Documenting, validating and scaling-up local innovations

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In marginal agro-ecosystems, farmers continuously look for technologies that best fit their bio-physical, economic and socio-cultural conditions. Formal research and development efforts still too often result in technologies requiring inputs that are not locally available. This is particularly the case for Africa. Out of necessity, and based on their cultural background, inherited knowledge and daily observations, farmers have generated solutions (even though sometimes partially) to their own problems. Unfortunately, these innovation processes, their results and potential for scaling-up are poorly studied and documented.

Photo: F. Okry

Rose, a project staff member, gathers information about local innovations.

To highlight the value of this rich resource and to develop mechanisms for local innovations to find their way into the formal research and development system, the Participatory Adaptation and Diffusion of Technologies for Rice-Based Systems project initiated several activities to encourage their national partners to document, validate and disseminate local knowledge and innovations. This IFAD-funded project is coordinated by the Africa Rice Center (WARDA). The first phase of the project was implemented from 2000 to 2003 in Ghana, Guinea, The Gambia and Côte d'Ivoire. An external evaluation of phase one emphasised that more attention had to be paid to local innovations. Incorporating this, the second phase began in 2005. Due to political instability, Côte d'Ivoire was replaced by Mali. With a shifting focus from rice to inland valley development, the second phase aims "to contribute to an increase of rice productivity, crop diversification and rural income generation through development, testing, evaluation and adaptation of appropriate innovations".

Capacity building for local innovation documentation

To strengthen the capacity of the Africa Rice Center's partners in identifying, documenting, validating and disseminating local innovations, three day workshops were held in each of the participating countries. Apart from national researchers, interested people from NGOs, the private sector, national extension services and related projects took part. Based on hand-outs and group discussions, each country team developed an outline for documenting local innovations. For example, the Guinea team came up with the following:

- Brief description of the context (problem(s) encountered, related knowledge and innovations available in the region);
- Origin of the knowledge he/she applied to solve the problem or observations he/she has made in the environment that gave rise to the innovation;
- Description of the innovation (process, materials and resources required); and
- Pre-validation of the innovation by farmer and his/her attempt to disseminate (success stories).

The outlines were slightly different from one country to another and only served as guidelines. However, as the project management considered the last point crucial in order to further prioritise local innovations, they made it a requirement for all countries.

Validation of local innovations

In April 2006, project partners from the four participating countries came together to review the first year of the second phase of the project. They took this opportunity to evaluate the documents submitted, looking at their potential for scaling up. In time for the workshop, Mali had submitted five local innovations, The Gambia six, Ghana seven and Guinea eight. The validation went through two processes: a short-listing and a ranking.

For linguistic reasons participants from Ghana and The Gambia formed one group, while Guinea and Mali formed a second one. The first group comprised five researchers, one extensionist and one development worker. The second group consisted of six people, including two researchers and four development workers, from either NGOs or development projects. The key objective of the short-listing was to filter out innovations that were not suitable for scaling-up, based on following criteria:

- Impact of the innovation on the environment and human health: innovations that might be harmful to the environment or human health were strongly discouraged;
- Local and regional availability of required resources; and
- Regional scale of the problem addressed and relevance of the innovation in other agro-ecosystems and socio-cultural contexts.

This screening process led to the elimination of almost half of the innovations submitted. Some interesting learning points came from the short-listing exercise, for example, in finding local solutions to overcome their difficulties, farmers may not consider environmental and human health. Processes to enhance local innovations should therefore facilitate farmers to develop sustainable solutions with care for the environment and human safety. Additionally, setting criteria for the screening process is context-specific. In fact, the importance of the third criterion "Regional scale of the problem addressed and relevance of the innovation in other agro-ecosystems and socio-cultural contexts" should be considered through the lens of the regional focus of this project and the objective of scaling-up.

Ranking of local innovations

Within each group, all members gave scores to the retained innovations, which were then ranked. The retained narratives from each group were translated overnight and the process was repeated the next day: Group 1 now scoring innovations of Group 2 and vice versa. The output of the entire validation process is as in Table 1.

Table 1: Results of the validation process

Innovations	Origin	Rank by Group 1	Rank by Group 2
Seed storage with Hyptis spicigera	Mali	1	1
Fight against wild rice by burning rice straw	Mali	2	1
Use of bamboo sticks or maize stalks to control termites	Guinea	3	4
Fight against termites using salt	Mali	6	3
Métè (Phyllantus discoides)powder to boost groundnut production	Guinea	3	6
Fighting red ants with black ants	Guinea	5	5
Control of iron toxicity using palm flower, lime and rice husk	Gambia	1	4
Seed storage and preservation by keeping panicles upright	Gambia	3	1
Use of lime, millet husk and mango leaves to control soil salinity	Gambia	2	6
Pounded neem tree leaves and ash to control termites	Ghana	5	2
Improving soil fertility using groundnut shells	Gambia	6	3
Using the hand as moisture meter	Ghana	4	5
Use of plain water to control termites	Ghana	8	7
Use of fire to control termite	Ghana	7	8

Group 1: Ghana and The Gambia; Group 2: Mali and Guinea

The composition of the groups undoubtedly influenced the scoring and ranking process, as illustrated by the case: "Control of iron toxicity using palm flower, lime and rice husk". Iron toxicity is one of the major problems for rice cultivation in West and Central African lowlands. Hence, formal research is on-going, with a major emphasis on breeding for tolerance.

Surprisingly, this local innovation was ranked highest by the Ghana-Gambia team, while it did not even rank among the top three innovations in the other group. In fact, this local innovation was tested on-station by a scientist from the National Agricultural Research Institute, The Gambia. His results, presented during the first day of the workshop, confirmed the positive effect of the innovation. This certainly impressed the other scientists and was the main reason why the group of Ghana-Gambia, nearly three-quarters of which were researchers, ranked it highest. The Mali-Guinea group, two-thirds of which were development workers, considered instead the popularity of the innovation within the community of origin and the cost of materials required. It was only at this stage that the participants realised that only a few farmers knew about the innovation. Probing for more clarifications, the innovator appeared to be the chairman of the National Farmers' Platform, who is known as a politician and is fully engaged in off-farm activities. Being a well-off farmer, he could easily afford to buy the expensive lime. We concluded that the scaling-up potential of this innovation remains to be proven before it can be considered for dissemination to resource-poor farmers. At this stage, the innovation was rejected for scaling-up despite the fact that it deals with a serious problem of rice cultivation. Before validating this innovation on-station it would have been better to assess why other farmers in the community are not taking up this idea.

An important learning point from this exercise was that the background and the perception of people involved in the validation process significantly influences their judgment: similarly, the innovation "Use of lime, millet husk and mango leaves to control soil salinity" was classified by Group 1 as the second most important innovation, while Group 2 considered it as one of the least important ones. Again, Group 1 appeared to have been influenced by the extent of the problem addressed, rather than the innovation itself and its chance of adoption by others.

As such, only a well-balanced group and a carefully facilitated session will lead to a good prioritisation. Facilitators aiming to disseminate local innovations to resource-poor farmers should also analyse the profile of the innovator. This indicates the level of resources and knowledge required for its adoption. It is also important that when documenting local innovations, one should also describe the extent of actual diffusion. This indicates the level of replicability and scaling-up potential.

Scaling up strategies

So far, project teams in Mali and The Gambia have disseminated local innovations through video, rural radio, poems and songs. Fruitful experiences will be extended to other countries during the second year of implementation. Publications such as pamphlets and journal articles will also be used to complete the documentation process. To encourage partners to document local innovations on rice, project management initiated a local Innovation Documentation & Enhancement Award (local IDEA) in November 2005. The competition is open to anyone from project countries until November 2006. (For more details about this competition, please contact Paul Van Mele at p.vanmele@cgiar.org)

Influencing the research agenda

Some of the local innovations listed above have been incorporated into the formal research agenda. The use of *Hyptis spicigera* to control termites and other seed storage pests is currently being tested by an entomologist at the Institut d'Economie Rurale (IER) in Mali. Scientists from the Africa Rice Center in Benin have incorporated "The use of maize stalks to control termites in the field" as one of their experimental treatments.

Giving recognition and value to local innovations is crucial to institutionalise them in the formal research and development system, in order to contribute to community empowerment and rural development. To achieve this, a validation or screening process is an important intermediary step. At this stage of the Participatory Adaptation and Diffusion of Technologies for Rice-Based Systems project, we cannot pin down best-bet methodological steps. However, we have learnt that the validation process is context-specific, based on project objectives and largely influenced by the participants' background and perceptions. A broad stakeholder representation and good facilitation will add to the quality of the process and will avoid any inappropriate local innovations being scaled up. ■

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Reference

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