

# Capacity Building of Extension Agents for Sustainable Dissemination of Agricultural Information and Technologies in Developing Countries

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**Abstract**—Farmers are in need of regular and relevant information relating to new technologies. Production of extension materials has been found to be useful in facilitating the process. Extension materials help to provide information to reach large numbers of farmers quickly and economically. However, as good as extension materials are, previous materials produced are not used by farmers. The reasons for this include lack of involvement of farmers in the production of the extension materials, most of the extension materials are not relevant to the farmers' environments, the agricultural extension agents lack capacity to prepare the materials, and many extension agents lack commitment. These problems led to this innovative capacity building of extension agents. This innovative approach involves five stages. The first stage is the diagnostic survey of farmers' environment to collect useful information. The second stage is the development and production of draft extension materials. The third stage is the field testing and evaluation of draft materials by the same farmers that were involved at the diagnostic stage. The fourth stage is the revision of the draft extension materials by incorporating suggestions from farmers. The fifth stage is the action plans. This process improves the capacity of agricultural extension agents in the preparation of extension materials and also promotes engagement of farmers and beneficiaries in the process. The process also makes farmers assume some level of ownership of the exercise and the extension materials.

**Keywords**—Capacity building, dissemination, extension agents, information/technologies.

## I. INTRODUCTION

LACK of communication between research institutes, extension service agencies and the farmers has also been a major factor limiting agricultural production in many developing countries [3]. Farmers are in need of regular and relevant information relating to new techniques and technologies that would help them increase their agricultural productivity and increase income. Rural people require information on inputs supply, new technologies, on pest and diseases, credit and market prices.

Farmers adopt alternative technologies only when they are aware of and are able to gain good understanding of these available alternatives and are motivated not only to try them out but also try these alternatives correctly. This process of exchange and sharing of ideas, information and technologies is

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generally referred to as communication which, [1] described as a key process in information dissemination and requires amongst others, inputs, timely and systematic transmission of useful and relevant information aimed at behavioural change.

Production of extension materials has been found to be useful in facilitating the process of information exchange and technology transfer not only to address particular agricultural production problems but also to make positive changes in farmer behaviour.

According to [5], extension materials help to provide information to reach large numbers of farmers quickly and economically. They are useful as teaching aids especially when used as supplements to other extension teaching methods.

Agricultural Extension is described as being concerned with improving the farmer's knowledge, skills and attitude in order to make them more productive members of the society [2]. Reference [4] stressed that the effective extension worker must not only have at their command, a variety of tools and methods to do their job, they must also know where to use them. This is because the extension worker performs the role of disseminating agricultural information to farmers. Accordingly, the more the variety of channels used in introducing new ideas/techniques, the better the chances of acceptance. Based on this situation, the role of agricultural extension services in providing timely and appropriate information on important agricultural issues to farmers is of great significance towards achieving increased sustainable agricultural production.

A variety of extension materials are commonly in use for providing farmers with technical information or for directing them to understand and undertake various kinds of agricultural production and post-harvest production activities. These materials include Posters, Leaflets, Flipcharts, Newsletters, Folders, Fact sheets, Flashcards, Pictograms, Slideshows, Exhibits, Booklets, Audio CDs, Radio broadcasts, Videotapes, Video CDs, and Television broadcasts.

However, the extension agents who are expected to prepare and use these extension materials to disseminate information and technologies to farmers and end users lack capacity to do so and as a result many of the technologies developed for farmers do not get to the smallholders which has been a major constraint to the use of agricultural research results for sustainable agricultural production.

Studies have shown that there is gross under-utilization of the outputs of agricultural research and most extension

materials produced to disseminate information and technologies are not used by farmers. A number of factors have been found to be responsible to this which includes the following:

#### *A. Lack of Involvement of Farmers*

Many of the extension materials produced are done outside the farmers' domain and they were never involved or consulted in the production and as a result they do not use these materials.

#### *B. Relevance to Farmers Needs*

Since the producers of extension materials do not involve the farmers, most of the extension materials produced are sometimes not relevant to the farmers' environments and needs and therefore refuse to use them..

#### *C. The Capacity of Extension Agents to Produce Materials*

Many extension agents lack the capacity to produce extension materials and therefore relied on materials brought from other places to disseminate information and technologies to farmers.

#### *D. Commitment of Extension Agents*

The work of extension agents will be more effective if they prepare extension materials themselves but however, most of them do not feel it is their responsibility for producing extension materials.

Based on this problems or deficiencies the Technical Centre for Agricultural and Rural Cooperation (CTA), Wageningen, in The Netherlands funded the capacity building of extension agents in the development and preparation of extension materials in some countries of sub-Saharan Africa. The main objective of the capacity building was to build the capacity of extension agents in effective dissemination and communication of agricultural information and technologies to farming communities through the preparation of extension materials.

Therefore, sharing with other colleagues from different parts of the world this innovative capacity building process which has been found to improve the knowledge and skills of extension agents in development and preparation of extension materials for disseminating information and technologies to famers is the aim of this paper.

## II. THE INNOVATIVE CAPACITY BUILDING PROCESS

The capacity building model/procedure involves five stages:

### *A. Diagnostic Survey Stage*

The extension agents are exposed to the process of a diagnostic survey in the class in the first day of the training course which involves participatory rural appraisal methods. In the second day of the course participants will go to the farmers' fields to carry out the characterization of the farmers' environment. This is to identify production problems, their information needs and solicit for the types of extension materials preferred by the farmers and the topics on which such materials should be produced.

This is usually done with participants in working groups with different farmer groups for effectiveness. Extension agents will collect information on different aspect of their production such as farming practices, major constraints, and other relevant information. The advantage of this is that extension materials produced will be relevant to the environment in which it is to be used because the farmers are involved in the identification of their production constraints and extension materials they need that can solve the constraints.

### *B. Production of Extension Materials Stage*

This is the stage where the extension agents will analyze the identified problems and decide on extension materials to produce to solve such problems. After each group has decided on the extension materials to be produced, each group presents this at the plenary session for comments and subsequent adjustments by each group. They will engage some experts such as artists and desk-top publishing specialist who will work with them in the production of extension materials in the class room. This enables the extension agents to lay hands-on-practice themselves in the preparation of the extension materials in response to the needs of the target farmers. The materials produced at this stage are just drafts.

### *C. Evaluation of the Draft Extension Materials Stage*

In this stage, the training participants take the extension materials produced to the same target farmer groups that were involved in diagnostic survey at the beginning of the course. This is to enable the farmers critique the extension materials and make necessary suggestions for the improvement of the materials. This process provides opportunity for famers to introduce indigenous knowledge on production and processing systems to enrich the extension materials. This process also provides the opportunity for farmers to have a sense of involvement in the production of extension materials that they can use. There are basic evaluation criteria that will be involved which they will want the farmers to comment on. These include clarity, colour combination, language illustration among others.

### *D. Revision of the Draft Extension Materials Stage*

This is the stage when the participants/extension agents will incorporate the necessary suggestions by the farmers. The extension materials will be finalized and produced. The finalized extension materials are printed and distributed to the participating farmers and other farmers in the locality.

### *E. Action Plans Stage*

The final stage of the capacity building involves the preparation of the action plans by the participants. The objective of this is to make participants show how they want to implement what they have learnt back home. This will also allow participants to be committed to the production of extension materials rather than waiting for those prepared from other places.

### III. CONCLUSION

This process of capacity building of extension agents has shown to promote the engagement of farmers and beneficiaries in the development of and production of locally relevant and useful agricultural information and technologies for the sustainable dissemination of outputs of agricultural research.

The participatory approach of involving farmers in the production of extension materials ensures that the materials produced are not only relevant to the identified needs of the farmers, but also farmers can assume some level of ownership of the exercise and the extension materials. In this way, they will readily accept the materials and use them gainfully.

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