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The Role of Mobile Phone SMS Solutions in Promoting Agribusiness among Small-Scale Farmers in Rural Zambia. A Case of Northern Province

Stephen Tembo

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The Technical Centre for Agricultural and Rural Cooperation (CTA) is a joint international institution of the African, Caribbean and Pacific (ACP) Group of States and the European Union (EU). Its mission is to advance food and nutritional security, increase prosperity and encourage sound natural resource management in ACP countries. It provides access to information and knowledge, facilitates policy dialogue and strengthens the capacity of agricultural and rural development institutions and communities.

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Executive summary

This paper will endeavour to briefly describe how the use of market information systems through mobile phones can promote agribusiness and improve the socio-economic welfare of small-scale farmers in rural areas.

Generally, Zambian small-scale farmers can produce food and breed quality livestock. However, lack of access to reliable and up-to-date market price information is a serious problem for smallholder farmers in Zambia. Without this information, they are vulnerable to exploitation by unscrupulous traders giving them prices at below-market rates. As a consequence of poor market access, small-scale farmers continue to be poor (Nawa, 2013). Furthermore, they are reluctant to diversify into different cash crops for fear of not finding a profitable market for their produce (Jimenez, 2013).

The government facilitates marketing for mainly maize and rice in Mungwi district at a price determined by government. These commodities are bought through the Food Reserve Agency (FRA). This marketing approach has some disadvantages as farmers are not usually paid on time and only a few satellite depots were set up in the district. Thus farmers who were not near the satellite depots were at a disadvantage as they incurred huge transport costs and were thus compelled to search for markets elsewhere.

The Zambia National Farmers Union (ZNFU) 4455 SMS trade and market information service is a simple, convenient and cost-effective service that is helping farmers in rural areas to search for market for their produce at better prices within their regions and beyond.

The farmers are able to make informed decisions about when to sell a particular commodity, to whom and at what price (Jimenez, 2013). The platform offers information and buyer contact details for 10 major crops, four livestock and honey nationwide.

Since the farmers usually get paid on time, they can plan their farming activities effectively and can diversify their farming enterprises.

The importance of adoption of ICTs for agriculture cannot be overemphasised, as some small-scale farmers can now also access financial services and check the weather forecast using mobile phones.

Introduction

About 60% of the population in Zambia lives in rural areas and relies on agriculture for their livelihood. The agriculture sector is the main employer in the country with the greatest potential to reduce poverty levels in rural areas. However, its contribution to the gross domestic product has remained below 20% (Nawa, 2013).

Previous Zambian Governments have concentrated on promoting and subsidising production and marketing of maize through the Farmer Input Support Programme and the FRA. Maize is Zambia's staple food. "Agriculture was crops and the main crop was maize." FRA bought almost all the maize from small-scale farmers but did not pay them on time. This negatively affected farmers to properly plan for the next farming season. The market for other cash crops was not guaranteed making the smallholder producers vulnerable to exploitation by unscrupulous traders and other actors in the various agricultural value chains.

The current government is now promoting crop diversification and livestock production and has since reduced the subsidies for maize production and marketing.

The private sector has since been encouraged to be key players in the agricultural value chain and help to drive the agricultural sector forward through private-public-partnerships. The government is doing so by providing an enabling environment through infrastructure development, rural electrification and extension of mobile phone services to rural areas, to mention but a few.

Introduction of mobile phones in Mungwi

Mobile phones subscription in Zambia is growing at the rate of 29% (ZICTA, 2013).

About 57% of the population in Northern Province own mobile phones and 16% of these receive information via SMS (AudienceScapes). In Mungwi district, mobile phones became common in mid-2005 with mobile phone network coverage limited to Mungwi central only.

Mr David Ng'andu is a small-scale farmer and confessed that in 2005, very few farmers could afford to own a mobile phone and that airtime (call credit) was very expensive. He reported that mobile phones were considered to be a luxury item because farmers did not know that apart from calling, beeping/pegging and sending text messages, it could also be used to access market information.

MIS (ZNFU 4455) in Mungwi

The Zambia National Farmers Union Market Information System or ZNFU 4455 was designed in 2006 with the assistance of the Agribusiness Development Component of IFAD's Smallholder Enterprise and Marketing Programme (Struyf and Sommeling, 2011).

ZNFU 4455 was first made available to farmers in Mungwi 2008 with logistical support from Ministry of Agriculture and Agriculture Support Programme through camp extension officers.

In Mungwi, it was initially used by extension officers to collect market information for dissemination to the farmers through the 19 information centres in the district. It was not

widely used due to limited mobile phone network coverage and limited ownership of mobile phones by farmers – mobile phones were expensive and considered as a luxury item at the time.

The service allows smallholder farmers to compare current prices in their district, province or countrywide and to make the best decision on where to sell their produce. The service offers market information and buyers contact details for 10 major crops and four livestock and honey countrywide. The main crops are maize, soybeans, wheat, groundnuts, sunflower, cassava, sorghum, rice and beans. The main livestock are cattle, goats, sheep, pigs as well as honey.

The SMS platform has also proved useful in tracing production of agricultural commodities, agri-food processors and markets within Zambia.

How it works

The ZNFU 4455 is an SMS-based, simple, fast, affordable, convenient, reliable and cost-effective mobile phone SMS market and trade information service.

A farmer sends an SMS with a commodity code plus province/district code to 4455 and receives an SMS giving the buyers and prices.

After selecting the best buyer, the farmer sends another SMS with the selected buyer's code to 4455; the farmer receives the buyer's details so the farmer can contact the buyer directly and trade.

Each SMS message costs approximately US\$0.15. The farmer can negotiate the buying price if he is not happy with the buyer's offer.



Plate 1. Mr Ng'andu accessing market information on his mobile phone.

MIS at work

Mr Ng'andu has been a farmer for the past 15 years. Since 2007, his main farming enterprise was maize. He decided to diversify because the major buyer of the maize was FRA who did not pay him on time. He has since gone into piggery, has a pair of working oxen and is a transporter. He intends to go into dairy in 2014.

“Without access to up to-date market prices for our produce, we are very vulnerable to being swindled by traders from the cities and a neighbouring country who want make astronomical profits from our hard-earned produce” said Mr Ng'andu.

“I decided to diversify because every farmer is venturing into maize production and we are all targeting FRA for the market. I even reduced my maize production from 770 by 50 kg bags of maize in 2011 to 550 by 50 kg in 2012,” Mr Ng'andu said.

Mr Ng'andu further narrates that 3 years ago, his usual mode of transport was a bicycle. But because of diversifying his farming enterprises and having access to up to-date market information for his farm produce, Mr Ng'andu now owns a motor bike and a light truck; he has built another house and plans to buy a tractor in 2014.

“I have built another house which a civil servant is renting, I am now a landlord,” said Mr Ng'andu, with a big smile on his face.

Farming is a business and if well managed, it can improve the livelihoods of small-scale farmers. Mr Ng'andu has emerged to be a role model and lead farmer in Mungwi district. The socio-economic status of his family in his community has improved considerably. In 2012, he was elected as chairperson for Chipya Multipurpose Cooperative Society. The latter is a cooperative to which he has been affiliated for the past 13 years. Later in 2013, he was elected as Mungwi District Farmers Association (DFA) chairperson in 2013. DFAs are district chapters of the ZNFU.

“I have used a mobile phone for financial services like Airtel money. I also use a mobile phone to access the weather forecast least a week and this helps me plan,” explained Mr Ng'andu.



Plate 2. Mr Ng'andu checking the weather forecast on his Android mobile phone.

Benefits of MIS to the small-scale farmers

- Getting the best prices for their produce
- Reducing marketing costs
- Increasing household incomes
- Helping them plan and makes decisions e.g. diversification
- Bulking of commodities

Opportunities for MIS

- Stakeholders e.g. IFAD (Smallholder Agribusiness Promotion Programme), ZNFU and Musika
- Reduction of subsidies on maize production and marketing/promotion of diversification
- Cheap mobile phones and willingness by the farmers to run a mobile phone and pay for information
- Rural electrification and rehabilitation/construction of feeder roads (political will)
- Mobile phone network expansion to rural and remote areas (Airtel and Cel Z)

Constraints of MIS (ZNFU 4455)

Despite mobile phone subscription increasing by 29% (ZICTA, 2013), only a few farmers are able to access the market information service because of the following

- The service is only offered in English and there are high illiteracy levels among farmers (farmers are sometimes assisted by their children)
- Poor infrastructure e.g. feeder roads and bridges

- High cost of air time (call credit) in rural areas e.g. a KES5 airtime voucher would cost KES6.50

Conclusion

Market information services (MIS) delivered through mobile phone SMS platforms help to increase household incomes, reduce marketing costs and improve the social welfare of small-scale farmers. They also reduce costly and time-intensive travel associated with marketing of agricultural produce. The SMS platform is also useful in rural areas as most small-scale farmers do not have computers and are computer illiterate but almost all of them have mobile phones and are able to operate them with ease.

Households are able to switch from subsistence farming to cash crop farm due to availability of market for their produce.

However, mobile phone SMS solutions can effectively contribute to agricultural development when supported by infrastructure such as good road, bridges, storage sheds and schools. High illiteracy levels can prevent small-scale farmers in rural from utilising mobile phone services.

The mobile phone SMS platform is an efficient media for dissemination agricultural information in rural areas and to provide timely feedback to farmers.

Recommendations

If mobile phone SMS platforms are to be easily adopted in rural areas, they must be easily accessible, cost-effective, user-friendly and affordable.

The service should be provided by more than one cellular network provider and preferably in major local languages.

MIS could do more than just provide market information. It should be able to provide a wide range of products and services and must have a business model if it is to be sustainable.

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