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Community managed rural water supply: experiences from participatory action research in Kenya, Cameroon, Nepal, Pakistan, Guatemala and Colombia

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Introduction

At the Earth Summit (UNCED, 1992), in Rio de Janeiro in June 1992, world leaders committed themselves to a comprehensive programme to bring sustainable water supply and sanitation services to the hundreds of millions of people who currently lack them. All States and support agencies were urged to implement activities aiming for universal coverage outlined in Agenda 21, a strategy for sustainable development in the 21st century. A guiding principle of Agenda 21 is: 'Community management of services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes'. Experience in many developing countries shows that even the best run water agencies cannot successfully implement, operate and maintain a network of widely dispersed water systems without the full involvement and commitment of the users. Despite the best endeavours of central agencies, staff, transport and budgets become overstretched, leading to broken down systems, dissatisfied consumers and demoralised agency personnel. However, agencies which make the transition from being providers to facilitators of communities can divert resources currently swallowed up in the provision and maintenance of inefficient services and use them to bring greater cost-effectiveness and more widespread and sustainable benefits. Reducing the need for reconstruction

or rehabilitation of broken down systems means more satisfying and more productive work on new schemes.

Thus, supporting a more prominent role for communities as managers of improved water supply systems has several advantages. It can lead to greater efficiency in system performance, improve cost-effectiveness for both communities and agencies and has better prospects for the long-term sustainability of water supply systems. As a result there is a growing trend in most countries in the South to encourage rural communities to manage their own water supply schemes. Support agencies also promote decentralisation and greater community involvement in decision making and planning, placing more emphasis on water resources management at the lowest appropriate level. Community management does not imply that communities must take care of everything or pay the full costs. The idea of partnership allows scope for sharing responsibilities between supporting agencies and communities. The functions to be performed by local management organisations can thus vary considerably, depending upon the agreed division of responsibility between the agency and the community.

Decentralisations and stronger user involvement, however, faces a lot of constraints for NGOs, agencies and communities. On the side of the agencies, there is a strong tradition and focus on construction of water supply systems. Little emphasis is put on the establishment of management capacity at local level because of a lack of experiences and strategies. On the community side, there is often a lack of experience with management of water supply systems and a lack of tools to cope with their operation. However, an understanding of community management is not fully established and many gaps still exist. Problems include: insufficient knowledge of indigenous management systems, partial coverage of user populations, lack of effective and equitable financing systems, insufficient capacity building, absence of suitable management tools, environmental degradation of watersheds and absence of proper gender balance in planning for, contributions to and control over the established water service.

Since 1994, research teams from six NGO water supply agencies in Cameroon, Kenya, Nepal, Pakistan, Colombia and Guatemala have been involved in a four-year participatory action research programme. A team from IRC in The Netherlands has supported local action together with the local partners and helped by an international advisory group. The programme, of which the author is overall coordinator, is funded by the Dutch government and deals with community management. It is trying to develop approaches, methods and tools to enhance the capacity of rural communities to manage their own water supply systems with appropriate back-up, support and guidance. Lessons are being drawn on improved strategies and innovative methods for building community management capacity.

The twenty-four communities in the project have various types of water supply systems and service levels and represent a range of environmental, socio-economic and cultural conditions as well as variations in managerial

performance. In less than three years, the process and empirical results have thrown up real insights, both into what comprehensive, gender-sensitive community management of local water resources and domestic water supply can achieve, and about which agency approaches and tools are effective in helping both rural communities and their local water organisations to obtain and preserve an effective water supply service.

PAR: a research methodology offering usable knowledge

Participatory action research offers an effective and powerful strategy for the type of interdisciplinary research needed. It allows rapid adjustment to the different local conditions in the six countries in both Africa, Asia and Latin America. By applying a short feedback mechanism it can stay close to reality. The approach enabled rural communities and supporting agencies to share, analyse and enhance their understanding of conditions and allowed them to plan and implement problem-solving action. It offered usable and relevant knowledge for practitioners' demands. However, by the same token it offered a common framework for the comparison between the different experiences, meeting standards of appropriate rigor without sacrificing relevance. Action research has challenged the myth of a static notion of research and inquiry. It argued for 'acting' as a basis of learning and knowing (Lammerink and Wolffers, 1994). This formulation of Action Research, going back to the work of Kurt Lewin, was recaptured in Latin America and subsequently became the basis for the formulation of Participatory Action Research (PAR) (Fars Borda, 1985). It emphasised the notion of action as a legitimate mode of knowing, thereby taking the realm of knowledge into the field of practice. From Lewin comes the sentence: 'If you want to know how things really are, just try to change them' (Lewin, 1958). Participatory Action Research (PAR) aims at responding to concrete needs of a group, a social sector or a community. It aims at finding solutions to concrete problems and conflicts. In PAR some of the people of the community under study participate actively with the 'professional researchers' throughout the research process from the initial design, through data gathering and analysis to the final presentation of results and discussion of their action implications. Some of the members of the community, therefore, are actively engaged in the quest for information and ideas to guide their future actions. Dialogue between researchers and grassroots people is an important feature. Research is seen as a learning process for all involved, learning from experiences of social action.

The research methodology which we developed for this study placed great emphasis on participatory and gender-sensitive appraisal and needs assessment methods. Some of the methods and tools used emanated from the tradition of participatory rural appraisal. We used both qualitative and quantitative data collection on system performance and service, such as

distribution problems, breakdown rates, costings, demographics, local organisation, socio-economic characteristics of served and unserved households. The research implementation followed a sequence, starting with a joint preparation of a common framework for the research and method design (preparation, training of trainers/facilitators) and the selection of communities (Area Selection and Problem Identification). This was followed by a participatory situation analysis, needs assessment and problem identification and an identification of possible solutions, leading to the joint development and field testing of problem-solving strategies, methods and tools (experimentation and evaluation of possible solutions). The last part of the project, still to be completed in 1998, will focus on dissemination and the sharing of project findings and the planning and coordination of further work in order to sustain the process. This will not only include the countries concerned but will be planned on a larger scale.

PAR: in practice: knowledge more valuable than gifts[1]

A PAR team from each of the six countries together with elected men and women from rural communities and a national reference group in each country are consolidating and sharing the lessons learned from the communities' experiences in managing the maintenance, finance and use of their existing water supply systems, provided either by the government or through an NGO. The action research project has a primary objective: to develop and document a participatory research and support methodology which both the agencies and communities can continue to use in other situations and which, when faced with problems in the future, they can share with fellow water organisations and colleagues. The project also aims to establish a structured exchange of know-how between every water agency dealing with rural water management in the six countries represented, plus strengthening operational policies on, and support for, community water management. Furthermore, at the international level, the group is attempting to increase the expertise of all organisations working towards bringing about effective community water management systems.

Research teams

In 1994, the partner organisations established national research teams. Each PAR team usually comprises two or three men and women with the relevant

1. Information on the practice of PAR are based on the project's internal reports sent by the participating country project teams: Agha Khan Foundation in Pakistan, SER/Agua del pueblo in Guatemala, CINARA in Colombia, Netwas in Kenya, NEWAH in Nepal and PAID in Cameroon, as well as on field visits. The account was earlier prepared by Eveline Bolt, Norah Espejo and March Lammerink and presented by representatives of each country team at the World Congress of Participatory Action Research in Carthagena, Colombia from 1 to 5 June 1997.

technical and social science experience. The PAR teams' work began later in the year with the preparation of a situation analysis on local management of rural water supply systems in their countries. The team reviewed relevant documents, and interviewed the staff of all the agencies working in the rural water sector, asking them what their policies and strategies were for the local management of rural water systems after their work was completed. Each team also carried out an in-depth case study of the attempts of one rural community to manage its improved water supply system. These country studies provided the backbone of a planning and training workshop at which the researchers developed a design for the action research process, for selecting communities, forming local research teams and assessing and analysing local management practices and results.

Aided by three regional[2] skill-development workshops in early 1995, each team then facilitated the selection of four 'partner' communities, based on their demonstrable interest in becoming partners in the proposed action research. The communities were also chosen on the basis of how representative they were of their country's particular water management and socio-economic situation. Building rapport with the population and the existing community organisations was an important aspect of the first visits. Joint village walks and explanatory meetings were very useful in that respect. Later in 1995, community research teams were established in each participating village, elected from the community water management organisations and the water users. The community research teams received training in analysing the water situation and, in particular, in identifying problems and appropriate solutions. In early 1996, a second round of regional training workshops[3] involving the national PAR teams took stock of the preliminary research findings and discussed the involvement of community groups in the experimentation phase. The workshop participants analysed the role of the teams in field-testing, and the skills necessary for the next stage were strengthened. Most of the community research teams developed their research agendas by late 1996. Experimentation and field testing of the problem-solving strategies, methods and tools – as well as monitoring and evaluation – took place during 1997 and early 1998.

Community selection

Not surprisingly, given that PAR projects do not promise poor communities tangible rewards – no new water supply or latrines – gauging community

2. These workshops were conducted in each of the three continents: in January 1995, February 1995 and June 1995 respectively in Kathmandu, Nepal for the teams from Nepal and Pakistan; in Yaounde, Cameroon for the teams from Kenya and Cameroon; and in Cali, Colombia for the teams from Guatemala and Colombia. The first workshop focused mainly on methods and tools for problems identification and diagnosis.
3. The second round of regional workshops took place early 1996 and focused mainly on the phase of experimenting. These were organised in Islamabad, Pakistan; Nairobi, Kenya; and Quetzaltenango, Guatemala. A third round of regional workshops is planned for 1998 to focus mainly on the documentation and systematising aspect.

'interest' in the research project posed a real challenge. How does one 'sell' community management capacity to a group of villagers? Is it realistic to try and interest them in the abstract idea of a 'participatory action research process to enhance community management capacity'? Dealing with these questions called for intensive negotiations between staff and community representatives. In Colombia and Guatemala, researchers 'sold' the process with the aid of established participatory techniques, such as mapping and newspaper on the walls which enabled them to initiate discussions on the local water situation and what people considered to be the important management capacity requirements. In Nepal, the research team used a poster of a chicken hatching an egg to explain that, although the hen (the research team) will provide warmth and energy, it is the chick's (the community) responsibility alone to hatch and grow.

In most of the communities, people were very enthusiastic about enhancing their management capacity in this way. Whereas the partner selection criterion of a 'genuinely interested' community proved to be perfectly valid, most country teams added their own criteria. For example, Colombia looked at the level of poverty, while Kenya and Cameroon tried to reflect the cultural diversity of their communities, which has a major bearing on how water supplies are managed locally. In Nepal, the research team was particularly anxious to achieve a good diversity of implementing agencies.

The community research teams emerge

In order to work towards capacity building at community level, each community selected a research team. The creation and role of these teams was much more than a 'methodological step' towards ensuring community involvement; they were viewed, justifiably, as indispensable actors and agents of change, both in implementing action research, and in putting the findings and recommendations into practice. In La Sirena, a community in the hills of the Colombian city of Cali, research team members were chosen for their relevant experience and aptitude for community work. For the villagers of Ceylan in Colombia's Valle District, famous for its agro-industrial development and coffee plantations, the most important qualifications were having appropriate training and clear leadership potential. As a result, they picked a 16-year-old student who they felt already possessed the right qualities to become an effective community leader. In the Quiche zone of Guatemala, where educational standards are poor, the community put the bonus on individuals' willingness to participate. A good proportion of older, illiterate people were actively involved in the team, helping to give LRTs the popular image of reliability. Gender segregation was an issue in Pakistan, so separate men's and women's teams were established. Overall, there was broad agreement among the communities in all three continents that, to be an effective research team member, an aptitude for community work, leadership skills,

and some knowledge of local history were more important attributes than educational qualifications.

Training community research teams

As soon as they had been elected, the local research team members received training in diagnosis and research techniques. The ten women and thirteen men making up the Cali team were trained together at a two-day workshop, where they had the opportunity to talk about what they understood by the terms 'participation', 'community organisation', 'gender', 'indigenous knowledge' and 'community diagnosis'. The participants felt that the PAR techniques left a lot to be desired, and modified them to suit local circumstances. After the workshop, the local teams prepared a report, incorporating line drawings and photographs. The reports provided useful methodological guidelines for planning the next stage – the community diagnosis – which the researchers now felt they could carry out systematically. They were proud to be known as 'the water and sanitation researchers'.

Diagnosing the problem

Community diagnosis is designed and planned by project teams in collaboration with local research teams. They select a specific set of PRA techniques to facilitate the collection and the sharing of qualitative and quantitative data. Diagnosis deals with the socio-economic, technical, managerial, and hygiene beliefs and practical aspects of the existing water supply and sanitation facilities. During the diagnosis, women and men express their feelings, interest, and viewpoints using drawings, mappings and matrices. All of this data takes into account the different roles and expectations of women and men, whether it concerns water supply, water resource management, water use or local management.

In the Guatemalan village of Belen, early identification of both water problems and short-term solutions was the ideal entry point for involvement in a more general community diagnosis. In Nepal, the teams began their research by organising exchange visits between villages. The Rangapur team spent two days with their neighbours in Gajedi so they could assess the villagers' needs and make some suggestions about their water problems. After a briefing on the various water supply and sanitation schemes, the Rangapur researchers visited all the village standposts, where they talked to the users and their families. Then, at an open meeting, they discussed their findings with the villagers and made some valuable suggestions for change. Not long after, it was the turn of the Gajedi group to visit Rangapur.

A 'village walk' launched the diagnosis in the neighbouring villages of Nyen and Mbemi, in Cameroon's English speaking, western province. The PAR team, together with the village water-committee members and some district officials, spent three hours walking around both villages. They

where in the past this was done monthly. This has led to increased revenue collection. In Kiveetyo, another community in Machakos district (Kenya), where they get water from the hills which belong to another community, there is evidence of 'conflict', thus calling for conflict management and resolution strategies.

The country research team continue to play a supporting role: helping to strengthen local capacity in areas such as skills development, group building, confidence building for women and men, in forging links with other communities or organisations. They also contribute to the improvement of maintenance, payment systems, and water source protection; a small budget allows for funding of some technical improvements to the community water supply system itself. One of the main management skills to be strengthened is effective monitoring of both the research process, as well as its impact. Close, continuous monitoring facilitates adjustment of the strategies, methods and tools based on local findings and requirements. The monitoring approach is being developed with the partner organisations and the communities to ensure that it provides the best possible learning opportunity for everyone. By the end of 1998, the research teams will have carried out the final evaluation of the process, and its concrete achievements. After being summarised these findings will be analysed jointly with the respective communities and agencies.

Some preliminary conclusions of this worldwide PAR

Participatory action research undertaken by the research teams from the NGOs in representative communities have strengthened their own capacities and effectiveness. It has enhanced the problem-solving capacity of both community and support organisations. During the process the role of the researcher has clearly changed to that of a convenor, a colleague, a catalyst and sometimes of a consultant, who brought in new ideas or experiences unknown to the grassroots organisation. PAR leads to change in leadership and institutions. The wisdom is to make that transition both smooth and respectful. Leadership issues in the communities should be dealt with in an open manner. The challenge in some situations is to open up 'charismatic' leaders to new functions and responsibilities, without destroying the respect they have gained or making leaders into bureaucrats and technicians. It also means understanding change and the needs of the community, as well as galvanising the energy of community to new challenges, while remaining true to tradition and culture.

Training during the PAR is a dynamic and creative educational process, not only leading to skills development, but also building up the critical consciousness of community members, examining both their values and attitudes. Outside research teams should be able to turn research into an educative experience for people at the grassroots as they jointly search for

creative solutions and get to know the process of inquiry. PAR is a learning process for all involved and is linked directly to the identification, development and testing of specific problem-solving activities and tools together with men and women in the communities concerned (the 'action' element). Research throughout the process is not a neutral, value-free activity, but an active, questioning process leading to improvements for the communities as well as to new insights in terms of the technical development of the sector. At the level of the communities, through PAR, local theory has been developed, this being the most direct, simple, context-bound explanation of cause-and-effect in a given situation that makes sense to those with local experience. Such a local theory is situation-specific, but is generated in part from general knowledge and the rules of scientific inquiry. However, the construction and generation of local theory is empowering because those who create it learn why things are as they are, and this leads naturally to ideas about change.

In PAR, theory testing becomes a natural step in learning. Participants test their theory in action, by experimenting with different possible solutions. This action means testing and improving the local theory. Evaluation of results leads to new, improved local theory. Reflection and action in PAR form a spiral process that gradually improves knowledge and creates useful results. This testing or experimenting in all cases has been a collective action. For the main idea behind PAR is to build up more democratic forms of organisation and management. Thus consensus at the level of the community is sought about cause and effect and about what possible solutions are to be tested. The goal is to solve practical problems and develop new or improved knowledge and theory. Before each important step in the process, the broadest consensus of community members is sought. Thus research becomes a process of getting to know and interpreting social reality, with the aim of gathering sufficient knowledge to allow for the reproduction, transformation and induction of new processes in society.

At the same time it is apparent that knowledge and knowledge acquisition are dynamic developments which are never finalised nor definitive. That is why it is important, as part of PAR, for the outside research teams to clearly identify and explain throughout the process each step and each phase, in such a way that it is understood by the members of the grassroots organisation. Thus the PAR experience can also be used for other and different problems facing the communities in the future, sustaining the process of knowing. Research is not to do with looking for the ultimate answer, the definitive solution, or the final truth. It is much more a continuous process of theorising, acting and reflecting. The challenge is how to support such a continuous process, knowing that 'each place, each culture, situation, and each experience requires its own approach'. From their very conception in the early 1960s, the first participatory action research activities in rural Latin America and India proved to be effective tools for raising people's awareness and empowerment. The early experiences of this 1990s

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project suggest that PAR methodologies can enhance management capacity in the water and sanitation sector. The communities in Cameroon, Colombia, Guatemala, Kenya, Nepal and Pakistan are becoming far more involved in making important decisions while, at the same time, supporting agencies are learning to facilitate and empower them.

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