A REFLECTION BRIEF

ON THE ADOPTION OF A TECHNOLOGY

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AICC
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TABLE OF CONTENTS

1.0 INTRODUCTION

For the past years, Malawi has been importing most horticultural produce from the neighboring countries. This has been the case because the production in the country is usually very low to carter for the growing population demand on the market. Currently, the production of horticulture crops solely depends on the smallholder farmers who mostly have small land holding capacity and limited resources. Consequently, they depend on family labor which in turn results in low production (Chirwa, 2008).

The Ministry of Agriculture has in almost each Extension planning area a horticulture specialist whose main role is to give the required services to the smallholder farmers. Although government extension workers work with these farmers, research attest to the fact that they do not deliver satisfactorily because of the many hiccups that they meet along the way. For example, in most cases, they are not provided with the required resources for them to work effectively. The introduction of Non Governmental organization into the country has eased some work which could not be done by government departments alone. These NGOs have the capability to work with the farmers in the rural areas owing to the sufficient resources that they command. The drive towards diversification through horticulture production has in many instances seen the introduction of different technologies by the NGOs. These technologies are in most cases supported technically by the extension workers. The results on adoption of these technologies has been mixed. For some technologies, adoption has been high while for others it has been observably low. Yet for others, there is de-adoption along the way. In either cases, a few lessons are emerging which if properly internalized can be pivotal in agricultural endeavors and interventions that hinge on adoption of technologies. The adoption of technologies in Malawi is a highly debated topic with more inconclusive answers. However, a few reflections are made below with an illustrative case study of Mndolera EPA where AICC has been implementing a project called The Commercial Agribusiness for Sustainable Horticulture (CASH). this project is being implemented in Mndolera Extension planning area which is located to the west of Dowa district. This project is targeting 2500 farmers to make a decision to invest in the micro investment model which uses a drip irrigation technology. The farmers are convinced to buy the micro investment kit at an affordable price of 9000.00. the MI kit comprises of a drip pipe, fertilizer and seeds or seedlings the success of this technology lies on its simplicity as it is labor saving technology, in addition it is considered to be profitable as high yields are produced with lower cost of production.

2 .0 ADOPTION PROCESS OF A TECHNOLOGY

For a technology to be implemented in a certain area, it has to be accepted. The acceptance of a technology depends on many factors ranging from the objective of the technology which implies whether the technology is simple to use and it is profitable. However, some adopt technology because they want to try out new things.

2.1 OBJECTIVE OF THE TECHNOLOGY

It is very important to clearly explain the objective of technology in a way that it should be able to attract the people to accept and adopt. Almost all the smallholder farmers in the rural areas lack basic needs (food, shelter, clothing), therefore the technology that is coming into their area should be able to address the issues of hunger and poverty. The MI concept has had a great impact on the general well being of the smallholder farmers. It has provided to them an affordable and descent micro-investment technology that encompasses modern agricultural based technology which consists of a drip pipe, fertilizer, seeds and chemicals.

Farmers have made a decision to adopt the concept because of its efficient use of water on a small piece of land while maximizing returns on production. This has resulted in a huge and significant boost to their productivity to the level where some farmers are able to reinvest in the MI model for further growth.

2.2. ROLE MODELS

Experience has shown that most farmers believe in their lead farmers, government extension workers, group leaders and other influential people within the society. These people tend to be the role models of the villages because most of them are successful people than the rest of the villagers, therefore if they open the floor by accepting the technology the rest of the people follow suit.This is in line with the experience the agronomists have had throughout the implementation of the project, when the people in question buy the kit the rest of the farmers were also buying the kits. For example, in Nyengere village three sensitization meetings were conducted but no one bought the kits, at the fourth meeting a group village head bought one kit and the majority of farmer did the same. This becomes a disadvantage when influential people are not interested, which means people of that

community will not adopt the technology.

Working with chiefs, government extension workers and lead farmers will also ensure the sustainability of the technology in the catchment area as these people are permanent dwellers.

2.3 MANAGEMENT OF HANDOUTS

Adoption of the technology means acceptance and usage of the given technology for the purpose intended. It has been observed that many technologies that are based on giving out free services, the people accept them but do not yield the intended objectives. Unlike the technologies that will enable farmers to pay an affordable amount of money. This is due to the fact that when something is paid for, it gives ownership and consequently the owner would want to see profits coming from his/her initial investment hence the beneficiaries work to the end inorder for them to see the results and see whether the objectives of the technology have been met.

2.4 LEVEL OF SOPHISTICATION

Most smallholder farmers are illiterate, therefore technology that is being transferred to such people should not be very difficult to use. When a technology is very sophisticated in nature, people tend to shun away from accepting it. They like technologies that are very simple, that which can be used by all and the ones that will not waste their time. The MI technology has proved to be simple because farmers just pour water in a bucket and leave it to drip on the plants while they go and do other things. Most farmers have adopted MI technology because it can be used by everyone ranging from youths to the elderly and therefore it has been observed that the acceptance of the technology in an area depends on its simplicity.

2.5 WOMEN PARTICIPATION

Issues of gender equality and equity are being stressed in the country this has been the case because earlier it was believed that women cannot do anything other than nursing babies and being in the kitchen. In this regards there has been awareness campaigns throughout the country to sensitize women that they can equally take part in developments that were at first always meant for men. This has changed peoples mindset in the way that nowadays both gender work

together. Technologies that do not promote women participation tend to be unwanted. The MI concept encourages equal participation by both men and women and this has had a positive impact on the adoption rate.

2.6 MARKET ACCESS

Marketing has remained a major problem of horticulture produce in Malawi. This has been the case because policies have not been put in place to support these producers as such the marketing of these perishables is done anyhow without considering how much the producer has put it as an initial capital. Things have gotten worse because of the middle men or vendors who buy the produce from the farmers at a very low price because these farmers have no say what they need at the end of the day is to put food on their tables. Producers face considerable marketing problems ranging from high transportation costs and lack of storage equipment; as horticultural products are perishable in nature, and low market prices as supply of produce continuously exceed demand during peak seasons. Initially, smallholder farmers are unable to access preferred markets due to lack of market information which represents a significant impediment to market access. At the end many farmers do not realize much profits because they sell their produce without having knowledge on how they can reach good and reliable markets.

It is in this view that when the technologies that involve production are being transferred to farmers, much emphasis should be put on market, this issue has to come out clear so that these farmers in the rural areas should have continued interest in using the technology.

2.7 DE-ADOPTION

Farmers involvement in the technology depends on the frequent visitation of the implimenters to their site and continual supervision rendered to them. This is the case because it gives them hope and encouragement that they are going to go forward. Apparently over 60% of the early adopters of the MI model have withdrawn from the project because they think they have been left behind because they were not being visited as frequently as they used to. So far action points have been put in place that will help to bring back these farmers.

2.8 EQUIPMENT

The materials used in the technology are supposed to be durable especially those that have been acquired on cash basis. When the implimenters bring unreliable and durable materials to be used by farmers, it puts off the farmers interest to continue using the technology. The drip pipes which were procured at the beginning of the project were supposed to be utilized for more than two seasons, but this was not the case because the kits were not of good quality as such some were blocked while others damaged in the course of using them. This development lead to farmers stopping practicing the technology and some even produced crops of poor quality due to pipe blockage.

2.9 PEST AND DISEASE PREVALENCE

This is also a major challenge to farmers who have decided to adopt a technology that involves production of crops. This has been the case because most pathogens have mutated, i.e they have developed traits that enables them to tolerate some chemicals that are currently being used by farmers. However some organizations produce reliable chemicals that have the ability to destroy these pathogens but the problem is they are expensive to be accessed by the rural farmers.

3.0 WAY FORWARD

The afore-mentioned challenges can only be addressed if good practices are put in place. Below are some of the issues to look into.

3.1 SOIL ANALYSIS

Malawi has different types of soil properties which differ in nutrient contents. These variations range from area to area. This becomes an issue when a certain technology has worked in one area and fails in another area while given the same conditions. This can also affect the crop performance i.e. uneven performance of crop production. Therefore, soil analysis is required to measure the type and amount of nutrients which are available in the soils thus helps to determine the

inputs required for efficient and economic production and in turn helps the implimenters to deduce which and how much a certain nutrient is required for supplementation.

3.2 USE OF AFFORDABLE PESTICIDES

Pests and diseases are a major cause of low production in the cultivation of horticulture crops since most of the chemicals are very expensive on the market. A successful horticulture farmer has to be aware of this problem before starting the business. Most farmers in the rural area are very much willing to produce but the problem comes on how to control pests and diseases, the cannot afford to buy chemicals because they are very expensive. However some chemical producing organization such as Osho are working on packaging

the chemicals in small quantities to be accessed by all farmers. In addition, the is need to teach the farmers on the importance of going organic for them to produce crops that are chemical-free as well as to reduce the cost of buying chemicals. The organic pesticides that the farmers are currently using under MI production are the locally available plants and other materials that are mixed to make a pesticide for a certain pest e.g. neem, pepper, Tryphosia vugelli and other plants.

3.3 EXIT PARTNERS

Every project that comes with a technology has starting phase and ending phase but the adopters have to continue using the technology. To ensure sustainability of the technology it is of paramount importance that the implimenters should be working with other stake holders such agrodealers, government extension workers and others. Mutual relationship among these stakeholders ensures sustainability of the project.

Working with exist partners in the MI concept has made work easier in as far as the sustainable aspect of the project is concerned. Mostly Government extension workers and the implimenters work as a team such that when the field worker is carrying out activities on the other side of the section, the extension worker is also doing the job in the other area, this gives some farmers the zeal to work hard. Working hand in hand with the chemical supplying companies e.g Osho and FOL has made farmers afford to buy the chemicals as well as accessing them within their vicinity because of the presence of the agro-dealers.

3.4 INNOVATIONS

So far some techniques have been developed for the

farmers to use in order to have quality products on the market. The zero cooling chamber is one of the innovations which is simple to be used by smallholder farmers since it uses locally available resources. This chamber provides a cooling environment which can keep the produce for 3 to 5 days. To solve the issues of Post-harvest losses due poor transportation facilities, there is a need for the provision of vans which have cooling systems so that farmers can be able to sell their produce in far places without compromising the quality.

3.5 VALUE ADDITION

Teaching farmers about value addition can help them realize some more profits as the products that have undergone value addition fetch high prices on the market. Adding value to the products can help in reducing post-harvest losses. When the farmers are not satisfied with the price on the market, they can grade, sort, repack, dry or process the produce and sell at a higher price. Therefore value addition help farmers to reach good market and at the end they can be able to easily export the produce to other countries.

4 .0 CONCLUSION

As agriculture remains to be the backbone of the economy of Malawi, the emphasis should be on how the production of high-value short life food crops can be cultivated throughout the year for future and sustainable economic growth. Acute lack of water, poverty and small landholding capacity by producers (smallholder farmers) are the factors that can limit them from accomplishing the fore mentioned goal. The use of appropriate technology like the MI technology should go far and beyond other districts of Malawi to achieve the long-awaited sustainable goals number 1,2,6,8,13 and 17.

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