

2

Farmers' on-farm participatory research: experiences in Ethiopia

Ejigu Jonfa

• Introduction

FARM Africa is a non-governmental organisation (NGO) registered as a charity in Britain. One of its four Ethiopian projects is the Farmers' Research Project. This has been conducting projects in North Omo, Southern Ethiopia, since 1991. The project's aim is to raise the incomes of resource poor households, by improving agricultural technology. Farmers Participatory Research (FPR) is the approach adopted by the project.

The Farmers' Research Project attempts to improve the institutional environment and level of knowledge about participatory research. It also aims to enhance the skills of the staff from government organisations (GOs) and NGOs in undertaking FPR. A number of project activities, such as studies and on-farm trials, are carried out to demonstrate and disseminate the approach.

Agricultural research, extension and development staff are trained in participatory approaches. This enables them to incorporate FPR into their own work programmes. By doing so, they can better participate with the farming community in the diagnosis, planning and implementation, as well as in the monitoring and evaluation of their projects. Thus, the project has played a facilitating role, enabling partner organisations to better assist farmers.

This paper presents the experiences and lessons obtained in conducting on-farm participatory research in the project area. It also highlights how PRA techniques are used in the on-farm trials programme.

• Farmer participatory research

Farmer participation in research is not a new concept. In Ethiopia, as in other parts of the world, experience has shown that technologies which are developed on research stations, are often not adopted by farmers. This is because the technologies do not meet farmers' needs or recognise their constraints. Farming systems research has helped develop technologies that are more appropriate to small farmers, because farmers themselves actively participate in the generation and evaluation of technology.

For FARM-Africa, FPR is agricultural research in which farmers take part in making decisions about the research at all, or nearly all, its stages. This is considered as a development of farming systems research because more emphasis is placed on decision making by farmers. FPR uses existing research and information networks, incorporates farmers' knowledge, and helps farmers to undertake research.

• Experiences and methodology

One of the ways by which farmer participation is achieved is through conducting on-farm trials. These are discussed here according to the different research stages: diagnosis, planning, implementation, and evaluation.

• Diagnosis

A representative Peasant Association is selected in a given *wereda* (district) to conduct a diagnostic survey. This explores the farming system and identifies constraints to production. In most cases the 'representative' peasant association is the peasant association that represents a given agro-ecological zone (highland or lowland) in the *wereda*. The

peasant association is commonly selected in collaboration with other organisations operating in the area.

Site selection and methodology

Selection of the peasant association raises a number of questions: to what extent does the selected Peasant Association represent the agro-ecological zone under question? What are the relevant factors each in agro-ecological setting? In most cases information is not readily available and it is the local people's knowledge which plays the leading role in the selection of the study area.

At wereda level, the information available on the distribution of the Peasant Associations is assessed and discussed with farmers. The discussion encompasses the local category of the Peasant Associations, with respect to agroecology, and their views on the distribution of the peasant associations within these categories. Ultimately, a peasant association is chosen by the farmers which represents most, if not all, of the peasant associations.

For conducting diagnostic surveys, Participatory Rural Appraisal (PRA) techniques are used. Working with the chosen Peasant Association, the Farmers' Research Project staff make a visit to meet the community leaders, present the survey's objectives, set up an activity calendar and make an overview of the area.

The project staff and community leaders, together with the collaborating organisations, identify members of the community who will be involved in the survey. Other farmers are also met in the course of survey, in order to have representative groups (by age, gender and socio-economic settings). For the diagnostic survey, a multidisciplinary and multi institutional team, is formed. During the survey the members of this team facilitate and the farmers play the leading role.

Follow-up

After conducting the survey, reports are produced to disseminate the findings of the study. The report is also used to plan follow up action and on-farm trials.

For this project, the on-farm trial programme is driven by farmers interest. Thus, the subjects for research are the main problems identified during diagnostic surveys. The problems are tackled in the order of priority stated by farmers during in the survey. The prioritisation of problems was made by a large, mixed group of farmers, and, in most cases, there is consensus in their stated priorities.

Problems whose solutions can be addressed through research became the focus of the trials, provided there is sufficient evidence to initiate research. Sometimes, there is insufficient evidence to plan on-farm research. For instance, 'declining soil fertility' is one of the most important problems reported in a number of diagnostic surveys conducted in Wolaita (northern part of North Omo). Alley cropping and copper fertiliser trials were conducted in Kindo Koysa, part of Wolaita, to find a solution and investigate the soil fertility. However, the results from the trials did not show any effect in addressing the problem, or finding a solution.

Later on, it was realised that the evidence available of declining soil fertility (and its causes) was not sufficient to develop a solution. Hence, an additional in-depth study was carried out with increased farmers involvement. Its aim was to investigate the problem and its causes and developing alternative solutions. This is known as the 'Nutrient Cycling Project', a topical PRA, which was initiated within the framework of the Farmers' Research Project.

Problems such as cotton pests, sweet potato butterfly pest, shortage of fuel wood, shortage of livestock feed and erratic rainfall (drought) are those problems for which on-farm trials were initiated. The PRA techniques assisted an improved understanding of the farming systems and diagnosis of the problems. They also helped plan the on-farm research with farmer participation. Furthermore, better collaboration was attained and a collegiate relationship established in the subsequent on-farm research. The PRA process changed the attitude of the outsiders and enabled them to appreciate of indigenous knowledge of farmers.

The diagnosis stage helped identify farmers who could be involved in the follow up on-farm research. This has the advantage that they have already started the process and have directed the follow up action.

• **Planning on-farm trials**

The farmers are selected from the peasant associations where the diagnostic survey was conducted and from other peasant associations, which are found in similar situations. The farmers are representatives of different or same sex and age groups, depending on the type and objective of the trials. For example, in cotton pest and variety trials, a total of thirty five farmers are involved. Of these only six are female headed households. This is because cotton production is mainly the work of men in the area. By contrast, all of the people participating in the fuel saving stove trials were female. The problem of fuelwood shortage primarily affects women.

Once the farmers have been selected, those problems which can be addressed through research are further discussed. Group meetings are found to be a good way to learn more about the problem and possible solutions. Relevant research findings, specialists and literature are consulted to widen the range of possible solutions. Alternative solutions are discussed with farmers, as well as the type of trial to be carried out and its objectives. Finally, an operational calendar is set up, and agreement made on who is responsible for which activity.

• **Implementation of the on-farm trials**

In a group meeting, experimental methodologies, including the design, treatments, and data to be collected, are discussed thoroughly. Moreover, the importance of blocking, replication, as well as field variabilities, are carefully considered when selecting sites. These issues are discussed again during evaluation. Methodological discussions are held in the fields. This is not only practical but also helps raise the level of farmers understanding.

For agricultural trials, the necessary inputs are distributed and site selection, layout and planting is undertaken. The trial is monitored, and observations are made primarily by farmers, but also by project staff. To improve the interaction between participating farmers and outsiders, cross visits are organised. Farmers visit each others trials and share their experiences with project staff.

• **Evaluation of the on-farm trials**

The main emphasis is on farmers' assessments. Evaluation of the trial starts from the time of planting. It involves individual farmer's observations and discussion during cross visits. Farmers' preferences are identified based on their own criteria. These are listed at the time of evaluation, especially in group meetings. The treatments are then ranked and/or scored against each criterion.

For example, cotton pest and variety trials were conducted for three consecutive years and each year the trials were evaluated. The three years' evaluations indicate that similar criteria are consistently used. Furthermore, farmers have several selection criteria, which are mainly associated with the quality and quantity of yield. Interestingly, the evaluation indicates that farmers' selection criteria do not lead to the selection of a single treatment. Rather, they select a range of options to suit their diverse situations.

In most of the on-farm trials, farmer evaluations were not only made by the trial farmers. The wives or husbands of the trial farmers also take part.

For example, in the cotton variety and pest control trials, farmers who were directly attached to the trials made the evaluation with respect to treatment performance. The women (wives), were also provided with a small amount of seed cotton from each variety for spinning. They made their evaluation based on the use of cotton within the home. The women indicated additional criteria to be considered, associated with the quality, strength and ease or difficulty of use for ginning.

In the case of fuel saving trials, the evaluation was conducted entirely by women as the use of fuelwood lies wholly within their domain.

However, the evaluation included those women who were directly involved and their female neighbours.

As part of the evaluation, quantitative data was collected and statistically analysed. An attempt was made to correlate the results of farmers' assessments with those of statistical analyses. Some of the statistical analyses indicate no significant differences between different treatment plots. This was the case in the cotton variety and pest control trial: statistical analysis suggests no significant differences between plots. However, farmers had already made their decision to multiply and extend the varieties grown in their chosen or preferred plots. Clearly the farmers could distinguish differences between different plots based on their criteria for evaluation.

• **Conclusions**

Approaches such as, mutual respect of both parties as experts, close contact, repeated discussion, meetings and cross visits, play an important role in improving the level of understanding (especially the trial design) and participation by farmers. PRA methods, used at different stages of the on-farm trials, have enabled the farmers to develop a feeling of ownership of the trials. Of the methods employed during evaluation, ranking and scoring seem to be the most useful tools.

The experiences of the farmer participatory research aroused better participation by farmers and researchers (outsiders) in the process of undertaking research. The approaches and methodologies are being practised with a view to continue improving them through time.

- | |
|---|
| <ul style="list-style-type: none">• Ejigu Jonfa, Senior Agronomist, FARM Africa, PO Box 5746, Addis Ababa, Ethiopia. |
|---|