Part III: Learning with rural communities

6

Creative Learning Methods

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INTRODUCTION

About half of the population in Bangladesh lives below the poverty line, mainly in rural areas and with a preponderance of women (Duncan *et al*., 2002). But poverty is more than a lack of resources, it is also a lack of opportunities. To improve their livelihoods, the poor need to be able to benefit from information and services that are both production-oriented (e.g. agricultural technologies, credit and markets) and protection-oriented (e.g. pensions, health care and disaster preparedness) (Farrington *et al*., 2002). But often the poor cannot access services and information because they either lack time or money to seek it or the information providers are not perceived as socially or culturally approachable. Although from 1987 to 2000, men in Bangladesh have reduced the labour supply to agriculture by one third and women started to work more in agriculture, institutional services for development still by and large target men only (Hossain *et al*., 2004).

Learning helps to transform information into knowledge. Even if extensionists *sensu lato* improve the poor's access to information, questions arise as to what extent farmers can apply this information. What does it help to learn about improved varieties if these are not available, or can only be obtained through great effort? Or to listen to a lecture or radio programme if the vocabulary is too pedantic or academic? And what is the best time and method to reach poor women, considering that the majority in rural Bangladesh is illiterate? Clearly, to assess the effectiveness of learning, one has to consider the education approach, the content and the way this has been developed, and the context. Creativity is needed in developing farmer education methods, but equally in engaging multiple service providers in pro-poor development.

From 1999 to 2004, PETRRA focused on technology development, uptake and extension, and policy. At the start, since PETRRA was a research project, scientists from the Bangladesh Rice Research Institute (BRRI) had high expectations that

funds would be invested in their own activities. Instead, the project stimulated a wide range of actors and partnerships between NGOs, and the public and the private sectors to develop and test extension, communication and learning methods. All of the methods evolved during the project as PETRRA and its partners learnt by doing and exchanged experiences.

Under various donor-funded projects in Bangladesh in the 1990s, the Department of Agricultural Extension (DAE) was exposed to participatory approaches in farmers' needs assessment and experiential learning, but apart from project-induced activities their main mode of working was still meetings, and to a lesser extent demonstration plots and field days. Institutionalising changes in the largest national resource of extension staff was a major challenge, and low internal ownership was mainly blamed on donors driving the agenda (Pasteur, 2002). PETRRA's competitive bidding mechanism did not allow it to provide funds to DAE unconditionally, but the door was open to them to participate in the bidding. But DAE did not submit any concept notes, illustrating their initial resistance to competing with others for funds, or to joining partnerships. Over time, PETTRA or its partners often invited block supervisors to participate as resource persons, to give training, and attend field days or regional workshops. Through this involvement, DAE gradually realised their own strengths and weaknesses. The signing of a memorandum of understanding with a major NGO in August 2004 illustrates that an endorsement by the minister for agriculture can further push changes in mindset (see Box 21.1).

Open the door. Even when ideas for new technology are appropriate, they can be locked behind the doors of gender discrimination, marginalisation of the poor, or the exclusionary extension methods. PETRRA encouraged local and international partners to look behind the closed doors.

The resistance of DAE to bid for sub-projects in a way created more opportunities for NGOs to emerge. Relatively few NGOs in Bangladesh focus on agriculture, and if they do, it is mostly not part of their main development programme. Many NGOs do not consider agriculture to be an entry point for reducing poverty, so they tend not to build agricultural expertise within the NGOs. This position is counter to the consistent findings of PETRRA that shows the impact of improved rice technology on poor households, and that agriculture offers a platform for livelihood diversification (Orr *et al*., 2004). Because NGOs recognised their limitations, many of those that bid for projects established formal and informal partnerships to link to agricultural expertise.

The methods described in this part of the book were designed with three things in mind: reach, women, and ownership.

By reach we mean that the PETRRA project challenged its partners to think about how their methods could potentially

reach a large number of people. Some of them did manage to meet medium-sized groups, of say several hundred at a time, with a quality message, while others started experimenting with video and voluntary farmer extension agents. It is not a trivial matter; using conventional methods, extensionists have reached perhaps 10% of the world's farmers (Zijp, 1999). Few other sectors of the economy try to stay viable without new ideas; even such apparently humdrum businesses as leather handicrafts, cut flowers and plastic kitchen supplies fail without a fairly constant stream of new ideas (Fairbanks and Lindsay, 1997). Smallholders also need new ideas to keep the family farm viable.

Women were important to PETRRA, and most of the methods made a special effort to reach them. Because of social norms, many women in Bangladesh hardly leave their village or even homestead, so ensuring their access to information and services was a major challenge (see also Part II on gender).

Ownership: perhaps most importantly, many of PETRRA's extension methods were developed within the organisational culture of each partner, and were created or adapted locally through feedback from farmers. Encouraging local researchers and extensionists to think creatively and competitively about extension may have been as important in the long run as the new techniques they invented for growing rice.

BIDDING AND LEARNING WITH PETRRA

PETRRA provided an opportunity for agencies to find new ways to work with the rural poor who relied on agriculture, but who had hardly enough rice for more than eight months of the year. Sub-projects learnt about new uptake and extension methods from each other, from PETRRA, and elsewhere, while PETRRA in turn built on experiences from its sub-projects.

In an open tender in 1999, PETRRA launched a first round of calls for concept notes that focused on seed uptake methods; most of the projects that gained approval are described in Part V on pro-poor seed systems. In this call, the successful agencies were also selected to stimulate diversity in service providers, by involving national NGOs, regional NGOs, divisions of a government research institution, a local private company and a local NGO with little agriculture expertise. Each learnt unique lessons.

Shushilan, for instance, was a local NGO in the southwest with a small geographic coverage, just two to three upazilas. It started in the mid 1990s with a strong social justice programme and a major emphasis on women. Leaders were from the local area. Shushilan had no prior experience in agriculture, but was like many local NGOs with a modest social programme and a deep commitment. PETRRA funded Shushilan for two reasons: first, it proposed links to local governmental agricultural expertise (extension services and regional research stations); second, it emphasised

the importance of women. Because of its clear poverty focus and lack of farm experience, Shushilan partnered with local experts to train women in rice production, not just in post-harvest. Shushilan developed picture songs for motivating large audiences to adopt appropriate technologies, including integrated pest management. "This was a real breakthrough for us: not only was this the first time that a social development organisation capitalised on its own cultural expertise to deliver locally validated agricultural messages, but most of all their experiences highlighted that women should be given access to all agricultural information, not just on post-harvest," said Noel Magor, PETRRA project manager.

To help poor farm families learn knowledge-intensive technologies, such as fertiliser management, PETRRA forged novel partnerships in its second call for proposals in 2001. The case study on soil fertility maps emerged from the synergy of two scientists: one a leading soil researcher at the Bangladesh Rice Research Institute (BRRI), the other an agronomist and executive director of the NGO Agricultural Advisory Services (AAS).

Going Public is an extension method that teaches agricultural topics in public places. It was not proposed as a sub-project, but was introduced by CABI Bioscience in the Seed Health Improvement sub-project, based on CABI's experience in Bolivia (Bentley *et al*., 2003). PETRRA's flexible management helped to explore new frontiers.

An external review by Gary Alex, extension specialist from the World Bank, led to a third and last call for concept notes in 2002. New proposals had to address women-to-women extension, links with the private sector, or the extension of organisationally complex technologies. Women-to-women extension was specifically addressed by the award-winning video project and other case studies described in Part II on gender. To bridge the knowledge gap on herbicide use and safety, the NGO SAFE joined with the herbicide manufacturer Syngenta, BRRI and the UK Natural Resources Institute (NRI). They jointly designed training materials for use in farmer field schools (FFS) and for small-town seed and agrochemical dealers, the farmers' main source of information on herbicides (Chowhan *et al*., 2004; Riches, 2004). In another sub-project, IRRI partnered with the NGO AID Comilla who in turn linked up with various local NGOs. They used small-scale farmer experiments to convince farmers not to spray insecticides and to reduce nitrogen fertiliser application by making use of the leaf colour chart. The initial phase was followed by farmer-to-farmer extension (Jahn *et al*., 2004). Examples of sub-projects dealing with organisationally complex technologies are given in Part IV on enterprise webs.

One of our strongest impressions of PETRRA is that the donors got their money's worth. The money spent on PETRRA went into technologies that the poor could use, into pro-poor seed systems, and into innovative extension and farmer education methods. PETRRA encouraged a real diversity of extension methods. Some were

created fresh for this project, such as village soil fertility maps and picture songs, or the prototypes came from elsewhere and PETRRA helped to shape them, such as Going Public. PETRRA also took some established methods and gave them a new angle, such as making videos with women, for women.

But competitive tender was not easy. Based on the concept note approval by the external technical advisory committee, PETRRA sometimes had high expectations about the performance of a partner, but in implementing the sub-project it became apparent that the partner had clearly different objectives and was not flexible to adjust its mode of working to align more closely to values set by PETRRA (see Box 1.2).

In other cases, sub-projects were approved and started convincingly, but changes in project staff completely changed the dynamics of the partnership and *modus operandi*, and consequently required intensive counselling and monitoring.

Some early champions under PETRRA started to attract the attention of donors and other organisations, got flooded with work and lost the focus of their sub-project. Donors have a responsibility in assessing an organisation's carrying capacity before funding new projects. The capacity of PETRRA management was also stretched to the limit by the diversity of organisational models, communication, education and extension methods.

PETRRA CASE STUDIES

After briefly describing some of the case studies, we will discuss how face-to-face and mass media methods all have a role to play in triggering learning. We have assessed the methods for their poverty relevance. We call methods that reached

Table 6.1 Key features of learning methods tested under PETRRA

METHOD	CONTEXT	POVERTY RELEVANCE
Farmer field school (FFS)	Staff of the NGO SAFE had years of experience in FFS and could build on existing FFS groups	Inclusive, although poor may drop out due to time constraint
Videos (Chapter 7)	The project could tap into source of village women trained in other project and linked partners with multiple skills	Focused, poor women were specifically invited
Farmer-to-farmer (Chapter 8)	Neither the researcher nor the NGO had practical experience in participatory approaches, but they shared a vision of using them	Focused, poor farmer trainers who work the land establish new groups of poor farmers in other villages
Going Public (Chapter 9)	None of the partners had any experience in this method	Inclusive, although women were excluded when organised at markets
Picture songs (Chapter 10)	The method built on Shushilan's experience with social drama	Inclusive, there is little choice over who participates

both poor and non-poor 'inclusive'; while methods specifically designed to reach the poor are 'focused'.

Watch and learn (Chapter 7)

Videos are not only more cost-effective, but they may trigger farmers to experiment and change behaviour more than farmer-to-farmer extension. In other words, videos are cheaper for reaching an audience and they are better at getting ideas into people's heads. The counter-intuitive conclusion that videos may exceed the quality of face-to-face extension may be because videos, if well done, can be more convincing than real people. Well-written videos, with good photography and clever editing can hold a lot of compelling images and sharp, concise dialogue in a short time, and so may have more emotional impact than a person talking.

Although video is not a new method in rural development, the videos in the Bangladeshi case study use educational principles to teach women and invite them to experiment with appropriate low-cost technologies, informed by scientific agronomy and a respect for local farming. The technologies are simple new practices created with and for the poor of Bangladesh. The videos are made with village women and are especially suitable for audiences with low literacy rates.

The authors recommend showing the videos in facilitated group sessions, especially for showing technologies that involve motor skills like sorting seed grain-by-grain. So an eight-minute video becomes a one-hour group discussion. Still, PETRRA's four videos on producing quality, farm-saved seed take up far less time than the original season-long participatory experiments, which aimed to test and fine-tune the technologies and learn about local perceptions and attitudes.

A simple technology, created with and for the poor. Suraton Bibi sits with her grandson Aktar on a seed drying table. "This is great," she says "after my family has finished threshing and drying the rice seed on this table, I can relax on it."

A test for the future will be to broadcast the videos on terrestrial TV in Bangladesh, to really try them as mass media, and measure the impact. It will be important to learn how many people can adopt these appropriate technologies just by seeing them on TV. Nowadays, nearly all villages in Bangladesh have video players and TVs available for rent. Various pathways to reach the poor with videos are described in Chapter 5.

The videos have been taken up by numerous NGOs and research organisations in Bangladesh and abroad, and various project partners are currently promoting the production of training videos as an efficient farmer education tool.

Village soil fertility maps (Chapter 8)

Poor farmers, chosen and trained as extension agents by the sub-project, established and disseminated local fertiliser recommendations to at least 4,000 people in 216 villages. Farmer-trainers asked resource-poor farmers, who worked the land, to draw a map of their village, and to indicate the most fertile fields, the next most fertile ones, and so on. The farmers chose three to six fertility grades, gave each a number, and were asked to colour each on a map. Initially researchers confirmed each grade with laboratory tests which boosted credibility and morale among the farmer trainers. They then initiated experiments with the villagers to determine the right amount of fertiliser for each grade, based on crop requirements.

Scholars have demonstrated either or both of these ideas of map-making with local knowledge of soils before (Behrens, 1989; Kanté and Defoer, 1994; Sandor and Furbee, 1996; Sillitoe, 1996; Defoer and Budelman, 2000; Herlihy and Knapp, 2003), but this was the first time they were used together in Bangladesh.

The village soil fertility maps reached many people, for a face-to-face method. It reminds us of the *'promotor'* method used in Latin America, where a full-time extensionist (e.g. an agronomist) trains farmers as extension agents. The farmer extension agents work part-time and are often paid for their time or rewarded with farm supplies. This method has been championed by Roland Bunch for many years (Bunch, 1982) and farmer extensionists are still working to good effect in Nicaragua, for example. It is too early to say how this system of farmer-to-farmer extension will evolve in Bangladesh, but surely poor farmer trainers have gained respect in their communities.

Mozaffor Hossain demonstrates to other farmers how they can improve their farm-saved rice seed. When one of the passers-by notices the CDs with videos on seed health, he asks us how much one costs. He is obviously a better-off farmer; he said: "I just bought a TV and video player and would like to show these videos in my village."

Going Public (Chapter 9)

As with the other case studies presented in this part of the book, Going Public addressed the quality-quantity dilemma: How to scale up farmer education? Most face-to-face extension methods reach audiences of 30 people or less. Going Public can reach several hundred people in one meeting, as the short sessions are repeated several times whenever the audience changes. With this method, participants can not be chosen. Because of the structural set-up of the method, learning exercises need to be short and season-long field observations are impossible to do. The method is inclusive towards poor and not-so-poor, the facilitator has little choice over who attends a session.

Going Public started in Bolivia, but PETRRA offered an opportunity to test it in Bangladesh. Mountainous and

sparsely populated Bolivia could hardly be more different from Bangladesh geographically. The Bolivian Going Public was designed for markets, where people come in from remote villages, hours away. Andean women not only go to markets, they play all the roles there, from consumers, to retailers, farmer-wholesalers and merchants. This is not the case in Bangladesh. Nash and colleagues soon realised they could reach women by Going Public in villages instead of in markets.

Under PETRRA, the method was tested by two government institutions, BRRI and RDA, and the NGO AAS. After PETRRA, the NGO RDRS was convinced of its benefits and decided to start using the method in their agricultural programme from 2005 on.

Picture songs (Chapter 10)

The NGO Shushilan fought for women's rights, for the poor, and against poverty for years before starting to work with PETRRA in 2000, when for the first time they began using agriculture as a tool to improve human welfare. When Shushilan put agricultural science at the service of the people, the backbone of their effort were extension agents who met with community members in long-established, local clubs. They also used demonstration plots, with the added twist that most of the demo farmers were poor women, learning to work their own land, alongside their husbands and brothers, which helped the household keep down cash expenses for labour, while growing their own food.

Shushilan used village women extensionists and demo plots to good effect, but in Chapter 10 we chose to describe another of their extension methods, the off-beat and charming 'picture songs', little shows that travel upon demand from village to village, where women and their families can enjoy a bit of innocent and educational fun. The events are organised by local clubs or organisations. The troupe sings of new, appropriate technologies while a canvas with large paintings on a scroll illustrate the lyrics. The smallholders who adopt the song's technologies may double their rice yields while lowering their costs. The families were delighted with the results.

Picture songs elegantly combine music, dance and paintings by local artists. They perform upon request of local organisations.

"We have used folk songs and drama in agricultural extension for many years, but this is the first time that I see folk media being combined with large illustrative pictures," says Mr. Fazlul Haque Rikabder, director of the Agricultural Information Services at the Ministry of Agriculture.

The method is clearly inclusive; the troupe has no control over who attends these public gatherings. The authors recognise that the larger an audience gets, the harder it is to assess impact. Most NGOs working under PETRRA had no expertise in rigorously assessing impact of their extension methods, indicating an important area for capacity building.

Under PETRRA, Shushilan performed 32 cultural shows with the agricultural pot song, and by October 2004, they had another 181 performances under other projects.

NEW DIRECTIONS IN FARMER TRAINING

Through its value-based research, PETRRA guided sub-projects to target poor farmers, men and women. Technologies, extension and education methods were tested and validated by the poor. Farmer education differs from extension in that it is more farmer-centred than trainer-centred, with more emphasis on the learning process. In many cases it is hard to draw a clear line between the two as the level of learning depends by and large on the quality of facilitation. To avoid confusion we use the term learning methods here, as all methods allow for joint learning.

In each sub-project staff learnt something from farmers

Traditional top-down extension methods are designed to move information in one way: from researchers to extensionists to farmers. But working on extension methods allowed PETRRA's partners to learn from farmers, to everyone's benefit. Working together, the researchers, the NGO staff and the farmers modified the technologies in ways that made them more farmer-friendly. For example:

Researchers had the idea for a rice seed drying table, but farmers taught them how to make a cheap table from local materials that would fit in the small rooms and porches of a Bangladeshi farm house (Chapter 7).

While making village soil fertility maps, project staff learnt from farmers that rice plants did not respond to phosphorus as much as the chemical tests of soil suggested they would. This led to an improved lab test and more sensible fertiliser recommendations. Researchers realised that farmers knew so much about soil that they could draw soil maps, run experiments and work as extension agents (Chapter 8).

Going Public was designed to learn from farmers, as well as teach. AAS learnt that farmers had many names for bakanae, without realising that it was a disease. Surprising as this may seem, it shows that farmers may have quite a different view of a problem compared to scientists. Taking farmers' perspectives into account helps to address them in a sensitive way (Chapter 9).

Foundation seed, the basis for producing quality seed, is sold to resource-poor farmer seed producers by the NGO AAS in 3-kg instead of 10-kg bags (see Part V on pro-poor

seed systems). Manufacturers are packaging herbicides in small bottles, for small fields.

Learning content: appropriate technologies

In a World Bank review on research and extension, Purcell and Anderson (1997) stated that regardless of the extension system used, a supply of appropriate technology is essential if extension investments are to be worthwhile. By interacting with resource-poor farmers, men and women, PETRRA's partners validated and fine-tuned various second-generation technologies, ready for scaling-up, e.g.

- Using high-yielding BRRI varieties, bred for local conditions
- Improving farm-saved seed through training on seed health
- Saving labour with new-generation herbicides
- Applying lower or better balanced doses of chemical fertiliser, based on a participatory assessment of the crops' needs for each particular soil type
- Complementing this with organic fertiliser, to improve soil texture and soil health
- Avoiding the use of insecticides.

Methods: face-to-face and the media

Besides the mass media like radio and TV, the 'small media' are becoming more important as new formats like internet and videos join newsletters, posters, pamphlets and older, folk media. While the media can be mass or small, face-to-face communication is not just for small audiences either; at conferences or political rallies a speaker may address thousands of people. Potential audience size is not strictly limited by the communication technology.

Many of the fresh tactics discussed in this book are aimed at medium-sized audiences, whether it is the narrowcasting of videos, Going Public or picture songs (see Figure 6.1). Each PETRRA partner fostered its own method, for various topics and depending on their own organisational strengths and interests.

Face-to-face extension takes place in many ways.

There is a place for both the media and face-to face extension. For instance, farmer-to-farmer extension worked quite well for the soil maps, but for training women on post-harvest we argue that video works better. This is because the soil information is eminently local, and must be taught in person, while conditioning and storing seed can be done in the same way across large areas of Bangladesh, so it lends itself better to the mass media.

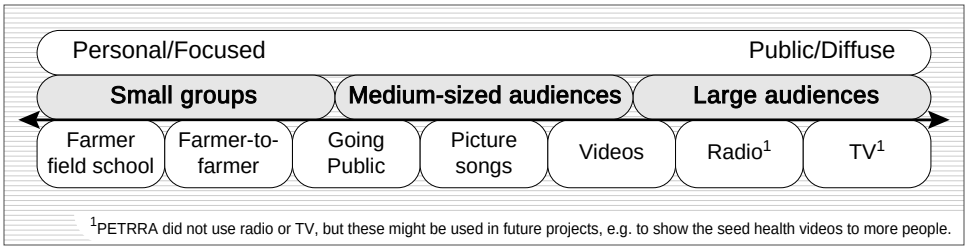

Figure 6.1 Learning methods tested under PETRRA with audience size

Marrying methods to content

Some methods are more appropriate for certain topics than others, and could easily be used together, as we describe below. Table 6.2 presents an overview of how the methods tested under PETRRA can be used for a broad range of topics.

Mixing methods

Use intimate, face-to-face methods to learn about local knowledge, to develop and

Table 6.2 Versatility of learning methods

METHOD	CONTENT	POTENTIAL FOR OTHER TOPICS
Farmer field school	Herbicides, planting density	Farmer field schools are highly versatile (see LEISA Magazine March 2003 at www.leisa.info); SAFE used it for teaching farmers about herbicide use and safety
Videos	Seed health (seed sorting, seed flotation, drying table, storage pot)	High potential for many topics; for certain topics, like seed sorting, videos can be used as small media, accompanied by demonstrations, while for other topics it can be used as mass media; is particularly useful to reach women in rural Bangladesh
Farmer-to-farmer	Getting the right balance of chemical fertiliser and encouraging farmyard manure	Soil mapping per se is closely linked to soil management, but other types of community mapping can be and have been used for other natural resource topics (e.g. irrigation, planting dates, weed management)
Going Public	Seed health (field sanitation, drying tables, seed sorting)	Has a high potential for other topics, especially ones that are visual, and can be demonstrated in a few minutes; is good for showing farmers how to diagnose a pest or disease where information like smell or size may be confusing if presented in photos or videos
Picture songs	Soil management, seed health, natural pest control, high-yielding varieties (HYV)	May work best to introduce a topic, to motivate farmers or to make a technology more memorable; is not intended as a stand-alone method; can be used to encourage tolerance between religious communities

test the educational materials with their target audience, to get the words just right. For instance, while making the seed health videos, we learnt of a farmer who lit a candle in a seed storage pot as she closed it. This burned out the oxygen, and made the container even less insect-friendly. But then, once we have the right technology, thoroughly discussed and adapted by farmers, we should be able to teach it with small or mass media in most cases. Various methods can be used simultaneously to complement one another.

It is a cliché that the further away we get from small, face-to-face methods, the more passive the audience becomes. It is not always so. For example, the PETRRA videos were made with farmers, with the same women and men who had planted the trials with researchers where the technologies were developed or validated. The videos can be shown in villages, so that an extensionist can help the villagers discuss what they have seen. But even if shown on TV, the videos should be able to invite the audience to experiment. Also the picture songs could and should be filmed and broadcasted on TV.

Several extension methods combine well, such as the picture song with demonstrations and training with extensionists. Going Public and farmer field schools could interact with the media in interesting ways (see Chapter 9 and Bentley *et al*., 2003). Field schools could be turned into radio and video studios, where farmers could speak in their own words, to describe their experiences for the millions of farmers who will never be fortunate enough to attend a farmer field school. This is elaborated on in the concluding chapter.

Miking, whereby a rickshaw or other small vehicle drives through the village and announces messages over a microphone and amplifier, is often used to announce political gatherings or public health issues in Bangladesh. Various PETRRA sub-projects used miking to announce major events, such as the video shows, Going Public events, or mobile pump demonstration days (Chapter 13). Likewise, in Bolivia we recently saw a Going Public where agronomists set up their stall at a family-owned seed and chemical store. The shopkeeper announced the Going Public over local radio stations beforehand, which helped to draw in a crowd.

Conclusion

Diversity, flexibility and creativity in extension, communication and farmer education methods are required: they allow service providers to tap into their own organisational strengths and use methods that are appropriate for the needs of their clients. To reach large numbers of farmers, men and women, there is a lot of scope for creating new methods of large face-to-face or small media. But irrespective of the method used, a good understanding of the local context, and the extent of building on adult education principles will determine its effectiveness.

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