ON-FARM RESEARCH IN RWANDA

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ON-FARM TRIALS

On-farm testing and research has been effectively used in all CRSP countries. This approach can risk the credibility of its proponents if the technology used is ineffective, unavailable to the farmers, or otherwise inappropriate. On-farm testing provides a realistic method of evaluating technologies developed at research stations before their wide dissemination. For instance, the organic fertilizer input rates developed at the research station in Rwanda were found in on-farm testing to be too high for rural ponds. Farmers’ ponds were more shallow than station ponds and their homes were too distant from their ponds for them to effectively observe low dissolved oxygen episodes (Rurangwa et al., 1992).

In Honduras, farmers who participated in CRSP research were allowed a choice of treatments (Teichert-Coddington et al., 1993). In Rwanda, however, all farmers were required to apply the same treatments. Rwandan farmers’ ponds at different elevations were used as an extension of the research station. The standard input regime was based on a survey of organic inputs available to all farmers in the study. Thus, the Rwanda on-farm experiments were research-oriented rather than extension-oriented. While the purpose of on-farm trials is often assumed to be extension or testing of research results, the Rwanda experience includes the role of general research.

VISITS TO FARMS BY RESEARCHERS

When researchers act as extension agents and visit the trial farms, the extension service should participate or at least be informed of such meetings. With small target audiences a visit with prior notification will be more efficient in terms of opportunity to extension service personnel. Hence, collaboration with extension services has been a central aspect of on-farm visits in all CRSP collaborating countries.

Farm visits provide an effective means of observing actual producer practices and situations, even though the impact of technology transfer might be limited. Through direct exposure to the conditions in which the farmer lives and conducts aquaculture, a researcher can evaluate the ponds, farm practices, and the general environment. Through one-on-one communication, researchers can often evaluate whether new methodologies will be adopted by farmers. Researchers and the farmers should ideally speak the same language because inexperienced translators may not effectively relay important information the farmer is communicating.
Recommendations From CRSP Research

1. Participant training is necessary for effective on-farm trials. During the training activity farmer and researcher responsibilities should be explained and expressed in an informal contract.

2. Depending on the purposes of the trials, it is often best if the farmers have a choice of treatments to be assessed.

3. Should farmers be compensated for their participation in on-farm trials? Compensation is discouraged by most workers, but it is considered appropriate in certain circumstances. Thompson and Thompson (1990), for instance, recommended that compensation was appropriate for additional time required to manage trial plots and time committed to organizational meetings. Farmers in Honduras and Thailand were not compensated; in Rwanda, however, farmers were compensated for their time contributed to the study. Rwandan farmers often waited several hours on pre-arranged days for pond sampling and for review of their data records. The form of compensation varied. Chemical fertilizers were pre-weighed by the researchers and provided to the farmers free of charge. This practice removed a source of error in the experiment and allowed farmers without available cash to participate. The additional cash farmers received from fish sales following the first trials, however, was sufficient for them to purchase fertilizers for the second production trial.

4. Dependency of farmers on researchers should be avoided in the areas of compensation, technology, and future advisement. This is a challenge in countries where farmers have a very restricted cash flow. In Rwanda, researchers purchased from farmers the grasses used as inputs to ensure that the required inputs were actually applied. In addition, farmers were compensated for the extra time required to gather the grasses. The sum received for the grass (approximately equivalent to 50 cents per week) was a major source of income for many farmers.

5. Extension agents (where a functional service exists) can provide useful assistance in the on-farm trials and in any follow-up. They should always be notified of the trials well in advance and requested to participate.

6. Interaction between farmers during the trials provides a useful avenue of communication, extension, and support, and should be encouraged.

7. Following the trials, a conference or group meeting should be held to discuss research results. Conferences and meetings clarify for participants the reasons for the differences in production observed in the tests, and allow other farmers to be exposed to new information. Many farmers in Honduras who tested a trial regime of manure plus inorganic nitrogen adopted this input after it was demonstrated that their production was higher than they had experienced with other inputs.
In Rwanda, researchers participated in pond sampling and identified fingerling selection as a major operational problem. By examining fish stocks researchers then demonstrated how to identify older, stunted female fish that are sometimes erroneously identified as fingerlings. Farmers had been concerned about under-sized fish at harvest, but the extension service had not been able to determine that poor age determination had been an important part of the problem.

Farm visits may also benefit extension agents traveling with researchers. When researchers and extension personnel work cooperatively, they may provide similar solutions to problems. Farmers’ respect for and confidence in the agent will increase when researchers corroborate the information supplied to them by the agent. This approach is inefficient in time use unless other farmers can accompany the researchers as was the practice in Rwanda. There the farmers gained status through their observed close relationship with the researchers and also acted as effective extension agents during the visits.

**Information Transfer**

Information transfer generated by the farmers during on-farm trials can be successfully communicated to researchers and the extension service in a meeting format that facilitates the expression of the needs and experiences of the farmer. In such meetings on-farm research can be evaluated from the researcher’s, extension personnel’s, and farmer’s perspectives, and new research and communication needs can be identified. Such meetings concur with the concept of participatory rural appraisal, where traditional recipients of extension services communicate their own concerns, needs, and views in a conference setting. This format benefits the acquisition of extension education.

**Literature Cited**

