in the area;<br>• Input quality will be ensured<br>• Lending to the sector will be derisked as banks will be certain on loan recovery;<br>• Creation of employment as input redemption centre will employ a number of people;<br>• Billions of money that are currently fraudulently lost will be saved. | • As long as this is a man-made system it can never be problem free. There will always be a new generation of problems;<br>• Those who profit out of the current system would likely fight against it;<br>• The main assumption of the model is that efficient input delivery will translate into better utilization which might not be the case;<br>• Some agro-dealers may have problems accessing credit from commercial banks to stock adequate fertilizer at their redemption centres. |

**Success factors of ESSA**

- Proper registration of target farmers and agro dealers. Without this kind of registration it becomes difficult to coordinate and monitor transactions in the system. This creates room for spillage.
- A strong monitoring and evaluation (M&E) mechanism should be put in place to ensure that everything is executed as planned, and emerging problems are detected immediately;
- High commitment on the part of top government officials to ensure that the system works; and
- The system must be private sector driven with government playing a supportive role.
- Holistic approach – address all dimensions (value chain spirit);
- Building trust across the entire value chain. These should not be taken for granted. It could be achieved through enhanced transparency on every segment of the system;
- Consistence and continuous learning is paramount. In a system like this there will always be new challenges emerging to pressure test the system.

**Conclusions and Outlook**

If this model was adopted, among other things, inputs would reach intended beneficiaries in the correct amount and at the right time and ultimately productivity would increase and food security would be ensured.

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