

## **ICT-Based Market Information Services, Operational Environment and Performance: The Case of Malawi Agricultural Commodity Exchange and Food and Nutrition Security Joint Task Force**

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### **Abstract**

*The increased demand for agricultural market information to farmers in Malawi led to the emergence of ICT-based Market Information Service projects to promote farmer linkage to better markets. This case study examined existing ICT-based applications in Malawi, the environments in which they are applied and critically analyzed challenges encountered. The paper used two projects, Malawi Agricultural Commodity Exchange and Food and Nutrition Security Joint Task Force. The study revealed existence of a number of ICT-based interventions which were applying both new generation ICT-based tools such as telephones and internet and older ICT-based technologies namely the radio and television. The interventions appeared to have helped some farmers to access local and international markets timely. However, the projects were seriously affected by government policies such as minimum price and quantitative restrictions on exports. Lack of business models was another serious constraint as most projects appear to be too dependent on donor support.*

**Key words:** ICT-based MIS projects, operational environment, performance, smallholder farmers, Malawi.

### **1.0 Introduction**

Agricultural marketing plays an important role in sustainable poverty reduction and household food security especially in developing countries. Markets contribute to and are shaped by the wider systems of which they are a part. Systems that are more pro-poor in their final outcomes have in fact captured and utilized the essence of markets. Marketing could be a catalyst for change or a powerful way to preserve the status quo. Markets provide an important mechanism for efficient coordinated economic exchange such that promotion of more efficient and extensive markets and favourable access of the poor to markets is an important element in promoting their access to exchange mechanisms and hence enhance their livelihood (Dorward and Kydd, 2005).

However, agricultural markets in Malawi and most developing countries have often failed for smallholder farmers where both macroeconomic and trade policy tools appear less useful in inducing market participation by poor smallholders. Some important factors attributed to this include: i) poor access to market information or information asymmetry, ii) lack of access to productive technologies, and iii) poor access to public and private goods (Okello, 2010). Consequently, majority of smallholder farmers sell their produce in poorly-paying local markets or at the farm-gate rather than travel to distant better-paying markets (Katengeza et al 2011a). Lack of reliable and guaranteed markets has often resulted into small-scale farmers making huge losses. For such farmers, the markets tend to be thin, fragmented and missing altogether. Thus, facilitating farmer access to better-paying markets has been an issue of major concern to policymakers in Malawi (Katengeza et al 2011b).

Under the tutelage of the World Bank and the International Monetary Fund (IMF), Malawi implemented a number of reforms, including the structural adjustment programmes from 1981 to 1994. One of the major components of the structural adjustment programmes was price decontrol. This was seen as an important pathway to allow market forces dictate resource allocation in agricultural production. In addition, market liberalization was expected to increase competition so that farmers earn a good return on their investment through fair input and output prices. The second major component of the reforms was restructuring of the country's marketing board, the Agricultural Development and Marketing Corporation (ADMARC). The aim was to have a free marketing environment with enhanced private sector participation in input and output marketing. The outcome of this was decreased smallholder farmer dependence on ADMARC and an increase in private sector participation (Katengeza et al 2011c and Tollen, 2006).

Despite these reforms, inefficiencies in input and output markets for smallholder farmers continued in the ensuing years. Some of these inefficiencies included: long chains of transaction between the farmer and the consumer; poor access to reliable and timely market information; and small volumes of products of highly varied quality offered by individual smallholder farmers. One of the major contributors to poor market access is the lack of reliable and timely market information on input and output process as well as on input and output quantity and quality. This absence substantially increases transaction costs and reduces market efficiency. For any one crop, the marketing chain consists of multiple middlemen; each taking a margin at every stage of the chain, and price variation in space and time are often large and erratic. The consequences are low returns and every exchange is based on visual inspection of the good (Mukhebi, 2007).

To solve the problem of market failure, one important mechanism is the provision of agricultural information (Manda, 2009). Recent efforts to tackle lack of access to agricultural market information has thus, focused on use of ICT-based applications. ICT-interventions have attracted attention because they are more effective in communicating knowledge to rural farmers; are more cost-effective and they facilitate access to markets. In Malawi provision of ICT-based market information service is carried out by a number of providers. These include Malawi Agricultural Commodity Exchange (MACE) Programme, Food and Nutrition Security Joint Task Force (FNSJTF) of the Ministry of Agriculture and Food Security (MOAFS), Agriculture Commodity Exchange for Africa (ACE) and National Smallholder Farmers' Association of Malawi (NASFAM) (Manda, 2009, COMESA Secretariat, 2007).

Recent studies across the region and beyond have shown that the ICT-based market information service (MIS) interventions do facilitate smallholder farmers' access to market information and hence enhance linkage to input and output markets (Katengeza et al, 2011c; Katengeza et al 2011b; De Silva, 2010; Chigona et al, 2009 and Aker, 2008). However, ICT-based projects operate under varying environments and encounter considerable challenges that tend to affect the performance of such projects. This paper applies case study techniques to examine existing ICT-based MIS projects and how the environment within which they operate affects their performance and critically analyses challenges that affect their success in linking farmers to markets. The study uses two interventions namely MACE and FNSJTF. The rest of the paper is organized as follows: Section 2 discusses the study context and introduces the two projects while Section 3 outlines materials and methods. Section 4 presents challenges the projects have faced and how they affected their performance. Section 5 concludes and provides policy implications.

## **2.0 Study Context**

### **2.1 Malawi agricultural commodity exchange**

MACE became active on September 1, 2004 and has been implemented within the overall project framework of Initiative for Development and Equity in African Agriculture (IDEAA). The IDEAA concept was developed and started in 1996/1997 as a regional programme with an overall objective of improving productivity and income streams of smallholder farmers in Botswana, Lesotho, Malawi, Swaziland, South Africa and Zimbabwe with funding from Rockefeller Foundation and Kellogg Foundation. The programme underwent restructuring in August 2003, which was mainly influenced by restructuring of Kellogg Foundation. This resulted into the closure of IDEAA as a regional programme in all the countries except Malawi, which was being wholly funded by Rockefeller Foundation (IDEAA, 2004).

During phase two Malawi specialised on cassava commercialization through the development of stable cassava markets. It was then realised that they needed a functional market information system to support cassava market development. This then led to the development of an agricultural Market Information System (MIS) to provide market information and link buyers and sellers of agricultural produce to address some problems associated with marketing of agricultural produce. The overall goal of the programme was to make markets work better for smallholder farmers and lower huge risks and transaction costs that hinder market development in Malawi, working on the principle of agricultural commodity exchange. The conceptualization of MIS gave birth to Malawi Agriculture Commodity Exchange (MACE) to run a commodity neutral project and ensure sustainability of the project beyond donor funding (IDEAA, 2005).

MACE was then registered as a limited company in 2007 with the hope of enhancing poverty reduction and economic growth through provision of the following complementary services: agricultural market information on inputs and outputs, trade opportunities such as bids to buy and offers to sell, linking buyers and sellers of agriculture commodities and building the capacity of smallholder farmers (Manda, 2009). The core objectives of MACE include: (i) to facilitate linkages between sellers and buyers; (ii) to empower farmers with relevant and timely market information and intelligence to enhance their bargaining power and competitiveness in the market place; (iii) to provide a transparent and competitive price discovery mechanism through the operations of the exchange trading floor; and (iv) to harness and apply the power of ICTs as a strategic tool for rural value addition and empowerment (IDEAA, 2007). The primary beneficiaries of MACE are smallholder farmers. Secondary beneficiaries are traders (buyers and sellers) of agricultural commodities, large private companies, Non Governmental Organization (NGO), Government, donor agencies and the general public. Some of the implementation principles of MACE are commodity neutral, public private sector initiative and cost recovery.

### **2.1.1 MACE technologies used**

MACE uses a number of technologies, including SMS, internet, radio and Interactive Voice Receiver (IVR). The price collectors scattered around the country collect commodity prices in their assigned markets. Each price collector has a cell phone with an access code into MACE server in Lilongwe. This allows the price collector to enter price data directly into the server upon collection. Information can be accessed by anyone with a cell phone irrespective of the network they use within Malawi. However, price data can only be entered using TNM. A menu is also available for users who want to make inquiries in both English and Chichewa. Users can access six different types of information using SMS: wholesale price, retail price, fertilizer recommendation, hybrid maize recommendation, trade information-users can literary trade by placing an order or a bid using the SMS number, and average prices for crops, livestock and inputs in Blantyre, Limbe and Lilongwe markets.

MACE also uses radio for dissemination of agricultural marketing information. Another method of disseminating agricultural marketing information is the [www.ideaamis.com](http://www.ideaamis.com) website. At present, the use of this service is extremely limited due to the absence of the required infrastructure and access equipment to the internet in most rural areas. However, the prices are disseminated daily to NGOs, donors, some farmer associations, and individuals. The information is put in an excel sheet and loaded onto the website. Excel sheets loaded with information is also emailed to those who need it.

Prices, bids and offers are accessed together with selected agronomic practices from the latest Extension Guide to Agriculture, which is available from agricultural offices. The type of information farmers need include information on what to plant, planting decisions, current prices, and historical prices. Information on weather is currently not provided. MACE is planning to launch an Interactive Voice Receiver (IVR) system. In this service, the user dials in a code and options are given. The system is currently being tested. FAO has suggested use of a magic pen, which would likely replace the cell phone. This will help to indicate the time price was entered and who entered it and the cell phone that was used. MACE has in the pipeline ideas on how to include transportation costs to different markets and a database of transporters. This information will also be available on the website.

### **2.1.2 Key services**

IDEAA provides two main services: price information service (daily price) and trade facilitation services (matching bids-demands with offers-supply). The market price service covers cereals, pulses, vegetables, tubers, fruits, spices, livestock, and fertilizer. The IDEAA enumerators send short messages daily to MACE. Trade facilitation service involves receiving offers to sell and bids to buy from farmers and clients. Through the offers and bids, the following trade information is collected for various commodities: types, quantities, quality and prices of commodities offered for sale (supply) and bids to purchase (demand), where (different places/markets) when, and by whom (seller/buyer contact address and phone number). The information is collected, updated, and disseminated daily. Through the price and trade facilitation, the system generates internal reports of daily prices, bids to buy and offers to sell, which results in trade transaction linking a buyer to a seller.

## **2.2 Food and nutrition security joint task force**

The Food and Nutrition Security Joint Task Force (FNSJTF) was introduced in 2001 by the government of Malawi in response to food crisis to ensure coordination among all stakeholders to alleviate the situation.

The FNSJTF is coordinated by the Technical Secretariat (TS) housed in the MOAFS Head Quarters and is supported by the European Union. The Food and Nutrition Security Joint Task Force / Technical Secretariat (FNSJTF/TS) is a technical instrument supporting the Ministry of Agriculture and Food Security (MOAFS) to efficiently collect and elaborate all stakeholder contributions and to express its own political, strategic and operational decisions on food security issues. The FNSJTF/TS also acts as an interface between government, donors, civil society and private sector. The FNSJTF/TS supports the MOAFS Market Information System (MIS) to disseminate market information to all stakeholders and interested users. Initially, the information which is collected by MOAFS enumerators was just shelved as there was no proper coordination to have the information disseminated formally.

### **2.2.1 The Market Information System**

The Food and Nutrition Security Joint Task Force (FNSJTF) through the Information Systems Committee support the Ministry of Agriculture and Food Security (MOAFS) Market Information System (MIS) to document and disseminate market information collected by MOAFS enumerators. The MIS started in 1989 with funding from European Union. The intervention started with 16 markets which were announcing prices on radio. As part of the market liberalization program, in the early 1990s (1991-1992) the Ministry of Agriculture through its Planning Division instituted under a World-bank an Agricultural Marketing and Estate Development Project to collect and disseminate market information for the consumption of farmers and traders. The initiative was limited to the collection and dissemination of agricultural commodity prices (retail prices) through the radio and the major print media.

The mechanics of implementation involved Extension Planning Area personnel. These were mandated to collect weekly price data on selected agricultural commodities including maize, cassava, sweet potato, beans, sorghum, rice and groundnuts. The prices were then transmitted to the Planning Division of the Ministry of Agriculture Headquarters in Lilongwe via fax or ground phone. The Marketing Section of the Planning Division in turn summarized all the price information from all the markets throughout the country. The information was then passed on to the Malawi Broadcasting Corporation and Daily News papers for announcement/dissemination to the whole country. It was hoped that this would reduce search costs, and price differentials between any two areas and would assist traders to go where prices were lower to effect arbitrage to high cost areas. The impact of this initiative was limited because it relied on limited channels of information dissemination and also had limited focus. It appears no attempt was made in the planning stages to assess the type of information that would be useful to farmers, traders and consumers and also the best ways to disseminate such information for it to have maximum effect.

In 2000 farm gate (wholesale) survey was introduced to collect agricultural commodity prices. In 2001 the FNSJTF/TS started supporting the Market Information System with funding from EU to ensure efficiency and effectiveness of the programme. In 2004, input survey was introduced to collect fertilizer and other input prices. Collection of livestock and horticultural prices followed. The EU consistently supported some of the marketing activities from 1989 to 2004. In 2005 the EU supported an agricultural market information system and continued to support it till 2009. EU however, intends to stop supporting the activities and that FNSJTF project would be phasing out by September (2012). The EU wants the government to take over.

The MIS in the Planning Division of the Ministry of Agriculture has been a crucial partner in providing reliable market price data to Farming Early Warning System Network (FEWS NET) (Development Associates, Inc., 2003). However, realizing that the unit was having problems in getting reliable data, FEWS NET decided to assist them with training as well as procurement of equipment for data collection enumerators in the form of weighing scales and calculators. FEWS NET conducted training on data collection and analysis/interpretation of the data to sensitize officers on the need to collect accurate information. FEWS NET also bought several computers and printers for the Planning Division to assist with data capture and storage. All this effort has gone a long way towards ensuring that reliable data is collected and made available to stakeholders on time. FEWS NET played a leading role in persuading the ministry to recruit additional enumerators in order to expand market coverage. Without the FEWS NET support the output of the Planning Division/unit would have been severely compromised.

### **2.2.2 Market coverage**

Retail market prices from 38 markets collected by MOAFS enumerators are transmitted via SMS to MACE. The prices are both historical and current. Trade facilitation services involve receiving offers to sell and bids to buy from farmers and traders/clients, respectively. Through receipt of bids and offers, the following trade information is collected for various commodities: types, quantities, quality and prices of commodities offered for sell (supply) and bids to purchase (demand), where (different places/markets), when, by whom (seller/buyer contact addresses/phones). Through the price and trade facilitation, the system generates internal reports of weekly prices and bids to buy (demand) and offers to sell (supply), which result in trade transaction linking a buyer to a seller. MOAFS uses mobile phone SMS with Telekom Networks Malawi (TNM), email, weekly radio program in order to reach out to various users of the services. MOAFS together with MACE joint Technical Secretariat disseminate information to NGOs, donors, and other users.

The Ministry employed 200 enumerators in the country who collect market information. Each enumerator has a phone used to collect and disseminate information. MOAFS through MACE is regarded as a development initiative that seeks to bring about developmental change, but with a business approach for long-term financial sustainability. In this respect MOAFS seeks to mobilize smallholder farmers organized in groups, associations or cooperatives and improve their capacity for competitiveness in market places through provision of reliable and timely market information and related services.

The MOAFS also do periodic surveys. They have done such work with Agriculture Development Program, and Farm Input Diversification Program (FIDP). All services were demanded by beneficiaries. The market surveys or maize intelligence surveys are used by government for planning purposes. Thus, the ranges of services have evolved from simple price information to trade facilitation and implementation of market surveys for government decision making. The target beneficiaries of MOAFS are smallholder farmers through increased market access from trade facilitation and access to price information. Other indirect beneficiaries are small-scale entrepreneurs, private sector buyers including processors. Bunda College, donors, NGOs and interested private individuals who subscribe to the service are also target beneficiaries.

The MOAFS in collaboration with Agriculture Research and Development Program (ARDEP) Market Access Project run pre-recorded market information to a live phone-in programme, which allows listeners to place offers for sale or bids to buy commodities, thus permitting two-way real time exchange. The live phone-in program has led to the generation of bids and offers, and finalization of exchange transactions on air. The radio is a promising tool for dissemination of information as it has the potential to reach the whole population of Malawi. In 2009 the Ministry through FNSJTF/TS also created an easy to use website as part of the efforts to improve flow of information amongst stakeholders that are working to improve agriculture and food security. The site contains a number of key documents and important pieces of information relating to agriculture food security and nutrition. All stakeholders and interested individuals and organisations can easily have up-to-date access to the latest data, documents and policies.

### **3.0 Materials and Methods**

This paper was based on detailed case-study interviews with various stakeholders of the two MIS projects; Malawi Agricultural Commodity Exchange and Food and Nutrition Security Joint Task Force. These are detailed in the following sections.

#### **3.1 Consultations with ICT-based intervention providers**

Discussions were held with Malawi Agriculture Commodity Exchange (MACE) programme management and implementation team at the beginning of the study, Food and Nutrition Security Joint Task Force / Technical Secretariat (FNSJTF/TS) and Malawi Ministry of Agriculture and Food Security (MOAFS). These discussions helped to gain an insight into the interventions and have a common understanding on the objectives of the study. The discussions also helped to obtain a list of organizations providing ICT-based market information services (both successes and failures). Follow up discussions were also done with MACE secretariat, FNSJTF/TS, MOAFS, local managers and staff and target beneficiaries (farmers) to substantiate results.

### **3.2 Key informant interviews**

A number of organizations and government departments were targeted for the purpose. These included MACE, and the Ministry of Agriculture and Food Security (MOAFS). In addition, some key NGOs providing marketing information services were also visited. These included ACE and National Smallholder Farmers' Association of Malawi (NASFAM). At these organizations, discussions were held with key staff to get more insights into the market information services provided. Other key informants included local project managers and staff. The issues gathered included when the services were established, the goals of the project, the type of ICT technology used, the type of people accessing and not accessing the project, the project primary beneficiaries, the geographical scope of the project, success and failures, cost of implementation, sustainability and future plans for the projects.

### **3.3 Primary data collection**

This process involved participatory consultations with beneficiaries through focus group discussions. Discussions were also held with local stakeholders including traders that have had some involvement with the project, local government officials and NGOs. To collect some qualitative information about ICT-based projects, participatory community consultations with beneficiaries were conducted in Thyolo, Blantyre, Mwaza, Chiradzulu in Southern Region; Lilongwe and Kasungu in Central Region and Mzimba in northern Region. Other pieces of information captured from beneficiaries included ICT technology served in their areas, problems associated with ICT technology, types of market information provided, challenges faced and achievements of ICT technology. In order to collect useful and relevant data, a cross section of beneficiaries was involved with due consideration to gender balance. A checklist was used to guide discussions.

Direct observations were also recorded on issues such as the operating environment, available management materials and their conditions, technological issues such as limited network coverage, unreliable power supply, and other assets in the area, and observable commodity offered in market information services. Research assistant was given a notebook in which to record the observations.

## ***4.0 Performance, Successes and Challenges of MACE and FNSJTF Projects in Linking Smallholder Farmers to Markets***

### **4.1 Performance and successes of MACE and FNSJTF**

#### **4.1.1 Performance and achievements of MACE**

MACE seems to have done well in Lilongwe around Lobi area and in Mzimba around Jenda communities. The intervention does not seem to have had success in Mwanza, Chiradzulu and Kasungu districts. The main reason is that farmer groups in these areas were trained and promised bicycles and cell phones which never came. Farmers therefore felt cheated. This was echoed by farmer groups interviewed in Kasungu, Mwanza and Mitundu in Lilongwe. Key informants who are basically running district resource centres agreed with the farmers. The key informants noted that they too were promised computers, fax and internet which never came. In some cases MACE has been more successful in linking traders as opposed to linking farmers to traders. This is so because the volume of trade accounted for by farmers is very small. This sometimes makes success of the project elusive because the core business of MACE is smallholder farmers so that dominance of traders makes MACE miss on some of key indicators.

The franchising model where private individuals are being allowed to run the MACE may not benefit smallholder farmers, because private individuals are wholly driven by profit motive and may use unethical business practices such as bad scales to cheat farmers. The model has also been affected by government policies such as semi-market liberalisation where the government continue putting bans on marketing. For example in 2009 the government stopped all traders from selling seed except ADMARC. This meant that all traders including MACE Market Resource Centres who had already sourced the seeds made losses as they couldn't sell the products. This put most of them out of business and some even closed the centres e.g. Jenda Market Resource Centre closed in 2009 because of this.

Nonetheless, MACE has registered a number of achievements in increased trade in the areas farmers have access to information because such information helped them to make informed decisions.

In certain cases, farmers had an instant success in that within an hour of being connected to a trader, transactions were completed the following day. For instance in the radio program, farmer and trader connected during the period 17:00-1800 hours on a Friday were able to complete transactions the following Saturday. MACE sometimes secures markets under a tendering process, which are guaranteed over a period of 12 months. Such markets include Malawi Defence Force, Government hospitals and Irrigation, Rural Livelihoods and Agricultural Development (IRLAD). Such markets once identified are passed on to the farmers to supply.

Farmers belonging to Ziyaya Farm Club in Mwanza district indicated that before the advent of IDEAA-MACE, farmers used to take their products to flooded markets where they would sell them cheaply. With the project, farmers were being informed about markets requiring specific products at specified time, place and price. This culture started growing and today farmers rely on it. The introduction of mobile phones allowed farmers to call the project centres to find information instead of travelling all the way to the district or other markets to seek such information. This has also allowed farmers and buyers to plan according to availability of commodities and the prices of such commodities. Some farmers look for private traders willing to buy commodities in bulk and possibly are willing to go to the farm to collect the products themselves. Farmers who are not members of Ziyaya club sometimes get information from friends who are members of the project.

In Bvumbwe, ICT-based interventions have managed to assist some farmers to come together and bid with one voice. The farmers have been able to fire warning shots to buyers that they can migrate to other buyers if conditions do not improve. In the process the farmers are able to salvage a good deal. Some general achievements of the project include being able to link farmers to markets; teaching farmers how to use ICT – based interventions such as mobile phones to harness agricultural markets; disseminating relevant and timely market information across the nation using a number of methods such as websites, SMS and the radio, and being able to participate in international fairs.

#### **4.1.2 Performance and achievements of FNSJTF – MOAFS-MIS**

There has been no policy or socio-political environment that has affected the performance of MOAFS market information service. Actually the project tends to be more successful in districts such as Dedza, Rumphi, Karonga, Mzimba, Zomba, Phalombe and Nsanje. The success in these areas is due to funds from other projects such as MACE, IRLAD and Farm Input Diversification Program (FIDP). The notable achievement of the FNSJTF project is that it was able to produce reports on time from the information that was initially just shelved. The project also managed to recruit permanent staff. Stakeholders are able to use the price information generated but also the project managed to coordinate bids and offers thereby providing link between sellers and buyers. There has been development of data base in the ministry of agriculture where one can access various types of information from different check points. The development of a website has been another great success of the project. The project has also managed to train a number of enumerators across the country. A market map has also been developed and one can easily trace commodities across different markets in the country.

#### **4.2 Challenges posed by operational environment**

MACE and FNSJTF projects operate under varying environments and this has had great impact on their performances and largely brought several challenges.

##### **4.2.1 Major challenges**

Some government policies such as export ban or price controls or interventions on crops such as maize as happened in 2008 may be good for national food security but have a negative effect on international trade. The price controls affect local traders because they operate at a loss and may fail to service remote areas. MACE has not performed equally well across areas in terms of uptake. The main reason is that most farmers expected MACE to be a procuring entity rather than a mere provider of market information. The project is also not doing any value addition to products which would have helped to attract many farmers and traders.

Funding of MACE activities is another major challenge. MACE has failed to expand its services to new areas due to limited financial support and the intervention has even closed most of the existing Market Resource Centres across the country due to lack of funding. Another important challenge is that some farming areas have poor road network so it is not easy for traders to go there. Transport broker service does not exist in Malawi and MACE tried to develop one but never succeeded. Transporters were more interested in inputs than in agricultural produce.

Product quality poses another challenge for the success of ICT-based MIS. Quality and quantity from smallholder farmers are quite variable. On the other hand, buyers do not specify grades they want. The Malawi Bureau of Standards has standards for agricultural products but they do not enforce them.

The paper has also noted other site specific challenges to the success of MACE. For example at Lobi Market Resource Centre (MRC) price collection was problematic because some traders refused to have their products weighed. Some farmers reported demanding snacks and drinks during training. It has also been noted that each MRC is given a target of US2million worth of bids and offers per quarter. This is a tall order considering that often times, transport, internet and airtime are limited. As of 2010 Lobi was handling 5 bids and offers per week usually from traders who come to visit MACE offices. As of third quarter of 2011 Lobi had closed due to high operational costs they couldn't finance. The officers expressed concern over the closure as more and more farmers kept on coming seeking for the services.

At Kasungu MRC, which was seemingly a struggling MRC, the Operations Manager narrated a number of problems. The MRC has no internet and uses very old and small boards that are not easily identified from a distance. Before the franchise, the MRC under MACE had an arrangement with Action Against Hunger NGO which had 10 seed banks. Action Against Hunger was giving certified soy bean seed to farmers for multiplication and the NGO was using MACE to source markets for the farmers. Discussions with 24 of the 194 farmers from Chisemphe Seed Bank revealed that the farmers did not get good service. Action Against Hunger planned to be in Kasungu for two years but due to serious financial problems the NGO left the area in September 2009. The MRC failed to find a market for the farmers. During discussions, farmers noted that they had not seen any benefit from MACE office due to lack of markets. They also explained that they had not used SMS and radio programs to access market information. The farmers tried NASFAM but nothing happened and they were still keeping the soy beans at the time of the study visit. Other problems the farmers encountered include pests, diseases, birds, transport to warehouse and choice of crops to grow.

In Mwanza a similar scenario was noted. When farmers were visited they reported that MACE staff did train them and promised to give them cell phones for market information purposes but since the training no MACE staff had visited the area. The farmers also indicated that they do not listen to the radio programme and have no access to the boards where bids and offers are displayed. Discussions with MACE staff in the area revealed that they have serious financial and transportation problems. They had had no fuel allocation and even salaries for several months. At times, salaries of employees are slashed by half so that the project survives difficult times. Field officers also collaborated with farmers. They noted that very few farmers make inquiries about the service because the majority of the people in Mwanza do not take farming as a business. The introduction of a farm business school in the district is expected to change this attitude.

Although there are some users in Mwanza, progress is being hampered by poor infrastructure. It is very difficult to use mobile phones away from the district headquarters. In addition, most places are inaccessible. As a result, most people do not access market information and they end up selling their products very cheaply. However, some traders and government institutions use the market information to source products. Very poor farmers in villages fail to access the information because they cannot afford to buy the necessary equipment such as radios, mobile phones and airtime.

Although users pay 5% commission for trade transactions, the money is not enough to sustain the project activities. The only hope is government intervention to save the project. There is also a tendency in Mwaza for Government institutions to pay very late for products they take from farmers. This cripples business operations. This also forces farmers to prefer to sell cheaply to vendors who pay cash. This reduces farmer income. Another major challenge disclosed by Mwaza MACE Office staff was that they often are unable to find markets for most of the commodities, which is a typical failure to link farmers to markets. In areas where the project is doing well, there is uncertainty about the project itself. There are instances when buyers and sellers fail to agree on a price and if this happens often the project is threatened because it would be unable to salvage anything at the end of the day and disorder would resurface.

In Bvumbwe, there are times when milk producers prefer to sell their milk to vendors when they fail to agree on a price with companies such as Dairiboard and Suncrest. The project gets nothing when that happens. Another challenge in Bvumbwe is power interruptions.

There were times when the cooperative threw away about 3000 litres of milk because it had gone bad. Farmers find the use of mobile phones good but very expensive. They fail to buy airtime to transact business. In Chitera area of Chiradzulu district, MACE did train farmers on how to access markets but failed to link them to buyers. Some individuals within MACE were reported to have gone to the area privately to buy commodities and sell them elsewhere. When such buyers left, the farmers were stranded and resorted to selling their products along the Blantyre-Zomba highway. This is a very unpredictable market where the farmers sell their vegetables very cheaply due to excess supply.

With regards to the Ministry of Agriculture and Food Security MIS the main challenge now is mobility or transport, equipment for photocopying and funding for project activities.

#### **4.2.2 Possible risks associated with market information systems in Malawi**

There are several risks, which may affect the ICT-based MIS projects in Malawi. First, the projects often face delays in securing funds. The bulk of the finances are sourced from cooperating partners and donors often delay to disburse funds. Second, government is another source of project finance. There is need for strong political will on the part of the government to make sure that the 10 percent allocation of the budget to the agricultural sector also goes to the ICT-based MIS projects. Third, there is limited private sector involvement in the projects. Effort should be made to ensure that the private sector is motivated to take part in the market information systems. Fourth, investment in agriculture is function of the state of the economy. Macroeconomic factors such as interest rates, inflation and exchange rate are crucial inducements for the private sector to invest. Fifth, drought is an important risk in agricultural production and this does affect what goes to the market.

#### **5.0 Conclusion and Recommendations**

Both MACE and FNSJTF projects have made some contribution to agricultural marketing in Malawi. The contribution has been through the provision of market information and in some instances, agronomic information. The technology used in both projects is internet, mobile and ground phones as well as use of radio and display boards as additional methods of disseminating market information. The main beneficiaries are smallholder farmers but traders, companies, NGOs, government, donors and individuals also benefit from the information collected and disseminated.

The major challenge to the ICT-based projects is agricultural policy. The minimum price policy and the quantitative limit on export quantities have had a major impact on trading activities, especially international trade and profitability of the businesses. Another challenge is lack of financing. In certain cases, activities were drastically scaled down due to financial problems. There is also very little value addition to agricultural production in Malawi. In addition, most smallholder farmers sell their products ungraded. This forces the farmers to get lower prices on the market.

The paper therefore recommended that: (i) Government should be consulting all stakeholders and carrying out thorough analysis before changing agricultural pricing policies. This would help stakeholders plan properly to avoid dislocation of their businesses; (ii) Service providers should work toward development of viable business models. There is overdependence on donor support in both projects. Projects should develop clear exit strategies from donor support; (iii) Value addition, standardization and grading should be implemented in collaboration with Malawi Bureau of Standards. This would make price quotation easy.

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