

# Waterlines

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APPROPRIATE TECHNOLOGIES FOR WATER SUPPLY AND SANITATION



Communities —  
Carrying the can

# The researchers — why knowledge is more valuable than gifts

by Eveline Bolt, Norah Espejo, and Marc Lammerink

**For two years, NGOs have been working with villagers from three continents in an ambitious attempt to develop a flexible research methodology — and strengthen community water management. Just an interesting academic exercise? Or the basis for future agency/user co-operation and real participatory planning?**

*'The knowledge we gain from this research is much more valuable than gifts. It is something that we keep for life.'*

THIS WAS THE reaction of villagers in Nkoundja, Cameroon who had just visited the neighbouring village of Nyen to find out how people there are solving problems in managing, operating, and maintaining their water systems. The visit had an immediate effect on Nkoundja's water caretaker who, after seeing how his counterpart in Nyen behaved, realized that he had to change. 'We had discussed this over and over again and his behaviour never changed', said Mr Issiaka Njankouo, one of the community research team members. 'Now his attitude has changed radically, and he is working really well.'

Such 'exchange' visits have proved to be very useful components in a participatory-action research (PAR) project in Cameroon, Colombia, Guatemala, Kenya, Nepal, and Pakistan.<sup>1</sup> In each country, an NGO water-supply agency is supporting local research on how four villages deal with improved management of their existing water supply. Through this, and together with the communities concerned, the NGOs are strengthening the capacities of the villagers to manage their water and sanitation systems. With funding from the Netherlands Government, since late 1994, the International Water and Sanitation Centre (IRC) has been facilitating the learning process in this project 'The Role of Communities in the Management of Improved Rural Water Supplies in Developing Countries'.<sup>2</sup>

A PAR team from each of the six countries, together with elected men and women from rural communities, a national reference group in each country, and an international reference group are consolidating and sharing the lessons learned from the communities' experiences in managing the

maintenance, finance, and use of their existing water-supply system, provided either by the government, or through an NGO.

This action research project has a primary objective: to develop and document a participatory research and support methodology which both the agencies and the communities can continue to use in other situations and which, when faced with problems in the future, they can share with fellow water organizations and colleagues. The project team 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. And, at the international level, the group is attempting to increase the expertise of all organizations working towards bringing about effective community water-management systems.

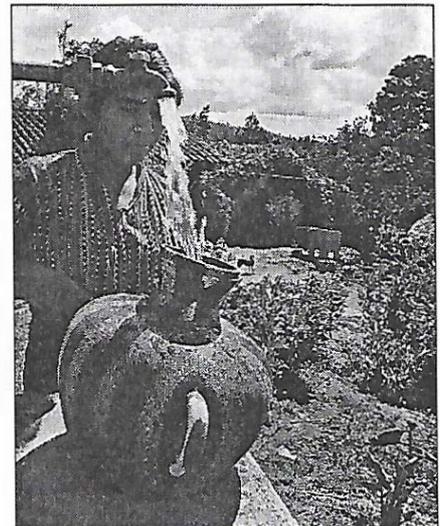
In less than two years, the process and empirical results have thrown up real insights, both into what comprehensive, gender-sensitive community management of local water resources and domestic water supply can achieve, and about which agency approaches and tools are effective in helping both rural communities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

## Research teams

In 1994, the partner organizations — all NGOs — established national participatory action research teams. Each PAR usually comprises two or three men and women with the relevant technical and/or 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 groups, and assessing and analysing local



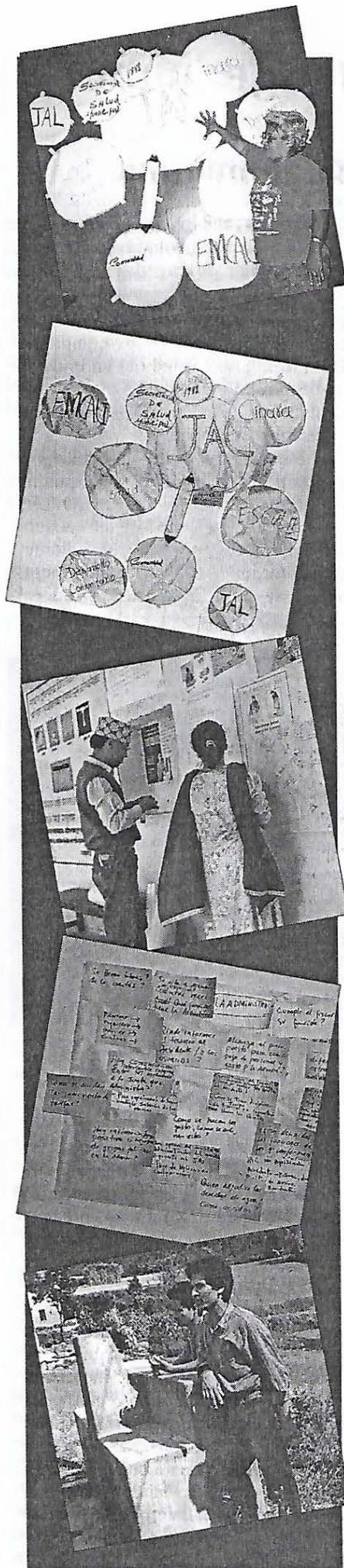
Sean Sprague/Panos Pictures

*Water supply in rural Guatemala — so much can be gained from finding out how villagers manage it.*

management practices and results. By that time, community research teams were established in each participating village, elected from the community water-management organizations and the water users.

Aided by three regional 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. Later in 1995, the community research teams received training in analysing the water situation and, in particular, in identifying problems and appropriate solutions.

Early in 1996, a second round of



Matrices, Venn diagrams, maps and village meetings in Nepal, Guatemala, and Colombia.

regional training workshops involving the national PAR teams took stock of the preliminary research findings. The main topic was: how could the community groups' proposals be included in the next phase — experimentation with the communities? 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 are now developing their research agendas. Experimentation and field-testing of the problem-solving strategies, methods, and tools — as well as monitoring and evaluation — will take place later this year and in 1997.

### Community selection

Not surprisingly, given that PAR projects do not promise poor communities tangible rewards — no new water supply or latrines — gauging their '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 an abstract idea such as a 'participatory action-research process to enhance community-management capacity'?

Dealing with these questions called for intensive negotiations between agency staff and community representatives. In Colombia and Guatemala, researchers 'sold' the process with the aid of 'established participatory techniques, such as mapping, and newspapers 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 teams emerge

In order to work towards capacity building at a 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 can be 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.

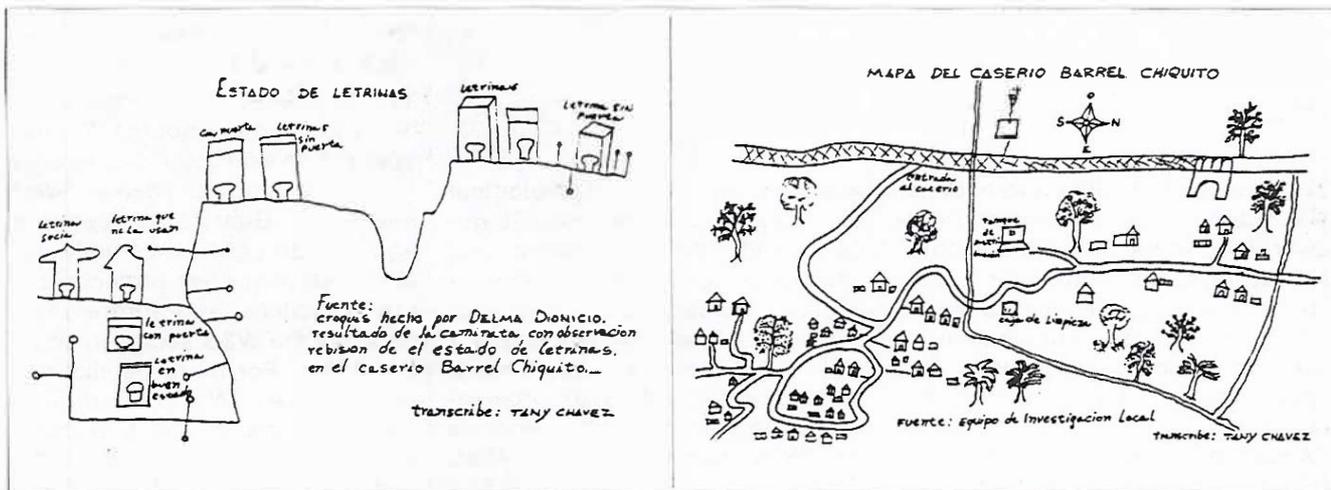
In the Quiche zone of Guatemala, where educational standards are poor, the community put the onus on individuals' willingness to participate. A good proportion of older, illiterate, people are actively involved in the team, helping to give LRTs the popular image of reliability. Gender segregation was an issue in Pakistan, so separate men's and women's teams were established.

Overall, there is 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 are more important attributes than educational qualifications.

### Training

As soon as they have been elected, the LRT members receive training in diagnosis and research techniques. The 10 women and 13 men making up the Cali team trained together at a two-day workshop, where they had the opportunity to talk about what they understood by the terms 'participation', 'community organization', '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 — community diagnosis — which the researchers now felt they could carry



The village of Barrel Chiquito: Map 'A' (left) shows the results of the village walk, in which the local research team mapped latrines — in varying states of repair; Map 'B' shows the whole village, incorporating pathways and water-tanks.

out systematically. They were proud to be known as 'the water and sanitation researchers'.

## Diagnosing the problem

In the Guatemalan village of Belen, early identification of both water problems and short-term solutions was the ideal introduction to going ahead with a diagnosis of the wider community.

In Nepal, the teams began their investigations by organizing 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 identified particular features, evaluated the performance of the water-supply system, listened to people's complaints about the service, and learned more about the local palm and raffia tree industry which, while providing the community with its main source of income through the production of oil, wine, baskets and bags, swallows up a sizeable amount of its water.

The walk not only established contact with the villagers, it also acted as a launch pad for the village mapping. 'In the afternoon, when we were making up the two maps, the group of participants

was considerably bigger. This continued the next day when [the villagers] all drew the Venn diagram to show the key individuals and institutional relationships for water-supply decision-making' said Mr Amouye of the Cameroon PAR team.

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, interests, and viewpoints using drawings, mapping, 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; the depth of the diagnosis depends on the individual community. The countries' experience so far suggests that diagnosis is a continuous process: communities will continue to identify new problems, as well as resources and social changes, irrespective of the stage reached by the research project.

## Problem-solving strategies

As we write, in the late summer of 1996, the communities are developing their own strategies, methods, and tools to address managerial problems, and to monitor the effects of any reforms on service performance. Next, they will put these problem-solving strategies to the test.

The country research teams continue to play a supporting role: helping to strengthen local capacity in areas such as skills development, group building, confidence building for women and

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# diary

21-2 November 1996. International Workshop: The Challenge of Post-war Reconstruction of Water Supplies, York, UK. Forum for practitioners and academics to share their experiences in implementing aid in Bosnia-Herzegovina, and put forward recommendations. Contact: *Alp Ozerdem, Institute of Advanced Architectural Studies, PRDU, University of York, The King's Manor, York, YO1 2EP, UK. Fax: +44-1904 433949. E-mail: ao102@york.ac.uk*

21-5 April 1997. 8th International Conference on Rainwater Catchment Systems, Teheran, Iran. Topics will include: technology; management; environmental, socio-economic, religious and cultural aspects. For details, contact: *Mr J. Ghoddousi, Conference Secretariat, PO Box 13445-1136, Teheran, Iran. Tel: +98 21 6418335. Fax: +98 21 6407214. E-mail: rain@neda.net.ir*

23 April-3 May 1997. Fifth Scientific Assembly of the International

Association of Hydrological Sciences, Rabat, Morocco. Symposia and workshops will cover: freshwater contamination; human impact on erosion and sedimentation; water-resources assessment and sustainability. For more details, contact: *IAHS '97 Organizing Committee, Direction Generale de l'Hydraulique, Casier Rabat, Chellah, Morocco. Fax: +212 7 778696.*

29 June-3 July 1997. AWRA 1997 Annual Symposium, Keystone, USA. More information from: *Dr John J. Warwick, T University of Nevada, Reno, 1000 Valley Road, Reno, NV 89512-0180, USA. Fax: +1-702 784 1953. E-mail: keystone@dream.unr.edu*

14-7 July 1997. Second Malaysian International Water Management Technology, Equipment and Control Systems Exhibition, Kuala Lumpur, Malaysia. For more details contact: *Desmond Liew, Malaysian Exhibition Services Sdn Bhd, 468-1B Batu 3, Jalan*

*Ipoh, 51200 Kuala Lumpur, Malaysia. +60 3 443 7241.*

15-9 September 1997. Water Africa '97 and Second Southern Africa Water & Wastewater Conference, Harare, Zimbabwe. Theme: 'Water security: Guarding resources against drought and pollution'. Discussion of past projects, current practices and future directions for the W&S sector in southern Africa. For more details, contact: *Tracey Nolan, Exhibition Director, African Conferences & Exhibitions Ltd, 37 Upper Duke Street, Liverpool L1 9DY, UK. Fax: +44 151 709 7801. E-mail: africon@robart.demon.co.uk*

5-7 November 1997. Third International Conference on River Flood Hydraulics, Stellenbosch, South Africa. Topics include: Environmental, social and economic aspects of floods; flood hydraulics research; and management of developments on flood plains. Deadline for paper submission is 17 January 1997. For more details, contact: *Ms Jacqueline Watts, Conference Organizer, HR Wallingford Ltd., Howbery Park, Wallingford, Oxon OX10 8BA, UK. Fax: +44 1491 832233.*

men, and in forging links with other communities or organizations. They also contribute to the improvement of maintenance, payment systems, and water-source protection; a small budget allows them to fund 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,

The monitoring approach is being developed with the partner organizations' and the communities to ensure that it provides for the best possible learning opportunity for everyone.

## Better by PAR

By the end of 1997, the team will be able to carry out its final evaluation of the process, and its concrete achievements. After being summarized, and

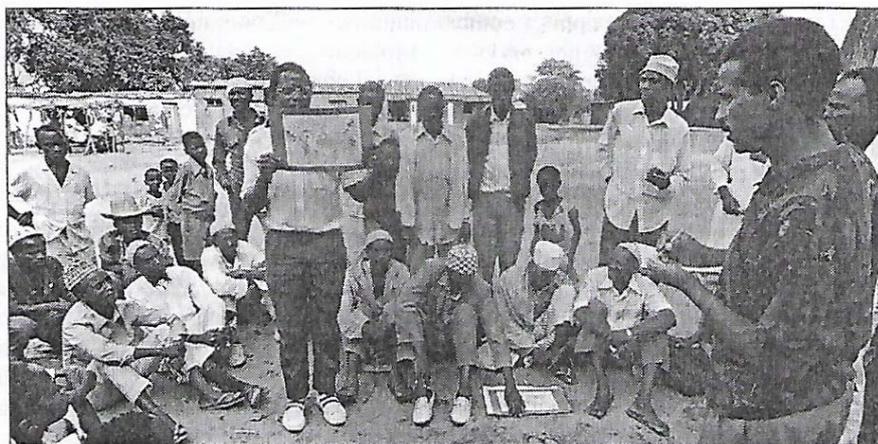
From their very conception in the early 1960s, the first participatory action research activities in rural Latin America and India proved to be effective tools for raising people's awareness and empowerment.

The early experiences of this 1990s project reinforce the argument that PAR methodologies do 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 communities.

## Reference

1. This article is based both on internal project reports from the participating country project teams (see box on page 13), and field visits.
2. See *Waterlines*, Vol. 13, No. 4.

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as well as impact. Close, continuous monitoring facilitates adjustments of the strategies, methods, and tools based on local findings and requirements.

complemented by up-to-date news of the latest developments, these findings will be analysed jointly with the respective communities and agencies.