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PRA in international agricultural research: first experiences of IIMI-Pakistan

Paul Gosselink and Anouk Hoeberichts

• Introduction

We would like to share our experiences of using PRA in an international agricultural research organization, the International Irrigation Management Institute (IIMI). IIMI is a member of the Consultative Group for International Agricultural Research (CGIAR), with its headquarters in Colombo, Sri Lanka. It has a broad mandate which includes '*the improvement of the management and performance of water resource systems and irrigated agriculture*'. One of IIMI's research programs is Performance Assessment of water resources systems. It was within this context that we used PRA.

Policy makers, system managers and water users have contrasting interests in irrigation performance. We wanted to investigate the perspectives of all the stakeholders within an irrigation system and explore the implications for irrigation systems management. An important component is the indicators of irrigation performance derived by water users and how these compare with those of policy makers and irrigation system managers.

The participatory research was conducted in Pakistan (South Punjab), one of IIMI's National Programs. PRA was considered the most suitable methodology because it provides scope and opportunities for water users to express their perceptions. This approach is different from IIMI-Pakistan's conventional approach to data collection (e.g. primary data collection using questionnaires) because it involves water users as partners rather than sources of information.

The need for a different approach was illustrated recently by water users living in a watercourse where IIMI had been collecting data for three years. The villagers revolted against IIMI's presence and would not allow the staff to visit the village or ask any more questions. Villagers suspected IIMI of reducing the water level in the distributary to test the extent to which water users were able to survive. It became clear that the water users could no longer be neglected in the research process.

• Performance Indicators: the role of water users

We adapted and applied PRA as a research method to explore water users' perspectives on irrigation performance. This meant that water users were involved as:

- *providers of relevant knowledge and information*:
  we were there to learn from their experience;

- *analysts of their problems related to irrigated agriculture*:
  water users identified and ranked the main problems related to irrigated agriculture and, with help of cards and flow charts, they visualized causes, effects and possible solutions;

- *actors influencing the research agenda during the research process*:
  issues which they identified as important were taken up to explore further (e.g. the influence of landlords and politicians on unequal water distribution);

Source: PLA Notes (1996), Issue 26, pp.45–48, IIED London

- *participants in the identification of performance indicators*:
  through group meetings the information received by different water users was cross-checked to build up an agreed framework of indicators; and

- *experts of their own situation in making decision and taking action*:
  based on several PRA tools (map, trend lines, cropping calendars and water need periods, ranking, chapati diagrams), we learned from water users how they used indicators to cope with poor irrigation performance.

This participatory study elicited broad and detailed perspectives of water users, which are not limited to conventional technical standards (Figure 1). This is a clear benefit of the participatory approach.

We encountered some difficulties in applying PRA as a research methodology. First, this approach was novel for IIMI so the villagers gained the impression that something was to be offered. One water user remarked: *this is the first time that I am approached in such a way.You should be up to something!* He knew there was nothing to expect from officials who asked some questions and left again.

Second, when farmers suggested possible improvements, there was a gap between their proposed action and the ability of IIMI to respond. This stemmed primarily from the failure of IIMI to develop functioning partnerships with local governments, research institutes or extension agencies to implement the changes (the action to build on the participatory research).

Figure 1. Performance indicators developed by water users, together with local responses to poor water performance.

Indicators	Local response to compensate for poor performance
Receiving a sufficient amount of water (*adequacy*)	Adjust irrigation practices, installation and use of tubewell water, engage in water markets, illegal practices, exert social pressure
Receiving water at the right time (*timeliness*)	Adjust irrigation practices, installation and use of tubewell water, engage in water markets
Mud, sediments, minerals and salt contents (*quality*)	Conjunctive use of canal and tubewell water
Difficulty in irrigating with a certain stream size and flow velocity (*tractability*)	Adjust irrigation practices, installation and use of tubewell water, engage in water markets
Uncertainty about how much, when and for how long canal water will flow (*predictability*)	Social relationships and networks
Water distribution between distributaries, water courses and within a watercourse (*equity*)	Social pressure
Use and obtain tubewell water, cost/expenses related to tubewell water (*hassle*)	Installation and use of tubewell water

Source: PLA Notes (1996), Issue 26, pp.45–48, IIED London

- **PRA in large scale irrigation systems**

One watercourse was chosen for a more in-depth study of how water users apply indicators to compensate for poor performance. Following an informal group meeting, the villagers agreed to arrange individual meetings with the team. In a final group meeting, the participants shared and cross-checked issues raised in individual meetings.

This raised questions about the replicability and representativeness of the information gained. For example, how could we scale-up our watercourse-level insights and have an impact on the management of the irrigation system? What was the reach of PRA? Could findings from selected watercourses be generalized for the entire secondary channel?

The PRA study would have become too time consuming if the same procedure was repeated for other watercourses to identify overlaps and differences between water users. An option was for the team to interview fewer individuals from a larger number of watercourses. We felt this would fail to provide the opportunity for in-depth discussion and feedback with the various water users.

However, changes at one point in the irrigation system may affect all watercourses downstream, insight in the water users' perspectives of other watercourses along the distributary seemed necessary. The idea arose to design a more structured survey based on the PRA study.

A combination of PRA with more structured techniques could provide a solution in large-scale irrigation systems. However, the potential loss of information should be recognized. Our experiences suggest that in larger surveys, there would be less time available for each water user and opportunities for feedback and returning to the communities would be reduced.

Figure 1. Development of a flow chart, Punjab, Pakistan

Source: PLA Notes (1996), Issue 26, pp.45–48, IIED London

• PRA in a CGIAR institute

This research highlighted a problem for an organisation like IIMI in undertaking PRA. While IIMI can use PRA to identify possible local management strategies and action to improve irrigation services, it cannot implement them. IIMI makes a distinction between its 'clients' (policy makers, managers and researchers) and 'beneficiaries' (water users whose livelihoods depend on irrigated agriculture). National agencies, not IIMI, provide irrigation services to the beneficiaries.

The role of IIMI is to collaborate with local policy-making organizations, governmental irrigation management organizations, associations of water users and national research institutes. These organizations are normally involved in implementing proposed changes in the management of the system. However, local governmental organizations are not always involved in the collection of information, nor were they involved in this study on water users' perspectives. Yet, they are supposed to consider changes proposed by IIMI.

Proposed changes which affect the whole distributary should be taken to a higher level, including all other stakeholders groups. This can help create a rich picture of the constraints and opportunities of innovations in an irrigation system. Another participatory methodology was used in this study to do this: Rapid Appraisal of Agricultural Knowledge Systems (RAAKS). This provided opportunities to involve and bring together all the actors who have relevant knowledge and information to consider proposed changes.

A first step of RAAKS was to identify these actors (e.g. irrigation department, police department, water users, member of national assembly). Based on interviews with people representing these actors, an analysis was made of the gaps and overlaps concerning their objectives, interests, tasks, linkages, communication and coordination in relation to irrigation performance. There appeared to be very few interactions and shared interests relating to irrigation performance. The attitude seemed to be: as long as you are not aware of another one's problems, you don't have to bother. However, all the actors recognised that progress could only be achieved by working together.

• Conclusions

Water users can clearly analyze their own situation, including the detailing of changes they would like both to see and can make at field and watercourse level.

Current rethinking of the role of the CGIAR centres suggests a possible change in mandate which would make it possible for organizations, such as IIMI, to commit themselves to action strategies identified by stakeholders. In the mean time, IIMI should try to involve the irrigation agencies as much as possible in the application of PRA with water users.

IIMI recognizes the relevance of incorporating participatory research methodologies, and PRA and RAAKS are currently included in several research programmes. It is hoped that participatory research methodologies will eventually become institutionalized at IIMI.

- **Paul Gosselink**, IIMI Headquarters, P O Box 2075, Colombo, Sri Lanka, **Anouk Hoeberichts** (formerly at IIMI-, Pakistan), currently at Euroconsult/BMB, PO Box 550, 6800 AN Arnhem, The Netherlands.

NOTES

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The authors are indebted to Jacob Kijne, IIMI's former Director Research for his very useful comments on this paper.

Source: PLA Notes (1996), Issue 26, pp.45–48, IIED London