

MEMO

To: All staff
From: Phil and Norah
Date: 13 November, 1992
Subject: COMMUNITY MANAGEMENT WORKSHOP, SUMMARY REPORT

Summary

The workshop was held at IRC between 4-10 November, 1992. A core group of 14 participants attended throughout, with four others attending for parts of the meeting. Nine of the participants are working in projects and programmes in the field which are seeking to develop strong elements of community management. A full list of participants is attached.

Seven case studies of community management were reviewed at the workshop, and additional background papers provided by IRC and the UNDP/World Bank Water and Sanitation program. A list of the papers reviewed is attached, and a full set will be deposited in the library.

The workshop was interesting and productive, and felt to be very worthwhile. A publication will be produced as quickly as possible, for widespread circulation.

A summary list of key findings is given below. Although written in general terms, all of these findings can be substantiated with evidence from the field, as the workshop publication will show.

The workshop was a real team effort involving many people in IRC. Jan Teun and Christine were particularly supportive, and Hans' efforts in maintaining the enthusiasm of the Governing Board are also appreciated. The support provided by Anneke, Izabella, Hanneke, Michel and Lauren ensured a very happy and easy to run workshop, and very much impressed the participants.

Key findings

* **Community management means "putting the community in charge".**

The workshop avoided an over-specific definition as this was considered to be too limiting. Community management is an approach which has certain defining characteristics which distinguishes it from other approaches, including a relationship based on partnership between the community and agency.

* **Community management is something new and different.**

While it has important continuities with, and builds upon, approaches based on community participation, it has new and wide reaching implications for both communities and agencies. Supporting community management certainly will not mean less work for agencies. It means a different direction, moving from provision to facilitation, and demands work of higher quality.

* **Community management is an approach, not a formula.**

Community management can take many forms, and can reflect a wide range of "balances" between community and agency contributions. Whatever the balance, however, it requires in all cases a substantial resource input from the community. It also requires a continuing partnership between communities and agencies, and communities and other supporting partners (including the private sector and, very importantly, other communities).

* **Many communities are demonstrating a genuine willingness and capacity to take on management roles.**

Under the right conditions, community management works very well. Many communities have considerable capacity, if properly supported and motivated, and assisted to develop suitable tools and methods.

* **Community management not only helps to solve water and sanitation problems but can also create an environment for broader development benefits.**

Putting the community in charge can help solve problems such as the covering of recurrent costs and sustaining system reliability. It can also build capacity and confidence for wider development efforts, both within and beyond the water sector.

* **Community management not only addresses issues of sustainability but can also be a way to involve more communities in water and sanitation improvement programmes.**

The taking up of a larger share of responsibility by communities frees supporting agencies to move forward in supporting more communities, without having to constantly go back to maintain older systems.

* **In building up the community management approach, new indicators are required to recognize and reward the "process" inputs and outputs which are essential to its success.**

Many agencies in the field are trying to set in motion process-based approaches which are less easy to measure than technical outputs, like numbers of wells installed and so on. Governments and funding agencies may contradict these efforts if they continue to confine themselves to conventional progress indicators, and do not reward efforts towards building capacity through less tangible processes. New tools and methods are required to monitor, measure, recognize, and reward such work.

* **Advocacy at all levels is required to support the further development of the community management approach.**

The full meaning and implications of taking up and supporting a community management approach must be clearly spelled out and communicated at all levels, from the community to global levels. This is essential to allay fears and misconceptions, and also to support the establishment of appropriate policy and legal frameworks necessary to create an "enabling environment" in which community management can flourish.

International Workshop

***THE ROLE OF COMMUNITIES
IN THE MANAGEMENT OF IMPROVED
WATER SUPPLY SYSTEMS***

4-10 November, 1992

AGENDA

IRC International Water and Sanitation Centre,
The Hague,
The Netherlands.

*In collaboration with the UNDP/World Bank Water and Sanitation Program,
UNICEF, and WHO.*

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|------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none">• Confirmation and adoption of workshop findings and conclusions• Closing of workshop |
|------------------------------------------------------------------------------------------------------------------------------------------------|

AIM

The aim of the workshop is to review the roles currently being

AGENDA

The agenda will be flexible and open, to allow participants to play a full role in influencing the course of discussions. The agenda shown is suggested as an outline.

ACCOMMODATION

Participants are free to make their own hotel arrangements in The Hague. If requested, IRC will be happy to assist in identifying suitable accommodation and making bookings.

COSTS

Participants are expected to find their own funds to cover costs for travel, hotel accommodation, meals, and personal expenses. As a guide, the current UN daily subsistence allowance for The Hague is US\$209.

Workshop documentation, lunches and refreshments will be provided by IRC.

REGISTRATION

Participants should confirm their intention to attend the workshop by writing to Phil Evans, Programme Officer, IRC International Water and Sanitation Centre. Letters or faxes should reach IRC no later than Friday, 18 September, 1992.

LOCATION

IRC International Water and Sanitation Centre,
Prinses Margrietplantsoen 20,
The Hague,
The Netherlands.

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AIM

The aim of the workshop is to review the roles currently being played by communities in managing improved water supply systems. Using case study materials as a basis for discussion, the workshop will examine the potential of community management in contributing to sustainable development and identify gaps in knowledge and directions for further work.

OBJECTIVES

- To identify and document current experience of management by communities of improved water supply systems.
- To review the expectations associated with community management and its relationship to sustainable development.
- To identify the implications for both agencies and communities of further developing community management roles.
- To prepare a follow-up plan of activities to further strengthen the effectiveness of the role of communities in managing improved water supply systems.

OUTPUTS

The principle output from the workshop will be the production of a review publication on current experience. This will be based on the case study material, a background paper to be drafted by IRC, and the findings and conclusions of the workshop. The workshop will also produce a plan of activities for further work.

PARTICIPANTS

The workshop will be attended by professionals from developing countries, international organizations, and other relevant bodies, with a direct interest and significant experience in supporting community management. Participants from developing countries will play a leading role in the workshop in presenting case study experience from the field.

METHODOLOGY

The workshop methodology will place strong emphasis on the use of participatory problem-solving and analytical techniques, in a combination of plenary and group work sessions. Formal presentations will be kept to a minimum.

WORKSHOP AGENDA

Wednesday, 4 November

Overview and identification of issues

- Plenary:
- Workshop opening
 - Summary review of case studies and background paper
 - Review of definitions of community management
 - Identification of key issues for discussion of community roles, and formation of working groups

Thursday, 5 November

Communities as managers: present experience and future potential

- Groups:
- Examination of the roles of communities as managers of improved water supply systems
- Plenary:
- Report back and discussion
 - Identification of key issues for discussion of agency roles and formation of groups

Friday, 6 November

Agency support: current roles and future needs

- Groups:
- Examination of the current roles of agencies in supporting community management and identification of future needs
- Plenary:
- Report back and discussion

Saturday, 7 November

The state of knowledge

- Plenary:
- Integration of workshop findings to date and summing-up of current state of knowledge

Monday, 9 November

Action planning

- Plenary:
- Summary reappraisal of key issues and state of knowledge
 - Development of action planning matrix and formation of groups
- Groups:
- Development of action plans around key issue areas

Tuesday, 10 November

Summing up

- Plenary:
- Integration and adoption of action plans
 - Confirmation and adoption of workshop findings and conclusions
 - Closing of workshop

AGENDA

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WHO Collaborating Centre / Centre Collaborant de l'OMS

**International Workshop
THE ROLE OF COMMUNITIES IN THE MANAGEMENT OF IMPROVED WATER
SUPPLY SYSTEMS**

**IRC, The Hague, The Netherlands
4-10 November, 1992**

Case studies and papers

- **Background paper, Phil Evans, IRC**
- **Sustaining community water supply. Some questions on community participation. PAID, Douala, Cameroun.**
- **Community management in rural water and basic sanitation programmes. Fabian Gonon Ortiz, Agua del Pueblo, Guatemala.**
- **Honduras: Tegucigalpa urban water program. The Tegucigalpa model. Jean Gough, UEBM/SANAA, Honduras.**
- **Community self-financing for water supply and sanitation systems. A promising approach to community management and financing of water and sanitation facilities. Hadi Sucipto and Dan O'Brien, CARE, Indonesia.**
- **Community participation in the management of village physical infrastructure in the Northern Pakistan: an example of a water supply project in the Hunza Valley. Manzoor Hussain, Aga Khan Rural Support Programme, Pakistan.**
- **Community management systems for rural water supply. Case study in Uganda. Kiwe L.Sibunya, UNICEF, Uganda.**
- **Support Rural Water Supply Department project, Dhamar, Republic of Yemen. Abdul S.Zubayri and A.W.J.M.Vriens, SRWSD project, Yemen.**
- **The contribution of people's participation in rural water supply: findings from 122 projects. Deepa Narayan, UNDP-World Bank Water Supply and Sanitation Program, INUWS, World Bank, Washington D.C., USA.**

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International Workshop
THE ROLE OF COMMUNITIES IN THE MANAGEMENT
OF IMPROVED WATER SUPPLY SYSTEMS
IRC, The Hague, 4-10 November, 1992

LIST OF PARTICIPANTS

<u>Name</u>	<u>Organization</u>	<u>Country</u>
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Brian Appleton	Rapporteur	UK
Norah Espejo	Facilitator, IRC	N'lands
Phil Evans	Facilitator, IRC	N'lands
Fabian Gonon	Agua del Pueblo	Guatemala
Jean Gough	UEBM/SANAA	Honduras
Manzoor Hussain	Aga Khan RSP	Pakistan
Laban Kirya	PAID	Cameroun
Brian Locke	WSS Collab.Council, WHO	Switz.
Dan O'Brien	CARE	Indonesia
Kiwe L. Sebunya	UNICEF	Uganda
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Abdul S. Zubayri	Support RWS Dept.Project	Yemen

+ part-time

* from Monday 9/11



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**International Workshop
THE ROLE OF COMMUNITIES IN THE MANAGEMENT
OF IMPROVED WATER SUPPLY SYSTEMS
IRC, The Hague, 4-10 November, 1992**

TIMETABLE

WEDNESDAY, 4 NOVEMBER

Overview and identification of issues

08.45-09.00	*	Registration of participants (tea/coffee)
09.00-10.30	*	Introductions
	*	Review of agenda
	*	Workshop opening (IRC Director)
	*	Briefing on logistics and arrangements
10.30-10.45		BREAK
10.45-12.45	*	Identification of key issues
12.45-13.45		LUNCH
13.45-15.15	*	Summary of key points and issues from case studies and papers
15.15-15.30		BREAK
15.30-17.00	*	Summary of key points and issues from case studies and papers (cont'd)
	*	Grouping and clarification of issues, and formation of working groups
	*	Daily evaluation

THURSDAY, 5 NOVEMBER

Communities as managers: present experience and future potential

09.00-10.30	*	Quick plenary to confirm group tasks
	*	Group work begins
10.30-10.45		BREAK
10.45-12.45	*	Group work (continued)

12.45-13.45 LUNCH

13.45-15.15 * Groups report back

15.15-15.30 BREAK

15.30-17.00 * Integration of group findings
* Clarification of key issues for discussion of agency roles, and formation of groups
* Daily evaluation

FRIDAY, 6 NOVEMBER

Agency support: current roles and future needs

09.00-10.30 * Quick plenary to confirm group tasks
* Group work begins

10.30-10.45 BREAK

10.45-12.45 * Group work (continued)

12.45-13.45 LUNCH

13.45-15.15 * Groups report back

15.15-15.30 BREAK

15.30-17.00 * Integration of group findings
* Daily evaluation

SATURDAY, 7 NOVEMBER

The state of knowledge

09.00-10.30 * Integration of workshop findings to date, discussions and clarification of key issues

10.30-10.45 BREAK

10.45-12.30 * Integration of workshop findings to date, discussions and clarification of key issues (cont'd)
* Summing-up of current state of knowledge
* Identification of issues for action planning
* Mid-point evaluation



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International Workshop

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SUPPLY SYSTEMS**

IRC, The Hague, The Netherlands
4-10 November, 1992

BACKGROUND PAPER

Prepared by
Phil Evans

October, 1992

PREFACE

This document has been prepared as a background paper for the international workshop "The role of communities in the management of improved water supply systems" to be held at the IRC International Water and Sanitation Centre between 4-10 November, 1992. Financial assistance for the preparation of this document, and for general preparations for the workshop, was provided by the UNDP/World Bank Water and Sanitation Program. The encouragement and support of Mr. Frank Hartvelt, Deputy Director of the Division for Global and Inter-regional Projects of UNDP, is particularly appreciated. Additional financial support to IRC's work on community management has been provided by the Directorate-General for International Cooperation (DGIS) of the Netherlands Ministry of Foreign Affairs.

The document was prepared by Phil Evans (Programme Officer), and has benefited greatly from the assistance, advice, and comments of Jan Teun Visscher (Senior Programme Officer), Christine van Wijk-Sijbesma (Programme Officer), and Norah Espejo (Research Officer). Additional comments were also received from Michael O'Brien (IRC Consultant) and Eveline Kamminga (IRC Consultant).

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2. COMMUNITY MANAGEMENT AS A "GUIDING PRINCIPLE"

Community management was placed on the global agenda for the 1990s by its inclusion as one of the four guiding principles for sustainable water and sanitation development in The New Delhi Statement:

THE NEW DELHI STATEMENT

In September, 1990, hundreds of delegates from around the world gathered in New Delhi, India, to attend a Global Consultation on Safe Water and Sanitation for the 1990s. The meeting ended with the issuing of a statement identifying four guiding principles for sustainable water and sanitation development:

- 1. Protection of the environment and safeguarding of health through the integrated management of water resources and liquid and solid wastes.*
- 2. Institutional reforms promoting an integrated approach and including changes in procedures, attitudes and behaviour, and the full participation of women at all levels in sector institutions.*
- 3. Community management of services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes.*
- 4. Sound financial practices, achieved through better management of existing assets, and widespread use of appropriate technologies.*

Source: UNDP, 1990a.

3. THE GOALS OF COMMUNITY MANAGEMENT

Placing a larger share of the responsibility for operating and maintaining water and sanitation systems in the hands of communities is seen as a way of:

- * *Improving reliability.*
- * *Ensuring sustainability.*
- * *Increasing cost effectiveness.*

Many governments in developing countries are unable to meet the recurrent costs, or provide the necessary manpower, to operate and maintain new systems. Communities have little choice but to take on these responsibilities themselves or return to using traditional sources. Community management has many goals:

GOALS OF COMMUNITY MANAGEMENT

- * *Improve system reliability.*
- * *Improve the attainment of health and other benefits.*
- * *Promote greater democracy and equity in the development process.*
- * *Promote a more prominent role for women in development.*
- * *Ensure more appropriate choices of technology and service level.*
- * *Reduce the costs to agencies of improvements by making better use of local resources, skills and knowledge.*
- * *Build community confidence and capacity to undertake further development activities.*

(Sources: Cox and Annis, 1982; Dworkin, 1982; Whyte, 1984; van Wijk and Visscher, 1987; UNDP/World Bank, 1988; McCommon et al., 1990; UNDP, 1990a; Narayan-Parker, 1990; Franceys, 1991; Indonesia-Australia Development Cooperation Programme, 1991; Renard, 1991).

4. WHAT IS COMMUNITY MANAGEMENT?

Management vs. participation

Community management is "*more than participation*" in that it "*emphasizes the communities' own decision-making power over those water supplies or components for which they hold or share responsibility.*" (Wijk, 1989).

While it is possible for a community to participate in a water supply improvement programme designed and controlled by an outside agency, it is not possible for the community to manage the system without having significant autonomy and decision-making powers. The three basic components of community management can be defined as responsibility, authority, and control:

BASIC COMPONENTS OF COMMUNITY MANAGEMENT

<u>Responsibility:</u>	<i>The community takes on the ownership and attendant obligations of the system.</i>
<u>Authority:</u>	<i>The community has the legitimate right to make decisions regarding the system on behalf of the users.</i>
<u>Control:</u>	<i>The community is able to carry out and determine the outcome of its decisions.</i>

Source: McCommon et al., 1990.

Characteristics of community management

Community management is strongly linked to the idea that communities own their water supply system. As owners they have responsibilities and decision-making powers:

CHARACTERISTICS OF COMMUNITY MANAGEMENT

Community responsible for:

- * *Maintenance and repair*
- * *Regulation of use*
- * *Local management organization*
- * *Financing*

Community decides on:

- * *Technology choice*
 - * *Service level*
 - * *Form of local organization*
 - * *Use regulations*
 - * *Financing mechanism*
-

Top-down, bottom-up, or partnership?

Choosing community management is more than a simple choice between a top-down or bottom-up approach:

"Rather, it is the outcome of a collaborative partnership between the community and the government in which neither is dominant and each understands and accepts its role." (McCommon et al, 1990).

The idea that community management should be based on a partnership suggests that limits are recognized. Although communities may be able to take on a very substantial share of management responsibility, agency involvement may always be required to some degree.

The principle agency role in the future has been seen by some to be that of facilitating management by communities (cf. Briscoe and de Ferranti, 1988). This can involve anything from establishing suitably supportive legal and policy frameworks, to providing skills training and ensuring that the necessary spare parts are locally obtainable.

Water management on a broader scale means that governments will always have an overall responsibility to ensure that national resources are protected and properly used, and national public health standards maintained. Certain technical requirements, such as the maintenance of sophisticated water treatment works or the monitoring of water quality, may also be beyond the capacity of communities to perform. What these limits are remains to be seen.

Ownership or responsibility?

The idea of community ownership raises complex questions. Sometimes communities may not perceive themselves as the owners of systems for the very good reason that from a legal standpoint they do not have ownership

rights. The important question is not so much "who owns the system?" as "who is responsible for taking care of it?" (Wood, 1983). Many business enterprises are run by managers who do not own them, but who nevertheless accept responsibility for their success or failure. Acceptance of responsibility is highly important. In India communities were found to have a very low level of perception of their own role as managers, with handpumps being seen as the government's responsibility. They therefore did very little to take care of them (Mukherjee, 1990).

Ownership in a legal sense may not be essential to ensure that communities take responsibility for improved water supply systems. Even when communities do acknowledge "ownership" of a water supply system, they may not always feel that they are in control of it. A project evaluation in Rwanda found that while community members said they were the owners of their water systems, they perceived decision-making authority over them as originating from outside the community (Coreil and Beaudoin, 1989).

5. TRADITIONAL MANAGEMENT OF WATER SYSTEMS

The management of water supplies by communities is nothing new. At a common sense level, it is obvious that communities have managed their own water supplies (if not "modern" water systems) for thousands of years. At the same time, new water supply systems imported from the outside make new demands and may require new approaches. National social and economic developments can also undermine pre-existing community management systems and reduce their appropriateness and effectiveness in new settings.

The long history, and rapid decline, of the falaj system in Oman points to some interesting lessons. Communities took on complex management tasks and successfully ran water supply systems imposed from the outside for hundreds of years, entirely with local resources. Their success depended on a common interdependence on the system by all members of the community, with no viable alternatives being available. Community cohesion and the absolute need for the water provided by the system were the key ingredients for success. Once these two factors were removed, community capacity to continue to manage and maintain the systems began to break down. This had nothing to do with the actual ability of communities to take care of the systems, but was directly related to changes in circumstances that affected their willingness to do so when other options became available.

TRADITIONAL WATER MANAGEMENT IN OMAN

The falajes were built in Oman following its occupation by invaders from Persia some 2,000 years ago. Water is tapped from underground and is run by gravity to the surface through tunnel systems, sometimes several kilometres long. Once it reaches the surface, it is channelled to subscribers for irrigation, livestock watering, and human consumption, on the basis of complicated and well-regulated distribution and payment systems. The tunnels and channels need constant repair and problems of tunnel collapse are persistent. During droughts, which are frequent, distribution is carefully rationed and extensive repairs undertaken, both to improve the flow during the drought itself and to subsequently improve the efficiency of the system when the drought breaks. Today, falajes remain the dominant form of water supply in rural areas, with 4,000 systems serving 60% of the population outside the towns and cities, but their future is highly uncertain.

Although the falaj was a system imposed from the outside, with no indigenous knowledge now remaining of how they are constructed, complex local management systems were developed to maintain and run them. Responsibility for falajes has been passed down from generation to generation through a customary office-holding system. Systems were fully self-financing and entirely run on local skills and resources. The impact of the development of the oil industry in the region, and the new economic opportunities this has brought, has served to undermine the interdependence and community cohesion that was the basis for success.

In the past, when a falaj broke down the community had no alternative but to work together to restore the water supply. National economic development has meant that other options are now available. The typical response today to drought or breakdown of the system is to leave the village to seek the funds to build a private water supply. This has had a devastating effect on the falaj system, and its days now seem numbered. The poorest members of communities, who are unable to seek earnings on the outside, continue to rely on falajes but lack the resources to keep the systems going. Ironically, national development has both undermined an effective local management system and increased inequity in rural communities.

Sources: Sutton, 1984; Birks, 1984.

Influence of traditional leaders

It has been said that new community management systems should build on existing community traditions and institutions. Whether considered by agencies or not, indigenous systems and traditional leadership in any case often play an highly important role.

In Zimbabwe elected water committees have official responsibility for community maintenance activities, but traditional leaders are just as influential in deciding how these tasks should be carried out (Cleaver, 1991). In Yemen, traditional leaders play important roles in local water supply management, though often at the expense of women, who have been under-represented at the management level as a result (Blokland et al, 1990; Horst, 1990).

A recent IRC publication notes that in many countries, chiefs and councils of elders remain very powerful. These should be acknowledged, but at the same time "it must be recognized that traditional leaders do not necessarily represent the whole community" (IRC, 1991). In Lesotho, the involvement of traditional chiefs in local rural water supply management was found to produce very mixed results (Feachem et al, 1978). Traditional authority systems are always likely to make their presence felt. Acknowledging these systems and where possible seeking ways to integrate them, may be an important first step towards the development of effective local management organisations.

Local knowledge and community management

Although it is often said that development programmes should build on local knowledge and experience, this is often overlooked in practice. In supporting the further development of community management, more information will be needed about existing traditional knowledge and indigenous approaches to water management.

The current literature in the water sector on community management pays little or no attention to these issues. A brief review of literature from other sectors indicates, however, that there is much to be learned from the way in which people manage water supplies without outside assistance. A recent review commissioned by the FAO of local knowledge and management practices in Africa (Niamir, 1990) contains a number of interesting examples. These are summarized in the table.

While it would be a mistake to assume that local knowledge and practices always provide the best solutions, greater efforts need to be made to both acknowledge that local solutions do exist and to make serious efforts to link new approaches to existing ideas.

LOCAL KNOWLEDGE AND TRADITIONAL MANAGEMENT OF WATER SUPPLIES. SOME EXAMPLES FROM AFRICA.

COUNTRY	PEOPLE	OBJECTIVE AND METHODS
Ethiopia	Borana	<p><i>Water source protection:</i> Silt is cleaned out from ponds, and thorn fences built around them to protect the slopes.</p> <p><i>Water point management:</i> Well users form a council, and delegate authority over the well to a clan elder under the direct supervision of a council of elders. The elder in charge is responsible for organizing use and maintenance of the well.</p> <p><i>Ownership and access to wells:</i> Permanent wells are owned by clans, but access to them does not necessarily depend on clan membership but on negotiations based on manpower contributions to digging and maintenance.</p>
Mali	Tuareg	<p><i>Water treatment:</i> Small holes are dug in ponds and filled with soil from termite mounds to precipitate impurities.</p>
	Bambara	<p><i>Ownership of wells:</i> Deep wells dug through rock, or which need expensive materials to construct them, are usually owned by the village or ward. Shallow hand-dug wells are usually owned by the individual household.</p>
Mauritania	Fulani	<p><i>Detection of groundwater:</i> Use of a broad variety of indicators, based on topography, geology, and presence of certain plant and animal species. Shallow aquifers found in areas of natural ponds, or in mountain depressions, or indicated by the presence of certain tap-rooted trees and perennial grasses. Presence of</p>

certain species of wildlife, such as wild boars, caimans, amphibious lizards, tortoise, butterflies, some bird species, and termites, said to indicate moist soils. Well diggers know they must dig all the way through red or grey clays and arrive at a sandy layer before water will be found.

Assessment of water quality. Good quality groundwater which is clear, sweet, and has a good mineral content is indicated by presence of certain trees and plants, and associated with deeper wells. Similar indicators used to assess quality of pond water. Bad pond water indicated by the presence of the grass *Echinochloa pyramidalis*. Water quality also tested by dipping a leather container into it. Good water does not effect it, but as water quality declines it discolours the leather to different degrees. Water quality is also evaluated by its effect on level of contentment and milk yield of livestock.

Senegal	Fulani	<i>Water treatment:</i> Bark of <i>Boscia senegalensis</i> mixed with termite mound soil, acidified curdled milk, and salt, added to pond water for human consumption.
Somalia	Somali	<i>Water point management:</i> The northern Somali elect committees of 3-20 members to manage communal wells. The committees are responsible for allocating water to community members and visitors, guarding the well, devising and enforcing rules, charging fees, and maintaining the well.
Tanzania	Samburu	<i>Ownership and access to wells:</i> Each well belong to the household which dug it. Outsiders must get permission from the owner before using a well, but in practice permission can not be refused.
Zambia	Tonga	<i>Access to wells:</i> Outsiders can use wells if they contribute to their maintenance.

6. LOCAL ORGANIZATION FOR COMMUNITY MANAGEMENT

Water committees and other organizations

It is generally assumed that new water supply technologies need new forms of local organization to manage them.

Governments and donor agencies typically require communities to establish water committees to coordinate local management of new schemes. As an alternative, the necessary management tasks can be undertaken by existing development committees or other similar organizations (Wijk-Sijbesma, 1981). Which is more appropriate depends on local circumstances, and ideally should be decided by the community itself.

The level of organization (from individual household upwards) may have an important influence on the success of community management. In a successful handpump project supported by the NGO Yayasan Dian Desa in Indonesia, householders opted to organize themselves around private or small group wells, rather than communal water points. They believed this would avoid conflicts over sharing, amount of water use, and payment (Sudjarwo, 1988).

The degree of autonomy of local organizations can also vary, with some being closely tied to formal local government institutions and others being much more informal and independent (Wijk-Sijbesma, 1981).

Tasks of water committees

The tasks of water committees and other local management organizations can cover a wide range, and in part depend on the agreed division of responsibility between the agency and the community. A typical task description for a village water committee is shown below. Helping

communities to build the capacity to undertake these responsibilities is a major support task for agencies.

TASKS OF A COMMUNITY WATER COMMITTEE

- * *To represent the community in contacts with the agency*
- * *To organize contributions by the community, in cash or kind, towards construction, and towards operations and maintenance*
- * *To organize proper operation and maintenance, including supervision of caretakers*
- * *To keep accurate records of all payments and expenditures*
- * *To promote hygienic and effective use of the new facilities*
- * *To hold regular committee meetings to discuss and decide on issues, procedures, and problems*
- * *To inform the community regularly about decisions and to report on revenues and expenditures*

Source: IRC, 1991.

Election or selection?

Most donor agencies prefer that community water organizations are democratically elected and represent all interests within the community. In many cases, for example, it is insisted that women should be included. This approach does not always fit in with local practice, and communities sometimes find it difficult to adjust to such demands. Open elections may be seen as humiliating for those who lose, or threatening to traditional leaders. While it is preferable that water committees represent everyone, voting may not be the best or only way to achieve this.

Leaders and followers

An often unrecognized factor in community management is the importance of energetic individual leaders in mobilizing community enthusiasm and interest in undertaking management tasks.

In a study of community maintenance covering 480 water points in Zimbabwe it was found that water committees were less important for success than the presence of a dynamic local leader who ensures that the work gets done (Cleaver, 1991). In a study of local water associations in Finland it was found that the presence of a "champion" was often essential for their success (Katko, 1992).

Conflict or cohesion?

The case of the falaj system in Oman pointed out the importance of community cohesion as a factor contributing to successful community management.

A study in Yemen suggests that cohesion does not necessarily mean that communities always need to act harmoniously. If properly regulated and resolved, arguments and disputes can actually serve to strengthen cohesion by providing an important source of validation for local management rules (Vincent, 1990).

Competition for water resources can be a positive force in strengthening willingness to manage. This can work provided there is an adequate framework in place to settle disputes if and when they arise.

7. PLANNING AND COMMUNITY MANAGEMENT

To improve the prospects for success, community involvement should begin as early as possible in project development. If communities are directly involved in planning new schemes and deciding how they are to be run the chances are much better that the development will meet their own felt needs (cf. Briscoe and de Ferranti, 1988; Narayan-Parker, 1990; Franceys, 1991; IRC, 1991; Rondinelli, 1991).

Attempts are being made to develop techniques to involve communities more closely in planning, but there is still a lot to learn. At the same time, it is important to recognize that governments may wish to pass management responsibilities to communities long after schemes have been built. In many cases communities may have had little or no involvement in project planning.

Further experience should teach us the relative importance of community involvement in planning in ensuring long-term success, and what is required to hand over management to communities when this has not been a feature.

8. OPERATION AND MAINTENANCE

The clearest indicator of the success of community management is the extent to which water systems are kept in good working order by the users. In many cases, community roles in operation and maintenance are limited to simple care of water points. It is often assumed that users can do little more than undertake protective measures to minimize breakdowns. Case studies indicate that communities may be capable of much more.

In Colombia, community water committees successfully manage small piped schemes, including simple water treatment with slow sand filters and chlorination. An evaluation report showed that the communities carried out and financed all daily operation, maintenance and management. Water treatment was managed so well that E.coli counts were reduced continuously by more than 99%. Although some problems in the distribution systems remain to be solved, and full 24 hour services have yet to be achieved, the Colombian case indicates that with the right support and motivation communities are able to manage relatively sophisticated water supply technologies (CINARA, 1990).

Women play an important role in keeping systems in good working order. In a handpumps project in Rajasthan, India, it was found that women pump mechanics were more effective than men, even though the initial costs of training were higher because women preferred to work in teams of three while men worked alone. A field study found that the better preventive maintenance done by the women mechanics meant that major repair costs for handpumps were four times lower than for those maintained by men (Jonsson and Rudengren, 1991).

Good support is required to ensure that the full potential of communities is developed. This includes:

- * *Proper training in the performance of technical tasks.*
- * *The development of approaches which allow communities to strengthen their problem-solving skills and learn from experience.*
- * *Appropriate technical design to maximize the number of tasks which can be done by community members themselves.*
- * *The development of simple but effective monitoring tools to allow communities to assess and improve their own performance.*
- * *Ensuring the availability of spare parts and tools.*

9. COMMUNITY FINANCING

For some, the relationship between community management and community financing is indispensable, and is closely linked to the ownership of improved water supply systems by communities themselves (Briscoe and de Ferranti, 1988; McCommon et al, 1990; UNDP, 1990b; UNDP/World Bank, 1991). As owners and managers, communities should be willing to contribute their own resources to sustain their water supply systems.

"In community-managed systems, users identify and mobilize resources. A community that is unwilling to use its available resources, however limited, for this purpose or that is unwilling to obtain them from elsewhere, can hardly be in control of its system". (McCommon et al, 1990).

Community management itself can be seen as a form of payment in kind, and hence of cost recovery. From this point of view, the factors listed below which influence community willingness to pay for improved water supplies are likely to be just as important in determining willingness to manage.

On a practical level, the options for community-based financing are broad (Wijk-Sijbesma, 1989). Whichever one is chosen, part of the process of capacity building is likely to require support to communities in developing effective financial management and accounting procedures. At the same time, communities themselves have a major role to play in identifying the most appropriate approaches.

In a Canadian-supported handpumps project in Togo, householders agreed to manage long-term operation and maintenance and cover the costs of repairs and spare parts. To raise the necessary funds, they cultivated communal farms and put the proceeds into a bank account which they used to keep the handpumps working and finance other development activities (Graham, 1990).

FACTORS AFFECTING WILLINGNESS TO PAY

- * *Acceptability of service level*
- * *Acceptability of technology and service standard*
- * *Perceived health, social, and economic benefits*
- * *Level of income, price, and relative cost*
- * *Characteristics of existing sources*
- * *Reputation of service agency*
- * *Socio-cultural factors and degree of community cohesion*
- * *Perception of ownership and responsibility*
- * *Transparency of financial management system*
- * *Institutional and legal framework and policy environment*

(Evans, 1992, adapted from Briscoe and de Ferranti, 1988; Katko, 1991)

In Niger, villagers decided to raise funds for handpump maintenance by making an annual contribution to a community fund immediately after the main harvest of the year. Most of the money was invested in grain. This reduced the likelihood that the money would be used for other purposes, and usually ensured a profit when the grain was sold later in the year (Ministère de l'Hydraulique, 1991).

A UNDP/World Bank study identified community financing as an important element of success in a study of community management in seven projects in West Africa (UNDP/World Bank, 1991), and was a prominent feature of a highly successful project in Guatemala. Successful community financing is far from universal, however, and remains a major challenge. The assertion that community management makes no sense without community financing also needs further investigation.

COMMUNITY FINANCING IN GUATEMALA

A case study of a community water supply project in Guatemala, supported by a local non-government organization Agua del Pueblo, indicates that communities can not only be willing to pay for improved water supplies but that projects also benefit considerably from a community-financed approach.

Following a request from the community, Agua del Pueblo assisted a community to install a gravity-fed piped supply system in their village. The community elected a committee to manage the scheme, a loan was arranged to pay for it, and monthly rates to be charged to users to cover maintenance costs were agreed. Using their own resources led to a high level of community commitment to the scheme, and the active search for economic benefits to help recover the costs:

"A little over a year and a half later, an Agua del Pueblo visitor found the acueducto to be in excellent working condition. He also found a second piping network had been subsequently installed. Several months after completion of the potable water system, the water committee had met to discuss taking out a loan for small-scale irrigation. They had located another spring and had sent a delegation to Guatemala City to discuss their plans with the National Agricultural Development Bank. Eventually, their loan was approved, and the irrigation system was installed."

Recovery of the loans issued by Agua del Pueblo proved to be very successful:

"Agua del Pueblo's requirement that a substantial capital investment come from the community is unusual among water programs, which normally limit the community's contribution to the provision of labour and locally available materials. To date, 15 of the 16 loans in the program's portfolio are up-to-date - testimony that communities will pay for services that they value and helped to create."

Source: Cox and Annis, 1982.

10. THE ROLE OF WOMEN

The significance of the role of women in water management has long been recognized. The body of evidence that women can play decisive and indispensable roles in ensuring the success of water improvement programmes is now very large (cf. Wijk-Sijbesma, 1985, Indonesia-Australia Development Cooperation Program, 1991; Wijk-Sijbesma and Bolt, 1991).

Women have proven themselves capable of taking responsibility for complex technologies, as well as managing basic care of water points. In Mexico groups of women in low-income peri-urban areas successfully managed relatively complicated solid and human waste recycling technologies and turned this project into an effective income-generating enterprise by producing and marketing high quality compost (Schmink, 1984).

In Burkina Faso, the entrepreneurial skills of women has been recognized as a major potential asset for water supply management. Official government policy has now been established to support their more central involvement (Kompaore, 1989).

More emphasis on community management may help to further strengthen the role of women. It may also mean that even greater efforts must be made to ensure that they are properly represented in the management process. In many societies, authority positions are reserved for men. If greater recognition is given to communities as managers, men may be even more inclined to keep these positions for themselves.

As community involvement grows a gender perspective is even more essential to prevent men from securing a dominant, managerial role and women a dependent role in an area where they formerly enjoyed considerable independence and responsibility (Hannan-Andersson, 1990).

11. MONITORING AND EVALUATION

The monitoring and evaluation of progress and performance is an important management tool in projects of all kinds. If communities are to take on greater management responsibilities, an important part of establishing the necessary capacity is likely to be the development of suitable monitoring and evaluation tools.

Agency monitoring and evaluation is often predominantly concerned with quantitative and technical aspects of scheme development, operation, and maintenance. Even when a broader approach is taken, the information collected is often primarily of use to the agency. If communities are to take on a greater share of management responsibility their own information needs are likely to increase, and appropriate tools and methods will be needed.

The need for new approaches to monitoring scheme performance and the effectiveness of community management on a continuous basis has been recognized, and the development of such tools is being actively pursued (see, for example, Narayan-Parker, 1990). This is an important area for further development and testing in the field.

12. BUILDING CAPACITY FOR COMMUNITY MANAGEMENT

Capacity building for community management can be seen to have different levels of meaning. At its most basic, it refers to the strengthening of skills in communities to enable them to perform management tasks. This includes the provision of technical training for the performance of routine operation and maintenance tasks, book-keeping and financial control methods, guidance on how to develop and implement community monitoring and evaluation systems, and so on.

The growing emphasis on management, rather than participation, has led to the development of innovative and more participatory capacity building methodologies that place the emphasis on developing learning and problem-solving abilities rather than simply transferring technical skills.

Examples include the methods developed through the UNDP supported Promotion of the Role of Women in Water and Environmental Sanitation Services (PROWESS) project (Srinivasan, 1990; Narayan-Parker, 1990), and the participatory approaches developed by CARE International in Africa and elsewhere (CARE, 1988; CARE, 1990).

IRC is currently actively involved in promoting such approaches, for example through support currently being given to community water and sanitation projects in Guatemala and Honduras financed by the German development bank KfW.

The broader level at which capacity building works can be identified by examining a basic set of preconditions which have been identified for successful community management.

PRECONDITIONS FOR COMMUNITY MANAGEMENT

- * *There must be community demand for an improved system.*
- * *The information required to make informed decisions must be available to the community.*
- * *Technologies and levels of service must be commensurate with the community's needs and capacity to finance, manage, and maintain them.*
- * *The community must understand its options and be willing to take responsibility for the system.*
- * *The community must be willing to invest in capital and recurrent costs.*
- * *The community must be empowered to make decisions to control the system.*
- * *The community should have the institutional capacity to manage the development and operation of the system.*
- * *The community should have the human resources to run these institutions.*
- * *There should be a policy framework to permit and support community management.*
- * *Effective external support services must be available from governments, donors, and the private sector (training, technical advice, credit, construction, contractors, etc.).*

Source: McCommon et al., 1990.

Community management is likely to mean changes in the role of supporting agencies. Community management capacity needs to be built and supported. Agencies will need to concentrate on new and different inputs than in the past and make the change from being providers to facilitators. To do this, they will have to build new capacities of their own, as well as assisting in building capacity in communities.

13. THE EFFECTIVENESS OF COMMUNITY MANAGEMENT

The current lack of precision in clearly defining community management has been said to be "due to a corresponding lack of successful examples" (Tamm, 1991). In spite of this, claims that community management can succeed have been made for quite a long time. At the beginning of the water decade a series of USAID evaluations of projects in six countries (Kenya, Thailand, Peru, Panama, Korea, and Tunisia) indicated that systems managed, and paid for, by communities tended to be more reliable than those which were not (Dworkin, 1982).

The effectiveness of community organizations in undertaking management tasks varies considerably. In Latin America highly successful community water boards are often found (cf. Cox and Annis, 1982). In Africa and Asia experience has been very mixed. Experience from Pakistan shows that, under the right circumstances, communities can show a very high degree of self-reliance.

In a comparative analysis of experience in Asia and Africa, it was noted that in India community self-help was actually discouraged by the perception of water supplies as a social service and the high level of resources given to the rural water and sanitation sector. In Bangladesh, by contrast, communities have taken on much higher levels of responsibility simply because these levels of support are missing. In Nigeria, a decline in resource availability following the collapse of world oil prices persuaded communities to accept lower service levels and take a greater share of responsibility (Black, 1990).

COMMUNITY SELF-DETERMINATION IN PAKISTAN

The Aga Khan Rural Support Programme (AKRSP) provides support to rural communities in three of the poorest districts of northern Pakistan. Loans for community-initiated projects, and technical advice, are channelled through Village Organizations (VOs) which are responsible for the local development and management of projects. This entails recognizing community rights to self-determination and decision-making on their own behalf.

"Occasionally, villagers have disregarded the engineers' suggestions and followed their own ideas. This can be seen during the building of (irrigation) channels. The AKRSP staff survey and mark construction levels but the villagers ignore the marks and let the water flow determine the bed slopes - a method they have been using for hundreds of years.

"In another example, at Sust, the villagers insisted on digging a tunnel through the mountains for their irrigation channel, against the advice of the AKRSP engineers who said it would be too costly. The AKRSP withheld the project funds, but the villagers pressed ahead using their own money. However, the engineers returned to help overcome the villagers' tunnel alignment problems. The project proved to be successful and project funding was resumed."

Source: Pasha and McGarry, 1989.

The extent to which communities themselves determine the form which local management organizations take may have an important impact on their success. A study of water committees in Latin America found that those that were locally developed, rather than being imposed from the outside, were the most effective (Espejo, 1989).

At the same time, leaving communities entirely to their own devices may not always be the best way to protect the interests of less powerful members of the community and ensure equity.

In Namibia, government support to the operation and maintenance of deep motorized boreholes in the arid Herero region was largely withdrawn during the transition to national independence. User groups were left to devise their own local maintenance and financial management systems.

Some groups agreed to share running and repair costs in direct proportion to the numbers of cattle each member of the group owned. In others, powerful local leaders insisted that all group members pay the same, thus serving their own interests at the expense of poorer members of the group (Evans, 1990).

Where local water management has been successful, this has been attributed to many factors, including the following:

- * *Water is scarce and the felt need is therefore high (Yacoob and Rosensweig, 1991).*
- * *Communities realize that if they do not take care of their own water supplies nobody else is likely to (Black, 1990).*
- * *An active and central role has been established for women in decision-making and control (Wijk-Sijbesma, 1985; Wijk-Sijbesma and Bolt, 1991).*
- * *Communities are paying for their own supplies (Dworkin, 1982, UNDP/World Bank, 1991).*
- * *Community awareness of, and desire for, the health and other benefits to be obtained is high (WHO, 1990).*

The taking on of management tasks has cost implications for communities, in both time and resources, which will affect both their willingness and ability to perform them (Yacoob and Walker, 1991). In Rwanda women were found to be spending more time on collecting fees to maintain their water system than on collecting the water itself (Coreil and Beaudoin, 1989). Communities may be unwilling to take on management responsibilities if they are unable to see in advance what the cost implications are likely to be (Evans, 1992).

The broad range of variables influencing success clearly indicates that prescriptive approaches are unlikely to be appropriate. Flexible strategies and frameworks need to be developed which will allow supporting agencies to adapt and respond to local conditions.

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(WP-DT/08 - 92)

Sustaining Community Water Supply

Some questions on community participation

PAID-GS, Douala

**Paper presented to the IRC International Workshop on
"The Role of Communities in the Management of Improved Water Supplies",
The Hague, Netherlands, 4-10 November 1992.**

A SUMMARY OF THE MUTENGENE WATER SUPPLY IN CAMEROON.

The Mutengene water supply is a case study which illustrates many features of community management and project sustainability.

Mutengene is located on the slopes of Mt. Cameroon in the South West Province 4.11 x N9.12 x E. A junction village linking the economic capital Douala, the oil refinery in Limbe and the provincial capital Buea. It has rich agricultural soil, a tropical climate with heavy rainfall 2500 mm. Pipe borne water has been accessed from a well-spring and "reticulation" is by gravity.

The population of 12,745 (1985) is fast growing and the community is multi-ethnic (20). They are mainly farmers and small businessmen and paid labourers and employees. There are also motor garages, health centres, schools, missions etc.

Administration is assured by a chief through a Village Development Council (VDC) and a Village Traditional Council (VTC). The VDC (70 members) has five standing committees: water supply, land, health, education, disputes. The VTC, principally of the indigenous ethnic group deals with local disputes and enforcement of village bye-laws.

The idea of a water project originated from the long distance to the stream and to uncontrolled pollution by man and animals giving rise to water borne diseases notably dysentery, diarrhoea, typhoid and cholera.

Concrete steps were taken by the VTC to collect money for pipe-borne water but the effort failed first due to lack of proper planning and financial management, lack of community spirit, and lack of participation by women. The Community Development Department (CDD) was called in. It helped the community to lay down guidelines for cost recovery and project sustainability. It trained local personnel in technical aspects, basic financial management and in record keeping.

Next, the Swiss Association for Technical Assistance (SATA) was drawn in by the CDD as a donor and technical support agency and both CDD and SATA helped in locating a viable water source.

Given the renewed spirit, the community dissolved the original project committee (PC) and elected a new one, more representative of the community. It was composed of heads of various ethnic groups who mobilized their people supervised work groups and collected contribution. The new PC also monitors revenue and material supplies and was involved, helped in the recruitment of skilled labour within the community. The caretaker/plumber was recruited by them and then trained by CDD, which with SATA supervise the technical aspects of his work.

To foster the community spirit the CDD animator encouraged the PC to hold regular meetings, regular flow of information to the community and the keeping of proper financial stores records. It

was perhaps more re-assuring when money collected was deposited at the bank to which both the chairman and treasurer were both signatories.

As collections by the community fell far too below the required amount. Other agencies helped namely: The Government, SATA, UNICEF, NOVIB.

Mechanisms for sustainability

The project which started in 1971 was completed in 1977. Upon completion, the PC was replaced by the Project Maintenance Committee (PMC). Its responsibility is to: enforce regulations for water supply and private connections, collection of water fees, promote community participation, ensure protection and proper functioning of the system (catchment, sedimentation, interruption, storage, pipelines and private connections and purity of water). Major faults are reported by the caretaker (salaried) to the PMC chairman who contacts CDD and SATA for technical assistance. Various quarters pay for the repair of their stand pipes and contribute labour for the repair of distribution lines within their quarter areas. The village crier alerts the community of major breakdowns and of suspension in the water supply.

Major problems:

The water project has promoted rapid growth of population, commercial activity and buildings. The demand has outstripped the supply. Unfortunately too, asbestos pipes were used. Many are broken by root trees and otherwise. Replacement cost is too high for the village.

Secondly, there is pressure from the Public Water Corporation to take over the water supply and commercialize it. The village community is resisting this because it would mean rigorous payment of higher water rates.

SOME ISSUES FOR REFLECTION

1. The concepts of: Community; and Community Management
2. Various mechanisms for the sustainability of community management of improved water systems.
3. The influence of internal community changes on sustainability.
4. The influence of external changes on the sustainability of community management of improved water systems. 3 and 4 put differently: What constitutes the enabling environment for the sustainability of community management of improved water systems.

Acknowledgements

This case study is an extract from an earlier study by Mr. Anthony Nforba Nchari, (Senior Lecturer at PAID-West Africa) published by the Association of Management Training Institutes of East and Southern Africa (AMTIESA) part of a collection of management training case studies.

The issues raised for debate in the workshop are the result of discussions between staff of PAID-General Secretariat Dr. Laban Kirya, Philip Langley and Prof. Alfred Mondjanagni.

PART I THE MUTENGENE WATER SUPPLY

Mutengene Village

Location and Climate

Mutengene is a fast-growing junction village in Southwest Cameroon linking Douala, Cameroon's economic capital (60 km Northwest), and Limbe, the oil drilling and refinery centre (20 km West).

It has a rainy season from March to October, and a relatively dry period from November to February, with annual total rainfall about 2500 mm, influenced by the Southwest monsoons.

The combined effects of the climate and topography determine the surface and ground water supply within the vicinity. The topography makes it possible to obtain pipe-borne water cheaply by gravity.

Population

Some residents have described Mutengene as a "melting-pot" because of the multiplicity of ethnic groups that make up the village. But a census undertaken in June 1985, the total population was 12,745, with the inhabitants drawn from 20 ethnic groups, notably the Widikum, Tikar, and Chamba tribal groupings of the Northwest Province, the Bakweris, Bayangis, Mbos, Bangwas, and Memes of the Southwest Province, the Bamilikes of the Western Province, and the Ogojas, Ibos, and Ibiobios from neighbouring Nigeria.

It is believed that most of the population immigrated into the village following the establishment of German plantations in the 1930's and the subsequent growth of the banana trade, which brought a housing boom to the area. The inhabitants are mainly farmers, growing a variety of foodstuffs including yams, cassava, cocoyams, maize, and bananas.

Some residents are owners of small businesses and others are employees of the Cameroon Development Corporation, Brasseries du Cameroon, hotels, the Cocoa and Coffee Cooperative Marketing Centre, motor garages, the health centre, and petrol sales points, as well as education and training institutions such as the Police

Training College, the Catholic Mission Secondary School, and three primary schools.

Administration

Mutengene is headed by a Chief, who runs the affairs of the village through two institutions, the Village Development Council (VDC) and the Village Traditional Council (VTC).

The VDC is made up of 70 councillors representing the 20 different ethnic groups. The selection of the councillors is based on prominence and wisdom, and the member distribution is based on the size of each ethnic group. The Councillors select a Chairman who heads the council and has a general secretary responsible for recording minutes, to facilitate administration, the council is divided into five standing specialised committees; Water Supply and maintenance, Disputes, Land, Health, and Education. Each has a President, Secretary, and Financial Secretary, who form the Executive Council. The Executive Committee usually meets monthly to discuss matters affecting the village. All 70 councillors form the General Assembly, which meets at least twice yearly.

The Traditional Council draws its members principally from the indigenous Bwinga Bakweri Tribe. Its primary function is settling disputes of a local nature and penalising offenders according to village bye-laws. The entire village is divided into 20 quarters representing the major ethnic groups, each of which is headed by a Quarter Head.

The Water Problem and the Project Idea

The Benoe stream provided the major source of water for domestic and agricultural use for the fast-growing Mutengene settlement. The uncontrolled use of the stream by the village's human inhabitants and animals, notably pigs, resulted in the stream becoming very polluted, especially during the rainy season. This gave rise to water-borne diseases, the most prevalent being dysentery, diarrhoea, typhoid, and cholera. Moreover, the water source was distant, as much as three kilometres from some sections of the village.

By 1960, the inhabitants of Mutengene were becoming frustrated by this situation, especially since conditions were deteriorating rapidly as population increased. There were no doubts in their minds that the solutions lay in the provision of pipe-borne water through a project that could be undertaken on a self-help basis.

In 1962, the first attempt was made through the Village Traditional Council to collect money for the water supply project, but this failed due to lack of proper planning, and financial mismanagement.

With the rapid population growth which characterised the period 1960-1967, the water problem continued to top the agenda of the VTC meetings. In a meeting summoned in February, 1967, the village unanimously agreed to have a pipe-borne water supply system on a

self-help basis. Contacts were made with the Community Development Department (CDD) to provide the necessary guidance (see Annex 1).

The Community Development Department

The CDD of the then West Cameroon Government had the special responsibility of accelerating development in rural communities through rural animation and the promotion of self-help projects in road and water supply infrastructure development, home economics, agriculture, and other training programmes related to income-generating activities.

The CDD Technical Section is mainly concerned with assisting rural communities in construction and sustaining water supply projects and roads. The field staff are based at the District level.

Promoting self-help water projects has been a priority of the CDD. Its primary role is assisting in the creation of the necessary institutions/structures that would plan and implement community self-help projects, and after completion sustain them. These have generally been the Village Development Committees (VDCs), the Water Project Committees, and the Water Supply Maintenance Committees.

The CDD assists the community in laying down guidelines and procedures for the successful operation of the institutions it creates, and trains the personnel to man them. Since most of its water projects are self-reliant projects, the CDD also emphasizes the cost recovery element of project sustainability. Guidelines are usually provided by Community Development Organisers (CDO's) to Project Committees for preparing project budgets and keeping basic records. The guidelines recommend charges that would generate sufficient revenues at least to meet the costs of maintenance. Thus institution building and cost recovery are priority areas in self-help projects promoted by CDD.

The CDD also provides the vital link between the communities and donor agencies. The major donor agency for community self-help water projects has so far been the Swiss Association for Technical Assistance (SATA).

In Cameroon, SATA has been assisting the Technical Section of the Community Development Department since a preliminary mission in 1961 also training Cameroonian technicians and engineers to gradually replace all the Swiss experts.

SATA attracts additional amounts of aid from overseas private voluntary agencies for various development projects. It links projects with foreign donors and prepares the necessary papers for funding. SATA Engineers also supervise the ongoing water projects.

SATA officials regard the development of institutions at both community and national levels as its top priority for project sustainability. Thus, besides assisting communities to implement and maintain their water projects, SATA has been preparing the CDD by training Cameroonian experts to take over its major functions in

water projects when it finally withdraws from Cameroon by mid-1988. Technology transfer with emphasis on "appropriateness" as well as cost recovery are its other project sustainability priorities.

Planning And Launching The Project

The CDD followed up the request of the Mutengene Community and in 1967 it set up a Project Committee charged with the overall responsibility of planning and implementing the project on behalf of the community. The community discovered a good water source at the small village of Ekande (about six km north of the Mutengene), and its leaders sought advice from the administration and the CDD.

Preliminary studies and rough estimates made for the project by SATA revealed that the total cost of the project would be 7,100,000 FCFA of which 600,000 was needed in cash to meet the cost of materials, wages, and salaries of skilled workers. The remainder was needed in kind as voluntary contributions, from the community, of stones and sand for construction work, as well as labour for trenching. These estimates were revised in 1968, raising the total costs of the project to 9,200,000 FCFA.

However, at the Community level, it was becoming clear by early 1968 that the project committee established in 1967 was making little progress, particularly in collecting funds for the project. The community apparently had no faith in the project committee as some of its members were accused of misusing funds.

The CDD moved quickly and in less than a year, the committee was dissolved by the Principal Community Development Officer (PCDO).

The first project meeting in 1967 had been characterised by inadequate participation by the community members and the absence of women representatives. There was no representation from a number of government offices such as local government, health, and the women's section of the CDD. This first meeting, had appointed a project committee, but it appeared that some of its members did not have the confidence of the population and indeed had shown themselves to be unreliable in the service of the community. Although the meeting had decided to levy 5,000 FCFA from each wage earning male, and a lower contribution from all other members of the community to cover the costs of the proposed water supply project, this decision had not been communicated to the population.

One major reason why no progress had been made on the project was that Mutengene had little sense of community cohesiveness. As a result it was particularly difficult to initiate and carry through a united community effort.

The heads of the "non-native" ethnic groups had not been satisfied with the composition of the 1967 project committee.

They complained that it consisted mainly of the Bakweris, that those selected were not reliable, and that the non-natives were virtually excluded from the committee. The new committee did not

improve the situation sufficiently, and so the project made little progress. A number of meetings (designed to revitalise the project) initiated by the PCDO, Mr. Sikod, were held in 1969.

Discussions at these meetings revealed some of the major weaknesses in the project planning and initial launching.

The people of Mutengene were invited to attend these meetings in order to plan and tackle what they considered the most important aspects of the project. Out of those meetings arose the major decision that the water supply project be relaunched by June, 1971, at the latest, but that before then the project committee had to be dissolved and a new one formed.

The revised total costs of the project amounted to 21,300,000 FCFA based on an estimated user population of 10,000 (population projection for 1992) and a per head water consumption of 80 litres per head per day which required a storage tank of 250m³ capacity.

The relaunching meeting was held on the 28th May, 1971. It was chaired by the Head of the Community Development Department, and attended by national party officials, the Tiko Area Council Chairman and Executive Secretary, the SATA Engineer and his Cameroonian counterpart, the Head of the Women's Section of the CDD, the Community Development Organisers, and 18 heads of the various ethnic groups.

The former development committee was declared dissolved and instructed to hand over all documents and tools to the new committee. Discussions at the meeting pointed to the fact that the dissolved committee had done a bad job and was to a large extent responsible for the project not taking off. It was important to elect people who would be ready to sacrifice their time and to perform efficiently for the betterment of the entire population.

All heads of the various ethnic groups, branch Presidents of the National Political Party, and the Chairman of the Traditional Council formed the Project Committee - the highest decision-making body for the project.

From this was elected a nine-man Executive Committee with the day to day running of the project. The new Chairman, Mr. John Tanning, had been on all previous Committees and now continued to be the Chairman.

All members of the executive committee were required to reside in Mutengene proper. This arrangement was intended to facilitate the coordination of activities amongst its members, the CDD officials, and SATA Engineers\Technicians.

Organisation For Implementation

The Project Committee (PC) was the arm of the entire Mutengene Community charged with the overall responsibility for implementing the project. Specifically, it was to mobilise the entire

population to participate in the project through community labour such as digging trenches and pits, and carrying stones and sand, as well as collecting cash contributions. The heads of various ethnic groups who were also members of the PC were designated to mobilise and lead their work groups during community work and collect cash contributions.

The Project Committee was expected to have full knowledge of the amount of grants provided for the project. It also had the obligation to check and control materials supplied, making sure that these were used to the best advantage of the project. The Community Development Officer/Adviser had to report bimonthly to the PC on the financial and stores position. It could then seek clarification of any doubtful expenditures.

In addition, the PC oversaw all funds collected from local contributions and ensured that they were safely deposited with the Council Treasury or Bank. The PC was further to ensure that all skilled labour for the project was recruited from the Mutengene community. Only under unavoidable circumstances could skilled labour be recruited from elsewhere.

The PC initially faced much opposition from the native Bakweri leaders. It nonetheless succeeded in getting work started and gained the confidence of the entire population. The Quarter Heads used their best efforts to collect the general levy to finance the project 500 FCFA for men and 200 FCFA for women, and to mobilise their groups to dig trenches and carry out other community tasks connected with the water supply project.

Work commenced in June, 1971. With the new enthusiasm, the project planners envisaged that by October, 1972, the project should have been completed. The Executive Committee met weekly to review the activities of the project. A project caretaker/plumber, was recruited from the Mutengene community and trained at the Community Development Training Centre at Kumba.

The Secretary of the Project Executive Committee, in collaboration with the CDD/SATA engineers and technicians supervised the work of the caretaker, who was also responsible for the allocation of community work and issuing tools to work groups. The Caretaker rendered an account of his activities to the CD organiser.

Aside from their financial and material contributions, the CDD and SATA provided technical and managerial guidance throughout the project implementation period. The CD officials created and promoted the relevant institutions, such as the project Committee, and assisted in sensitizing and mobilising the community towards the realisation of their self-help project.

Guidelines for preparing budgets, keeping basic records, and preparing financial statements were provided by the CD organisers.

One CD organiser who was particularly noted for being active in promoting community participation during the years following the

final launching of the project in 1971, encouraged all sections of the community through their leaders to actively participate, and rebuked those who did not live up to expectation. In particular, he chastised prominent members of the community who did not adequately contribute to the community effort.

He was equally concerned about the good management of the project's financial resources. Commenting on the 1974 financial statement, he reminded the Chairman of the Project Committee, of the fact that in dealing with community funds, he should always remember to keep the community well informed as to how the money was being used. He advised that financial meetings should be held once every month to check the receipts and receive money from the collectors. It was also of utmost importance that receipts be obtained for all the project materials purchased.

All this was designed to instill confidence and continued support from the community.

Financing the Project and Sustainability

Family heads, and representatives of various firms and institutions were responsible for collecting the money. The Chairman and Treasurer deposited the money collected in the project's account at Cameroon Bank in Tiko. Both were signatories. The Chairman rendered monthly financial reports to the Fako Division Office of the CDD in Limbe.

Between 1971 and 1977, cash contributions amounted to only 621,049 FCFA, with an additional 500,000 FCFA contributed in labour and materials. By the project completion in 1977, the community had contributed a total of 4,253,252 FCFA, only, about 20% of the total project costs of 21,327,270 FCFA. This was far below the prescribed 50%.

Other major contributors were the Cameroon Government, Tiko Area Council, and external donors, notably SATA, UNICEF, and NOVIB (a donor organisation from the Netherlands).

The Mutengene community has, since taking over the project on completion in 1977, been able to raise adequate funds from the community to meet the maintenance costs.

Project Maintenance

Upon completion, the project was handed over to the Mutengene community. The project committee responsible for implementing the project was dissolved and replaced by a nine-man Project Maintenance Committee selected by the General Meeting of the population. Mr. John Tanning has since 1978 been the Chairman of the Maintenance Committee (MC). The MC was responsible for the general maintenance, smooth functioning, and control of the water supply system.

The Committee's responsibilities included:

- . engaging a project caretaker/plumber, determining his salary, and controlling his activities and records;
- . formulating regulations governing the water supply maintenance and private connections, ensuring the enforcement of these regulations, and taking appropriate disciplinary measures against any member of the community who contravened them;
- . preparing for approval, the maintenance fees to be paid by each beneficiary;
- . organising and control of the collection and spending of the maintenance fees, and depositing money collected in a bank account specifically designated for maintenance funds;
- . promoting all forms of community participation and ensuring that community work on the water supply system was organised when needed. One other major function of the MC was to ensure appropriate hygienic and sanitation conditions in Mutengene. In this regard the MC promulgated and had been enforcing a number of regulations including:
 - forbidding of farming, cattle grazing or other activities at the catchment point;
 - ensuring there are no muddy areas around the standpipes, wash places and shower houses;
 - cleaning of the drainage system and regular emptying of soakaways;
 - immediate reporting of any cases of diarrhoea or other water borne diseases to the Health Inspector of the CD office, who in turn would conduct a check on the system.

An integral part of the maintenance procedures was the regular check on the project's infrastructure and equipment. The catchment, sedimentation, interruption and storage tanks, stand pipes and soakaway pits, and the network of pipes constitute the basic infrastructure.

The Project Caretaker trained and engaged by the community has been responsible for the regular maintenance of the project's infrastructure and equipment. Since the commencement of the project, the project caretaker's position has been held by the same person.

His functions have included routine checks undertaken daily which have generally covered: all leakages in the village stand pipes and private connections, the whole main pipe line from the catchment, sedimentation, interruption, and storage tanks, all pipe lines and private connections.

The caretaker is alerted to any fault discovered anywhere in the system. All faults to be corrected and tasks to be done are entered in a daily log book. The log book is kept by the secretary of the MC, to whom the caretaker reports every morning at 7.00. The caretaker enters in the log book the tasks to be undertaken during the day and the section of the village in which the particular tasks will be undertaken. Major faults that the caretaker cannot remedy are reported by the Chairman of the MC to the CDD/SATA Engineers, who undertake the repairs.

The various quarters were responsible for funding the replacement of the standpipes serving them if they were damaged, the residents of the quarter affected must contribute labour to help the plumber undertake the necessary repairs or replace the damaged pipeline. The maintenance committee had a store of pipes and spares to facilitate the water supply maintenance work. In the event of major damage to the main pipe line, the village would not have water until the fault was corrected. This could take several days. When this happened the "Villager Crier" usually alerted the entire community to the situation.

The maintenance procedures worked to the great satisfaction of the caretaker and the maintenance committee. No serious complaints pertaining to maintenance were received from the community. The caretaker seemed to be a highly motivated person. Besides his fairly good salary, he enjoyed insurance benefits and had been granted house loans on favourable terms by the Committee.

Project Beneficiaries

With 56 stand pipes distributed throughout the village and six wash places, it was no longer a problem to fetch water, as the furthest distance from a stand pipe to a residence was now only 200 metres, as opposed to 2-3 km to the Benoe stream. Many inhabitants had water at their doorsteps, and the well-to-do had it right inside their houses. Moreover, the charges for water consumption were quite low. The maximum of 500 FCFA per tax-payer per year was within the reach of every adult resident. Those with private connections to their houses were able to consume as much water as they liked since there were no water metres, and yet had an annual levy of only 5,000 FCFA. Large institutions and establishments like the Police College, with a number of administrative blocks and residential houses (all self-contained), paid only 100,000 FCFA per annum. This did not equal a month's charge if, given the same consumption, they had been served by the state corporation (Société nationale des eaux du Cameroun - SNEC).

The water quality, had also very much improved since the opening of the first taps in the 1970's. This had resulted in a substantial reduction in the incidence of water-borne diseases, as reports from hospitals and health centres in the area had shown. The water was taken from a spring source and, although it was not treated, many of the foreign elements sank to the bottom during the sedimentation process. Over the years there had been no serious complaint about the water quality, except in February 1986, when some members of the community complained of small black particles swimming in the water.

MC took up the matter and requested the SATA specialists to undertake tests to establish whether or not the particles were dangerous. SATA's test revealed that the particles were from a plant called "alga", which is usually found covering the stones in streams. This plant and the minerals in water were normal and not dangerous to health. This was explained to the Mutengene residents.

The water supply project also facilitated the establishment of institutions which require water, such as the health centre, hotels, and a number of business establishments. Solid permanent buildings were springing up. However, the occasional water shortages had caused some dissatisfaction among the sections of the community affected.

Water Shortage and the Renovation Schedule

Mutengene had been experiencing serious water shortages since 1984. The rapid growth of the population to over 15,000 inhabitants had far outstripped that envisaged at the project planning stage. The demand for water had also drastically risen as a result of the housing boom and the consequent sharp increase in the demand for private connections. The existing infrastructure was too small to cope with the increase in demand.

The catchment chambers, for instance, had proven inadequate and needed to be replaced.

Although the regular inspection and stock-taking had revealed that all the tanks and most of the tools and equipment were in good condition, it became clear by 1985 that the pipeline system was very susceptible to damage.

Asbestos pipes, which constitute the main pipeline, are brittle and cannot take shock.

Over the years tree roots have penetrated the joints causing blockages, cracks, and substantial damage to the whole system.

The lack of spares for the asbestos pipes rendered maintenance work difficult. Furthermore, it is suspected that asbestos particles can cause cancer if consumed over a number of years.

By 1983, it became imperative that all the asbestos pipes be changed to stronger galvanised or PVC pipes.

The renovation scheme was estimated to cost 26,750,820 FCFA. This amount was far beyond the scope of the village and the water supply maintenance committee was depending almost exclusively on sources of funding outside the community.

By November 1987, the responses to the committee's fund raising campaign had not been very encouraging (3 million). This left a cloud over the continuity of the Mutengene water supply project.

P A R T 2

SOME QUESTIONS RAISED ON COMMUNITY PARTICIPATION

1) The concept of community

Mutengene is essentially a town whose population has mixed regional origins. What then are the principal characteristics of social relations in similar urban areas? Does the concept of "Community" have any meaning for the inhabitants of a town? of a quarter? of a neighbourhood? How can cultural barriers be broken down and a sense of common interests be fostered?

What is the "binder" (cement) which holds a group of a community together and what drives a population to organise itself to build and manage a water supply system? What was the internal group dynamics which led to the organisation and mobilisation of the population to reach a common goal?

What was the spark which made the whole movement take off? Was it an internal movement, external incitation or a combination of both?

How can external incitation avoid imposing pre-conceived ideas on a "community" and then leading itself to believe that this was what the community wanted?

2) Strategic management

Up until 1985, the community was able to manage the upkeep of the water supply system without too many problems. But was the management not geared to short term survival rather than long term sustainability?

In water improvement programs, how can strategic management be assured, which will go further than maintenance and repairs and include provision for strengthening the system itself, gradually improving services provided and the reliability of the system, and eventually extending the system to cater for increased population needs.

How can management also ensure that various social categories effectively consume water, that the health impact is monitored, that domestic labour is in fact reduced and that income generating activities are promoted.

3. The influence of internal community changes on sustainability
Although the system was managed successfully up to the mid 1980s, the urban community was not static, but constantly evolving.

What sort of changes are likely to occur in urban "communities" as a corollary to continued population growth as far as social structures and relations, the exercise of social control and the access to power are concerned?

What changes are likely to occur as a result of the present crisis which is affecting every country and every community in Africa?

What will be the likely effect of these changes on the supply system and its management? How can a community and its leaders adjust their management and prepare themselves for these changes?

4. The influence of external change on sustainability

As with the community itself, the external environment is gradually changing. Other actors are continually taking decisions which may affect the sustainability of a water supply, but over which the community has no influence.

What are the principle external risk factors for the sustainability of a supply system?

How can a community and its leaders identify these factors? How can it adjust its management to face up to the inevitable changes in the external environment? Where will resources come from to face up to change? Where will the needed impetus and dynamism come from to face up to change?

How for instance can costs be successfully recovered in a progressively deteriorating economic situation?

5) Management of water resources

The community manages the water supply system, including the spring. But both the spring and the water catchment area are some way from the town, are not easy to supervise and are certainly outside the town's jurisdiction; the water management committee does not manage them either de facto or de jure.

What should be done about such a situation? Does this not require innovative legislation? What strategy could be suggested for a water committee in order to have more influence over the protection of the water catchment area on a long term basis?

Which other actors ought to have a say in the matter?

6) Powers of the Water Committee

What is the legal basis of a water committee? Can it take legal action against a contractor or an employee; against a member who absconds with funds; against the administration in case of abuse of power?

What are the existing governing structures in the village (Village Traditional Council)*; village development committee)?

Are they legally based**? Are they democratically formed?

What are the powers of the water committee in relation to both traditional powers and "modern"/state structures such as the

Village Development Committee, the Rural Council (an elected body) and the local wing of the Ministry of Territorial Administration (District and Senior Divisional Officers)?

Is the creation and the effective working of a water management committee a useful contribution to the process of democratisation of public life? In what way is it a contribution? Does the committee have democratic practices in relation to the population it is working for (is it accountable)? How is the committee renewed? To whom is the committee accountable? Who oversees the committee? Who audits its accounts and to whom does the audit report?

*Note that in anglophone Cameroon, which is inhabited by ethnic groups which are considered by anthropologists as "ancephalous" societies, chieftaincy was introduced by the colonial administration as from 1937, as part of Lugard's policy of indirect rule.

** Until December 1991, the VDCs which had been set up in Cameroon, mostly on the instigation of the Community Development Department, had no legal basis. Under the new legislation on associations, their existence is recognised and, if they have taken the initiative to register, are also legally recognised.

7) Relations with the Parastatal Water Company

The community has gradually set up its own water supply system by struggling against odds, especially the unwillingness of the "native" population to share power, the inertia of the population and the low level of household resources. It is now faced with what it sees as another major obstacle: the National Water Company (SNEC), whose statutes give it the monopoly of water supply in Cameroon.

Does such a conflict really represent a conflict between community interests and those of the "common good"? Does it embody different philosophical approaches to resource management: decentralized - v - planned, centralised "rational" approaches?

Or does it rather embody a contradiction between the central state apparatus - and the social forces which control that apparatus - and popular social forces which are infinitely less well organised and aware of their power?

Is a conflict situation inevitable? Can an innovative compromise be found in which there would be joint management by the community and the SNEC?

8) Improved water supply and hygiene as "entry points"

For technicians and development workers, the links between improved water and sanitation are self-evident, as are the links between these two and development (at least, some of the links). In practice, in the field, this is not the case for many actors.

How does one explain that community mobilisation to improve water supply was not echoed by a similar move to improve hygiene?

How does one explain that the action to improve water supply did not give rise to a more general development process?

Can improved water supply really serve as an "entry point" for other development activities, by building up on peoples experience and organisational efforts to improve water and using this to tackle other development problems? If the answer is yes, under what conditions?

9) Impact of improved water supply

The community presently has more water, of better quality, more easily available. What has been the impact of this change on the urban society?

In practical terms, what has been the impact on peoples lives, in terms of economic and social well being? In terms of labour load and the use of time (for different categories of people)? In terms of health? In terms of new economic activities?

Who is supposed to observe the impact and INFORM THE COMMUNITY accordingly? Could the community do it?

10) Lessons to be learned

What are the lessons to be learned from this type of experience and how can they be shared with other actors: officials of the Ministry of Territorial Administration, SNEC, Community Development, Rural Councils, NGOs, other communities?

PL 275/92 (IRCMUT21 DISK 10) (WATER/ib/ibm)

The role of communities in the management of improved water
supply systems

CASE STUDY

AGUA DEL PUEBLO, GUATEMALA

**COMMUNITY MANAGEMENT IN RURAL WATER
AND BASIC SANITATION PROGRAMMES**

Prepared by

Fabian Gonon
Director Educacion

Ø. INTRODUCTION:

People's Water Association, It's a non governmental Guatemalan organization, its purpose is to contribute in the development of the poorest people in the country, by helping them with Water Supply and Basic Sanitation Projects.

"COMUNITY ACTION IN WATER SUPPLY AND BASIC RURAL SANITATION", is the heading of the work presented to the International Seminary about community action, taking place in Holland from november 4th to the 10th, 1992.

This projet tries to generate an analysis and discussion as a mean for sharing knowlegde and experiences, among International Organizations that work in Water Supply and Basic Sanitation. Sharing knowledge, is important for our organization to be present here today.

At the beginning of this exposition we'll try to explain the most important achievements gotten by the team of People's Water (ADP) until the presente date.

We put on view some characteristics of the people who we work with because our work depend upon those and upon the community efforts.

Then, we emphasize the accomplishments of the community action in the execution of Water Supply and Basic Sanitation -- projects done by ADP. Besides, we describe the achievements of the community people in the operation, maintenance and management of Water Systems and Excreta Disposal. We conclude this part with the description of the accomplishments of the Regional Development and the maintenance of the process.

Finally, we present general strategies for the 1990-2000 Decennium.

Truly,

People's Water

1. People's Water Association

1.1. People's Water:

It is a non Governmental, non profit organization, established with the purpose of promoting better life conditions for the rural communities, by finding and applying creative solutions to the Drinkable Water and Rural Sanitation problems with the real and active participation of the community.

In the last years, the technical and organizational capacity of the local committees and Basic Micro-Regional Organizations has been fortified, because of the initiative and advancement of development and affordable projects.

1.2. Historic Review.

People's Water was founded in San Lucas Tolimán in 1972. It started with the technical assistance for small infrastructural projects. It began with the SARUCH programs in Chimaltenango in 1975 and 1977 respectively, in cooperation with the Public Health Ministry and non governmental organizations (ONG'S).

The Guatemalan Government recognized Water People's -- Legal Status the 15th of June 1981 and approved its operation as Association.

1.3. Execution Projects and Achievements:

1.3.1. People's Water:

From 1981 until today, it has built 125 Water Systems - which has beneficiated 93, 741 citizens from 150 rural communities of the country. The systems have been done with different technologies: Gravity, Handpumping and Mechanical pumping, among others.

1.3.2. Education and Training Programs:

People's Water had developed Health Education Programs - in all the attended communities. It also has created educational materials to work with children, mothers, fathers and -- the community in general.

The Educational Methodology has been shared with Governmental, International and ONG'S Institutions. ADP also has trained technical and local personnel (PTL) in diferent disciplines that are required.

1.3.3. Basic Sanitation Programs:

People's Water has installed 15,200 toilets of different type, and has oriented the community about the use and maintenance of them.

1.3.4. Organization Of Basis Micro-Regional Support Programs.

People's water has strengthened the local organization - level and technical capacity in 70 communities, gathered in 5 Associations that stand themselves as managers of their own development.

1.3.5. Building Human Sources Program.

People's Water has developed the curriculum and has trained 27 technicians in Rural Aqueducts, trained people for the promotion, organization, planification, design, and construction of water projects in a rural level.

1.4. How Does People's Water Work?

1.4.1. The Water Projects done by ADP, are domestic connections and by gravity. Nowadays People's Water is doing the first handpumping and mechanical pumping projects and also it is storing rainwater.

1.4.2. For the construction of the projects, we have Rural - Aqueducts Technicians, who are in charge of every stage, with the supervision and advice of qualified personnel in water -- engineering.

1.4.3 The cost of the Water and basic Sanitation projects is financed by a downpayment, part of a loan another part from donations to the community.

The financial policy is designed to eliminate the dependency and to impulse the financial support.

1.4.4 With the execution of the water and Sanitation Programs in nearby communities, gathered in Basis Micro-regional Organizations, ADP tries to execute development projects.

1.4.5 In all the work done by ADP, there is a good community participation, involucring parents, teenagers, and children in the decision making, planification, organization, construction of the system, health education and the maintenance of the project operation. We maintain a wide approach about changes needed in Sanitation and Development.

1.4.6. For the Health education area and Basis Micro-regional Organizations Support, there are experienced Rural Technicians, Social Workers, Economists and Agronomists, who had worked in the institution for a good while.

1.4.7 In the Financial Control Department, there is a modern, computerized equipment and qualified personnel.

2. People who we work with. Characteristics.

People's Water during more than twenty years, takes as a priority the projects of the poorest rural people, that is found in extremely poverty nowadays.

Their main economic activity is agriculture. The 100% of them cultivate corn and beans for their own consumption. Fruit trees, coffee and cardamom are also cultivated, some crops are exported and others consumed locally. 65% of the community people emigrate to big farms in the southern coast of the country to sell their laborship; earning \$ 1.75 for 8 hours day-journey or more hours than that. They work in the worst working conditions without work benefits, because they are temporal workers.

The illiteracy rate reaches 95%, and the access to education (first years of Elementary School) it's only accessible to 15% of the school age children population. These people has the highest Infant Mortality Rate and the main reason for that is because of gastrointestinal diseases.

The governmental social policy doesn't fulfill the needs of the rural people, because governmental institutions are centralized in the capital city. The communities lack of basic infrastructures: Drinking Water, Sewage Disposal and Toilets, things that can help to improve the health status of

the people.

The 80% of the people is indigenous, in other words, it belongs to 15 linguistic groups of the 21 living in the country. Most of the people are monolingual, their communication is only in their maternal language, especially women.

3. Community Action and Water and Basic Sanitation Programs.

(People's Water case).

3.1 Community Action in the Water Systems and Basic Sanitation

Projects Execution:

The rural communities have a very good participation in Water and Basic Sanitation programs execution, something that helps to amplify the explanation about their health problems. They make decisions and manage their own resources and time. The achievements in this way, fortify their capacities in the organizational and participative structures and also increase their expectations for development.

The process tries that people, leaded by their committees, will be attached to their own history. This process begins when the rural citizens show to ADP their water needs, and when their petitions are considered as prior needs, ADP and the community start the first relationship by a visit to the community.

The identification and accomplishment program to communities

(FIAC) sets up the first visit, with the purpose of initiating the discussion and analysis with the community, about the point of view that people has about the problems, the way in which they define their Water and Basic Sanitatin needs; and, together we develop the idea of their project. At the same time we verify technically the viability of the Water System. (Quality of the resource, height, legal permissions on the way the project will go through).

To talk about alternatives for Water Supply: by gravity, handpumping, hydraulic ram, rainwater storage or combined systems.

The studies of prior feasibility are still being done technically with less precision equipment, to stablish the design bases. In the other hand, the water committee, local authorities and collaborators that make up the community leading managment group, start the analysis and discussion of the social, economic and cultural characteristics of the citizens, with the purpose of making a better comprehension of the particular problems of water and make a relationship among them and also among the general ones.

When we study the feasibility of projects, we also do the final studies with greater precision equipment, then, we do the final design.

We do workshops and meetings with the committees to discuss and define the relationship between their role and

responsibilities to the community. During the execution of the water and sanitation projects, the responsibilities are defined. At the same time, we train leaders that can write and read, so we can obtain by them, basic information by inquiring the community. This information then, is given, discuss and analized with the other members of the committee, authorities and collaborators. The results let us know the economical status and their capacity to afford the project, among other issues.

Together: committee, authorities, collaborators and ADP discuss and sign an agreement which stablises rights and obligations for the community and ADP, among these, we set up the down payments, laon, donations and the way and time of the payments.

The community leading managment group and ADP, do a schedule of the activities that the execution of the project involves, trying not to interrupt the economic, social and cultural activities of the community.

After signing the agreement, we do educational activities oriented to involve the community in reforestry and protection of the microwatersheds. Such activities will be often done later on, by the community; while ADP is doing the office work, before the project execution such as designs, plans and purchases.

Before starting to execute the project, the community leading management group and citizens, elect the local personnel that will be in charge of the operation and maintenance of the system; the same that from the beginning of the execution will be involve in technical matters which mean the construction of the system, so when the constructions is finished, they will have the capacity of taking care of the operation and self maintenance. At the beginning of the project, the committee starts colectiong the downpayments of everyone of the people who will be benefited. ADP supports the committee, doing basic managment workshops, with the goal of having them take control of the money collected, the materials, their finances and time; this way they can inform the community they represent. With the committee the activities of health sanitation are schedule. This process is directed to parents and children. They participate in the educational process with the use of proper techniques and materials that can make their participation possible. The subjects taught are related to the gastrointestinal disaeses causes and their effects, the importance and use of basic infrastructures in sanitation, water, toilets, enviromental influences and others.

Upon schedule done by the community managers, the letrinizacion (Toilets) can be done at the beginning or at the end of the project. Generally, it's done in resting periods, in other words, we try not to duplicate community efforts so people can

work when they are not working in their fields.

At a community level, other educational activities are being done by sharing experiences with the participation of the local leaders, later with other regions and finally at a national level. The subjects in the last two levels are related to economic, social and political local analysis and their relationship with the structural problems of the country.

The educational activities are done in their communities by technical specialized personnel: Rural Health Technician, Social Worker, Accountant and an Agronomist. However, the person in charge of coordinating the efforts is the Rural Aqueduct Technician (TAR) who is the link between community and ADP's working team. The Aqueduct Technician is a person trained by ADP, specialized in water supply and other elements of basic sanitation, besides that, he knows some basic elements of the other disciplines cited before.

The achievements at the end of the execution of water supply and basic sanitation projects are:

1. It has strengthened at their level, the water committee and also the community structural participation.
2. There are management capacities.
3. It has been created minimum technical capacities for the support of their own water system.
4. Capacities to do protective activities for the microwatersheds.

5. A better explanation of community health problems and activities to overcome their limitations.
6. A consolidated community leading management group with a better view of their problems and greater perspectives to impulse the follow up of the water supply and sanitation programs, and alternatives for the economic and social development in local and regional communities.

3.2 Operation, Maintenance and Administration of the Water System

When the execution of the program is done with the participation of the community, the people guided by their community leading management group, is able to operate and maintain and administrative water supply systems and excretal disposal.

The operation and maintenance of the system is attended by local plumbers, whom the committee gives a salary for their services. Whenever there are greater problems ADP helps with technical assessorship.

The operation and maintenance of the system, result in expenses that all the people has to collect, by paying monthly payments that they stablish themselves.

In relation to the maintenance of the system and their proper use, the committee is in charge of. Together with the authorities, they sanction the one who break the rules (some of them written, the other ones decided orally by the group).

until now 80% of the communities have done reforestry work in areas near to the water sources and guarantee that the source is not contaminated with chemicals, excretas or manure. The committee had achieved the recovery of the loan given to every beneficiary and they control it. They also give information about their finances status and pay in ADP's office (in some cases before the date due). The tardiness of some communities are due basically to technical mistakes in the construction of the system and not to the irresponsibility of the community. Besides, they keep an inventory of materials they have. Among all the agreements, particular rights and obligations, they are not written but they had talked about.

At the community leading management group level, new projects are proposed to benefit the community according to the needs and with a better view of their reality. It also has a greater capacity to find out aspirations and goals of the people. It also motivates them to struggle for them.

Even now that communities have water systems and toilets, their use has not been the best.

The achievement in the educational sanitation can be seen in their way of being, better hygienic habits. However, the health impact is being reviewed now.

The community leading management group maintains its capacity to convoke to meetings, it continues having meetings to analyze

and discuss new problems and needs; some are results of the project, other ones are related. The important thing is that they meet to think, discuss and make decisions. Indubitably, when the community does these actions, it has to face the internal and external limitations. In some ways, the water supply and basic sanitation projects support is gotten.

The local capacities are developed and strengthened, and the organizational structures and social participation is increased. All these elements together, represent minimum conditions but enough to start other more complicated projects aimed to benefit the community development. Their fundamental methodology is made up of community leading management group and community meetings, this way they analyze discuss and find solutions about different problems.

Sometimes, the rural teacher and local authorities participate to face the different challenges of the community but most of the time the people face the problems by themselves.

Affordable process of Development: Water Supply and Basic Sanitation:

The people gathered in Basis Micro-regional organizations, start to look for their own development on the basis of their capacities, organizational skills, social participation and their own points of view. Obviously, their efforts are according to their reality.

Facing ADP's incapacity to be in 170 communities that had been benefited with water and sanitation projects, and facing -- organizational skills and local capacities, comes up the possibility to re-gathered the communities by micro-regions. Micro-region is understood as a group of communities benefited or to be benefited with these kind of projects, accesible to a direct communication that share economic, social, politic and cultural characteristics, headed to consolidate social participation and economic development.

Under this concept, until now five organizations had arosen, on the basis of micro-regional water commitees and others. They had been in charge of finding the participation of other communities or groups. Some communities are (re-gathered without direct help from ADP) taking care of the operation and maintenance of the projects, such as APAGUA: Aguacatán Water Project Association.

These micro-regional organizations had arosen, at the beginning for the nearby projects operation and managment, however, in the means in which other groups, committees are involved and the understanding of problems and possible solutions are greater. Until now, three of these organizations have their legal status, and the other two are on the process of getting it. Besides, the plan for the operation and managment of the executed project, has a trimestral development plan: annually operative plan and specified projects at a profile level with their own leaders. This last plan is widely discuss with the

representative people from the community.

Two of these organizations have their space for rural and basic sanitation projects, their aqueducts technicians (TAR) trained by ADP, and they also can count with technical advices.

We had begun the water projects execution with people's execution greater than the one achieved by ADP, the reasons for achieving that, is because they do it from their own perspective, own sources and they communicate each other in their own language.

They have other activities such as coffee plantations, basic grains, fruit production and their trade.

They have training programs for local people in different disciplines, so they can build local capacities, which can be shared with others. The sharing of knowledge and experiences with the rest of the community is what fortifies the success of the projects.

These micro-regional organizations have good accountant systems according to their monthly financial capacity. They have technical capacities in producing basic grains, and fruit production. Moreover there is a capacity in managing needs, negotiations with other organizations, at a local and national level. They gather efforts to do the projects.

Women's participation among Basis Organizations (OB) has increased, their role is defined and very important in the execution of the programs.

ADP supports this process by training local personnel (FTL), so local capacities can be fortified and in the future people can have their own human sources, taking advantage of their knowledge, technologies and experiences.

Micro-regional Organizations work in the fields and try to put theory into practice; during this process there's a respect for cultural values. They try to build their own development. The legal support is also necessary, without leaving a blank space for learning their legal rights and obligations established by the guatemalan' laws.

The encouragement to educate and to train technically is other way in which ADP helps communities' organizations with the purpose of strengthening local leadership capacities so that they can not be city' dependants.

The financial support is ADP's task. It doesn't have to be the main goal, however, without capacities, organizations and desire to improve life' conditions, ADP doesn't think a project will be successful.

People's Water Strategies for 1990-2000 decennium.

- 3.1 Water Supply and Excretas Disposal systems by different technologies.
- 3.2 To consolidate organizational structures, Social participation and the capacities, that could manage their own regional development process and to stablish specific reivindications of the community.
- 3.3 Guarantee a good and effective managment on the administrative and local basis.
- 3.4 Technical, professional and institutional policy development that can fulfill new demmands of organization proccess.
- 3.5 To make an impact in the micro-regional and regional development according to the gobernment policy.
- 3.6 To contribute in the enviromental protection and in the development of the Ecology.

CONCLUSIONS

People's Water during 20 years of experience, has given a guide for the construction of different projects and keeps building the micro-regional development through Water Supply and Sanitation Programs.

The efforts to activate the social participation of a historically forgotten region, are slow process that will be the basis of the rightly development process in our country. We still have challenge to unite national efforts and other cooperative organizations, to build together the poorest guatemalan people development which hasn't been achieved until now.

The role of communities in the management of improved
water supply systems

CASE STUDY

**HONDURAS: TEGUCIGALPA URBAN WATER PROGRAM
THE TEGUCIGALPA MODEL**

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HONDURAS: TEGUCIGALPA URBAN WATER PROGRAM THE TEGUCIGALPA MODEL

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SUMMARY

The urban poor squatting on the fringes of Tegucigalpa city capital of Honduras represent a growing challenge to both government and external agencies. Traditional solution to the problems of these urban squatters provided by politics, laws and engineering have proven inadequate. There is no public water system serving their high settlements. As a result, residents must pay private vendors more than 10 times the official price for water, for an unsafe and insufficient supply.

To help solve the barrios water problems, in 1987 the Honduran National Water and sanitation Agency, with UNICEF support, created the Unit for Marginal Barrios (UEBM). The Unit came up with some interesting technologies: independent wells, communal tanks and trucking of water. Even more interesting and important than the technologies UEBM introduced, however, were the changes it made in the traditional approach of government and community organizations to problem solving. UEBM/SANAA and UNICEF have brought water to more than 50,000 people in 26 barrios by empowering and supporting barrios organizations in their efforts to provide and manage their own water service.

A cornerstone of the strategy to empower each barrio is the community water board elected by residents. The board manages and maintains the water system and bill the users.

The Tegucigalpa model has proven to be highly cost effective and easily replicable. Universal access to clean water for all by the year 2000 can only be realized through the use of low-cost technology, cost sharing, and cost recovery.

1. BACKGROUND

In 1970, Tegucigalpa, the capital of Honduras, had a population of less than 250,000. Twenty one years later, it is estimated that the city has 750,000 people, of which approximately 60 percent live in squatter settlements (barrios marginales). The city is growing at a rate of 5.2 percent (35,000 people) per year. Demographic forecasts predict that the population of Tegucigalpa will more than double within the next 15 years. The needs of this burgeoning population for basic services are already stretching the city's scarce resources beyond their capacity, and continued explosive growth will only strain the system further.

The Urban population in the developing world is growing at a rate of 160,000 a day; three times as fast as in rural areas. This means that in less than thirty years, 50 percent of the developing world's population will be urban. In order to deal with this situation, the developing world will have to double its infrastructure and basic services in urban areas over the next 15 to 25 years. This rampant growth, and the needs that it creates, appears to be on a collision course with the developing world's staggering environmental, economic and political problems. Foreign debt and international economic stagnation are forcing the cities in the southern hemisphere to cut their budgets and services instead of constructing for the future.

In Tegucigalpa, as in most of Latin America, land ownership patterns and complicated legal constraints; some of which date from colonial times; force immigrants to the city to rent, buy or squat illegally on land once discarded by city planners as too dangerous to build on or too difficult to develop.

As Tegucigalpa is situated in a deep valley, new residents find it necessary to perch their small wooden shacks on the edges of ravines or dig them into steep hill sides where mud slides are common and few or no public services are available. Many of the existing, and almost all of the future barrios marginales are or will be above the 1,150 m. mark; the highest altitude to which it is economically feasible to pump water.

Many of these settlements are not recognized by the government because the ownership of the land is in dispute with private owners or because they are considered by authorities as squatter "invaders" of government land.

Coming from the rural areas with no or inadequate formal education and without job skills appropriate to the urban setting, wage-earners are often condemned to a cycle of underemployment in menial and temporary jobs or forced to work as domestic servants for much less than the minimum wage. Without a steady and adequate income, many basic necessities are not met and children are often forced to leave school to work as manual labourers or beg in the streets in order to contribute to the family income.

One of the greatest causes of death in the barrios marginales is from illness

and disease resulting from water scarcity and poor quality water in the barrios marginales.

In Honduras 10 out of every 100 children die before they reach their fifth year. In Tegucigalpa health authorities point to diarrhoea as the leading health problem for children in the poor barrios, stating that a third of all infant and child deaths in the capital are related to dysentery or diarrhoea.

The barrios marginales' problems are practically insolvable through conventional programs. Like most of the developing world's governments, for years Honduras' leaders ignored the barrios marginales, forcing them to find their own solutions to their needs for basic services like water, sanitation and housing.

Tegucigalpa's Master Plan for Water will program the extension of services until 2015, during which time new water sources will be added and a renewed attempt will be made to reduce water loss through reconditioning the existing system. Unfortunately these conventional measures will do little to improve the state of most of the urban poor in the barrios marginales because they live above or outside the present and planned water distribution network. Tegucigalpa's geophysical layout is such that the problems of water distribution and the hardships caused by its lack are starkly evident.

Most barrio residents have to buy most of the water they use from private vendors at exorbitant prices. Vendors sell fifty-five gallon drums of water for up to Lps. 6.00 (US\$ 1.10); more than ten times the government's official price for those connected to the public water system. The World Health Organization maintains that no family should have to spend more than 5% of their income on water and sewage. Tegucigalpa's urban poor spends between 13 and 21%, and sometimes, during the dry season, up to 40% of their income on water that is often substandard quality.

The private sale of water in Tegucigalpa is believed to be a two million dollar a year industry. The Honduran water authority, SANAA (National Water and Sewage Service) realized that there was a tremendous potential to redirect some of these millions spent into building and managing organized and secure systems that could provide clean water.

With support from UNICEF, SANAA founded the Unit for Barrios Marginales, or UEBM/SANAA, in 1987, to undertake the challenge of providing water to poor communities that cannot be serviced by the formal distribution network.

The UEBM/SANAA soon established three alternatives for getting water into peripheral neighbourhoods:

1. The sale in block of SANAA Water from the existing network to communal tanks;

2. The drilling of new wells;
3. The trucking of water by the UEBM/SANAA to communal tanks.

2. IMPLEMENTATION STRATEGY

The implementation of the project is based on cost sharing and cost recovery, UNICEF provides the basic materials and equipment, infrastructure and technical assistance, the UEBM/SANAA provides the technical expertise, and the community provides the non- or semi-skilled labour that goes into the system's construction and some of the local small value materials. A portion of the value of the assistance provided by UNICEF and the UEBM/SANAA are considered a long-term no-interest loan to the community, payable to a special UEBM/SANAA revolving fund account by the community water board.

The revolving fund will provide a substantial long-term flow of resources which will be reinvested by UNICEF and the UEBM/SANAA to extend water coverage in Tegucigalpa. In a world of scarce resources, insufficiency basic services and decreasing budgets for their provision, the possibility of cost recovery and reinvestment is extremely attractive.

For a community to become part of the program they must:

1. demand the water project
2. have rights over the land
3. be willing to contribute with voluntary labour and invest in capital and recurrent cost
4. be willing to form a water board association
5. be willing to repay the investment made by UNICEF and UEBM/SANAA

A four-step process is used in the implementation of the UEBM/SANAA project.

The first stage is a fact finding mission that allows the Social Worker and Engineer to discover information about water sources, community preferences by interviewing local leaders and community residents. This process of community consultation helps designers choose sites, clarify land ownership issues, and discuss the nature and functions of the water board association.

The second stage starts once the water source is identified and the

community agrees with the terms of participation. A general assembly takes place where five people are elected to form the water board association. The social worker helps the water board to open a bank account, and training takes place. This training focuses on water board responsibilities and record keeping to ensure that each household contributes a fair share of voluntary labour and initial cash contribution.

The third stage of the process is the actual construction of the water project where each household contributes with equal share of voluntary labour this varies from 3 to 8 days of work. Though a member of the actual family is preferred in order to foster a spirit of collective work. The water board may also allow families to hire labour instead. The engineer assisted by a plumber supervises construction and trains local people for semi-skilled tasks, such as joining of pipes. A local mason is contracted by the water board for construction of tanks and similar skilled works. He works under supervision of the engineer and with community labour. Also information meetings are held frequently about every two weeks.

The fourth stage of the process consist of the operation, maintenance and administration of the completed system. Special training on book-keeping and financial methods is preformed during this stage.

On average the entire process takes from 8 to 10 months to be completed.

The main benefits communities perceive from the water project are:

1. Health and convenience
2. Saving of time and money
3. Control of the water system meaning revenues for the community
4. Men as well as women have gained confidence in their own capacities.
5. Have developed technical and organizational skills
6. Increase in property value

General policy is laid down by the program but water boards make local decisions such as expenditures, how to handle household which are more than three months behind in rate payments, how many employees should the board have and how much should they pay etc.

3. COMMUNITY ROLES IN WATER SYSTEM MANAGEMENT

A crucial element in the process is community participation and cooperation with the Unit for Barrios Marginales.- The strategy of the UEBM/SANAA is not to be

a provider of services, but a facilitator or supporter, encouraging and demanding "Community Management"; not only "Community Participation" in its projects.

In this partnerships UEBM/SANAA is responsible for:

1. Training of community participants in operation and maintenance, financial and administrative function on-the-job.
2. Creating and strengthening water boards associations that can effectively take responsibility for water system construction administration, operation and maintenance.
3. Surveying and design of the water system that will best serve the community with advice given by local leaders on location of tank top stands etc. After design is completed it is explained and discussed with the leaders of the community.
4. Technical assistance during the construction stage.
5. Procedures for turning over the administration, operation and maintenance of the water system.

UNICEF provides:

1. Technical assistance to the UEBM/SANAA,
2. and under writes the cost of equipment and supplies.-

COMMUNITIES are responsible for:

1. Providing non-skilled or semi-skilled labour and material contributions for construction (sand, bricks, gravel and fitting)
2. Administration, operation and maintenance of the system.
3. Repayment of the investment
4. Regulation of the use of the water and the system.
5. Carrying out population census

4. LOCAL ORGANIZATION OF COMMUNITY MANAGEMENT

Once the project is accepted by the community a water board association is democratically elect by all residents of the community and it represents all interests

within the community, and serves as the water association directorate to administer the water project in each individual neighbourhood.

This body is made up of (5) five members from the community, a president, a secretary, a treasurer, an auditor and a 'vocal'.

Board members works an a voluntary basis but board-employed staff receive a salary. Board members are elected for a period of 2 years and can he re-elected for a second term. The board has to organize a general users' assembly twice a year a give a financial account of their management to the users. The water board holds the legal representation of the community.

Main tasks performed by water board members are:

1. Represent the community in contacts with SANAA, or any agency.
2. Negotiation with UEBM/SANAA on the community project
3. Keep accurate records of all payments and expenditures
4. Organize for proper operation and maintenance of the system
5. Open bank account where users will deposit their payments
6. Organize and collect contributions from the community in cash towards construction (only before and during construction)
7. Keep records of the labour provided by each household in the construction
8. Hold water board meetings at least once per week to discuss and decide on issues, procedures and problems
9. Promote hygiene education and good use of the water and the system
10. Inform the community through a general assembly twice a year about decision to be made and to report on revenues and expenditures
11. Set up an efficient system of building and revenue collection

5. THE ROLES OF WOMEN AND MEN IN MANAGING WATER SUPPLY SYSTEMS

There is no special program policy on involvement of women as community water board members. Because they are members of the community they have the

same rights and obligations as men. Although ultimately decisions are made by men, because of all water board members participant in the program 70% are men and only 30% are women. When they are members of the water board, women are often secretaries or treasurers, reflecting their interest in community service to a project in which they have a personal interest. So far, women have not been chosen as operators.

Women participate a great deal in construction work where teams of women, men and children dig the trench where the pipe is laid, and are the greatest motivator and supporters of the project. Also women are perceived as a target group for hygiene education.

6. FINANCING AND FINANCIAL MANAGEMENT

A project for a community of 1075 people cost an average of US\$ 20,175 or about US\$ 20 per capita. Of this an average of 30% is community initial contribution in voluntary labour and cash. The remain 70% is considered a long-term no interest loan to the community to be repaid over 3-5 years through household water fees

The monthly water fees covers the cost of operation and maintenance of the system, the water boards administrative cost, repayment of the rotatory fund loan and a margin for the replacement of materials and equipment. The Monthly water fees for the project varies from US\$ 1.75 for a public standpost to US\$ 3 a yard connection. This monthly water bill is sent at the end of the month to each household by the water board and must be paid directly to the bank.

For communities, the savings can lead to a new phase of social development. For instance, all of the UEBM/SANAA early projects have managed to pay their operation cost and build substantial savings. One of these communities is currently using its savings as counterpart funds in an ambitious sewer project. Another community lent US\$ 5,000 to its community government for other local social works. The full-time secretary of the 21 de Febrero water board , speaks proudly of the US\$45,000 the community has accumulated in their bank account after three years of operation. They have contracted engineers to design a sewage system for their community, constructed sanitation facilities for their kindergarten, bought another pump for their second well. The Tegucigalpa Model has proven by example that community water boards can reach financial independence in water service and can be economically self-sufficient.

7. LEGAL AND POLICY ISSUES

The project was conceived at the edge of what national laws, regulations and governmental authorities could permit and all involved parties have had to show flexibility and a willingness to take the risk of learning by doing. Gaining the

acceptance of the delegation of highly centralized governmental functions and services to community organization has required substantial effort and input in terms of advocacy, human resources and institutional development. When the UEBM/SANAA was created, nobody actually knew how far the decentralization and delegation of responsibility and decision making authority to community organization could or should be taken.

After four years, and by meticulously and continuously evaluating and assessing the project experience and results a formal agreement between UNICEF and SANAA was signed which defined the roles and responsibility between SANAA UNICEF and COMMUNITY and outlines the general goals and theories behind the operation of the rotatory fund. From this the evolution of the structural and legal relationship between UEBM/SANAA and the communities.

8. CONCLUSIONS

Using the three alternative strategies the UEBM/SANAA has had encouraging success, bringing water service to 50,322 people in 26 urban low-income neighbourhoods in less than five years. None of these strategies are traditional engineering solutions to urban water supply, but all can provide service to otherwise unreachable populations.

But more than the use of innovative technology, the success of the Tegucigalpa Model depends on the empowerment of community organizations, and the absolute need for the water.

In the case of the Tegucigalpa-Model, it has become clear that for community management to flourish, the roles, responsibilities and authority of each of the various players must be recognized and defined, and that the interrelationships between them must be protected. It must be made clear that the community water boards are neither intended to operate independently nor uncontrolled. The UEBM/SANAA, as the major implementing government counterpart, coordinates the community management by providing administrative and technical assistance, and monitoring and auditing their financial operations. For UNICEF this implies that "technical support" is not bringing in experts to solve the problems, but the creation of an environment in which the government counterpart agencies and the community organizations are stimulated with valid alternatives to traditional models, and empowered to make sound decisions.

Implicit in the concept of community management is community participation and fiscal responsibility, not only through the construction stage, but also in its long-term operation. In most barrios marginales one can find strong, ambitious and knowledgeable leaders with solid small business experience and good human relations skills; leaders who are capable of managing funds honestly and efficiently, and who are motivated to donate their time and efforts for the welfare of their neighbours and friends.

The project has proven by example that community water boards can be economically self-sufficient when given adequate back-up support by the UEBM/SANAA.

Until now the program has not established nor at the community level nor at the institutional level an effective monitoring and evaluation system, this can be a major problem in a long run for the project. Also no studies have been carried out to determine success in meeting health goals.

The UEBM/SANAA program needs to develop innovative and more participatory capacity building methodologies that can place emphasis on developing learning and problem solving abilities rather than simply transferring technical skills.



CARE INDONESIA

**COMMUNITY SELF FINANCING FOR
WATER SUPPLY AND SANITATION SYSTEMS**

A Promising Approach to Community Management and
Financing of Water and Sanitation Facilities

By

Hadi Sucipto
and
Dan O'Brien

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BACKGROUND

Despite much effort and resources that have been provided to develop water supply and sanitation facilities for rural communities, approximately two-thirds or eighty seven million people still do not have access to sufficient and reliable sources of domestic water or sanitation facilities. The Government of Indonesia and interested international aid donors simply do not have adequate resources to meet the tremendous need.

A fundamental change, therefore, is necessary where communities are encouraged to finance, build, and maintain their water supply and sanitation facilities. This way scarce government and donor funds targeted for water supply and sanitation projects can be matched by community resources resulting in accelerated access to and use of improved water supply and sanitation facilities.

CARE Indonesia's experience in the water supply and sanitation (WS&S) sector demonstrates that the gap between available resources and water and sanitation needs can be more rapidly addressed if communities are encouraged to manage and finance their facilities. Future efforts within the WS&S sector should take greater advantage of the potential that exists in rural communities to meet the need for improved water and sanitation facilities.

WHAT and WHY CSFW

CSFW is an acronym for Community Self Financing of Water and Sanitation Systems. CSFW is a five-year pilot project designed to demonstrate that communities in rural Indonesia are able and willing to finance their water supply and sanitation systems, create a community management approach, and help bring about important changes in government and bank policy that will facilitate community financing.

Communities participating in the CSFW project finance, build, and maintain their water supply and sanitation facilities with technical assistance and training from CARE. In special cases, CARE and GOI provide partial subsidy to communities who are willing, but too poor to mobilize 100% of the resources necessary to build the systems.

The CSFW project is presently being implemented in 34 rural communities in the provinces of West Java, East Java, and West Nusa Tenggara.

While much effort and resources have been gone into helping meet the need for water and sanitation facilities in rural communities, only about 30% of the rural population have access to reliable sources of water and sanitation facilities.

A fundamental change, therefore is necessary where communities are encouraged to build and self-finance their own water and sanitation facilities. Three primary lessons have caused the concept of community financing to evolve in CARE assisted water supply and sanitation projects. These are:

1. Two thirds of all rural communities in Indonesia do not have access to safe and sufficient water and sanitation facilities. Currently, GOI and donor resources committed to improving water supply and sanitation are inadequate to satisfy the need.
2. CARE has discovered that many communities are able and willing to pay for improved WS&S systems rather than wait for subsidized systems from GOI or other donors.
3. Communities who finance their WS&S systems develop a sense of ownership, which contributes to improved system maintenance and long-term sustainability.

RELATIONSHIP OF CSFW COMPONENTS

Community financing and cost recovery is not the purpose of the project but rather part of a broader community management approach intended to strengthen the skills of communities to finance, build, and maintain their water supply and sanitation facilities.

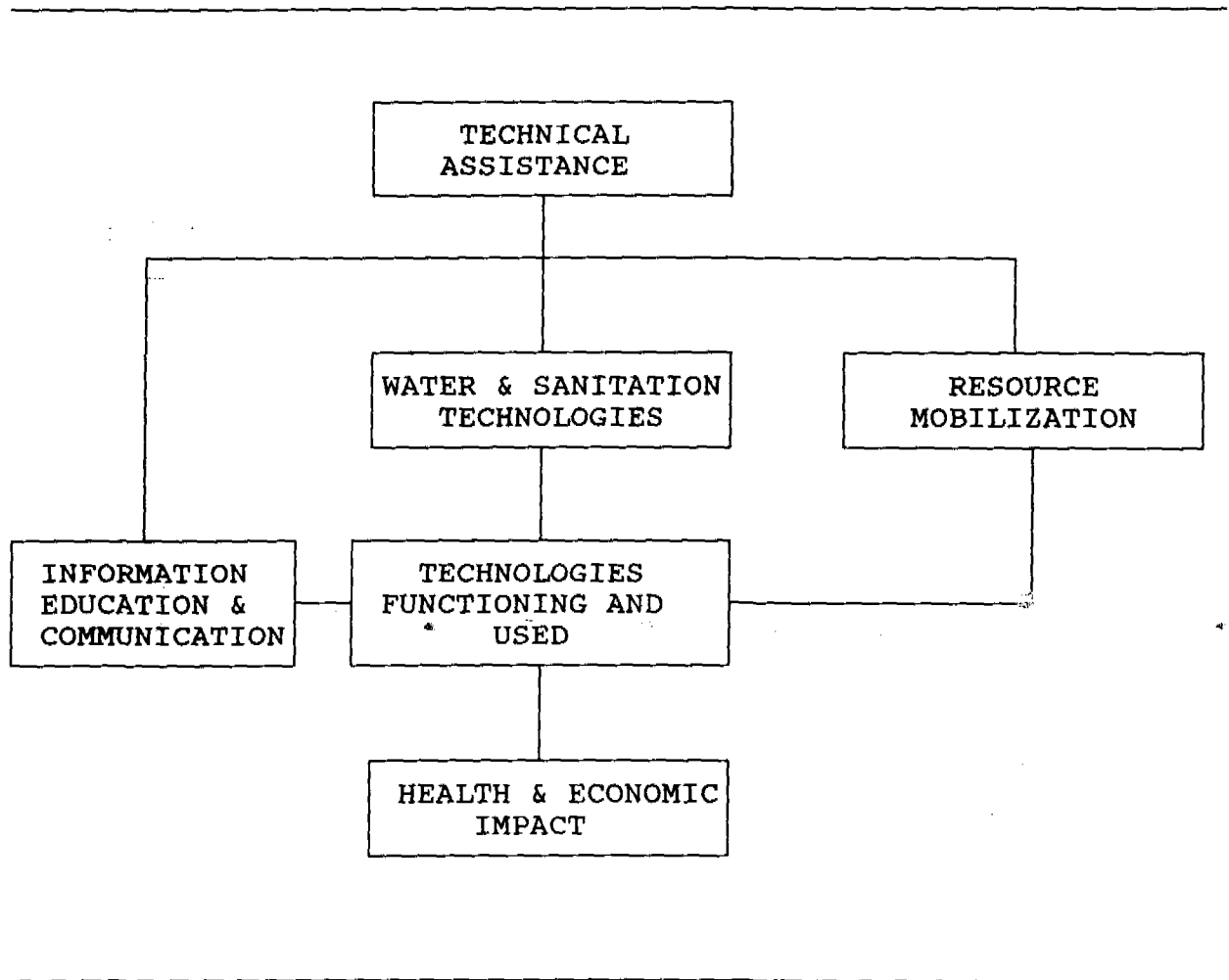
There are four major components of the CSFW approach: technical assistance, resource mobilization, construction of the water and sanitation technologies, and hygiene and sanitation education.

CARE field staff provide timely technical assistance and training to committees for resource mobilization, construction, and hygiene and sanitation education. Resource mobilization ensures labor, materials, and cash are available to construct the WS&S systems. Hygiene and sanitation education is provided to ensure the technologies are used appropriately to bring about the intended health and economic impacts.

The relationship of the four components can be seen in Figure 1 on the following page.

FIGURE 1

RELATIONSHIP OF CSFW COMPONENTS



CSFW IMPLEMENTATION

CSFW is implemented in six stages:

1. Site Selection.
2. Committee Formation and Negotiation.
3. Planning.
4. Implementation.
5. Operation and Maintenance.
6. Evaluation and Monitoring.

Site selection is conducted once each year to choose potential sites that are likely to successfully implement CSFW. Once final CSFW sites are selected, each passes through the other five stages. Figure 2 on the following page depicts this process.

Each of the stages is summarized below.

1. Site Selection - CARE and GOI select one or more districts in which to market the CSFW project. The CSFW project is marketed to potential communities and they are encouraged to apply for the project. CARE next conducts willingness and ability to pay surveys in those communities that applied for the project. Based on the results of surveys, potential CSFW communities are selected. CARE conducts meetings in each community to explain the project and answer any questions.

Site selection is probably the single most important step in CSFW. Not all sites are able to successfully complete CSFW. The primary indicators for selecting a community that will likely finish CSFW is effective leadership and organization capability, successful completion of other community projects, willingness to pay, ability to pay, and affordable technologies.

2. Committee Formation and Negotiation - CARE conducts another meeting in each potential community to select the water and sanitation committee. Once the community selects its water committee, the water committee negotiates its responsibilities with GOI and CARE. The organization of a typical water and sanitation committee appears in Figure 3.

To form the committee, CARE begins by conducting a meeting with leaders and representatives of the community. During the meeting the basic committee structure and names of all candidates are recorded on flip chart paper. Next, the community leaders conduct a second meeting in which all members of the community participate. The committee structure and candidates are presented and discussed. The final committee structure and committee members are selected.

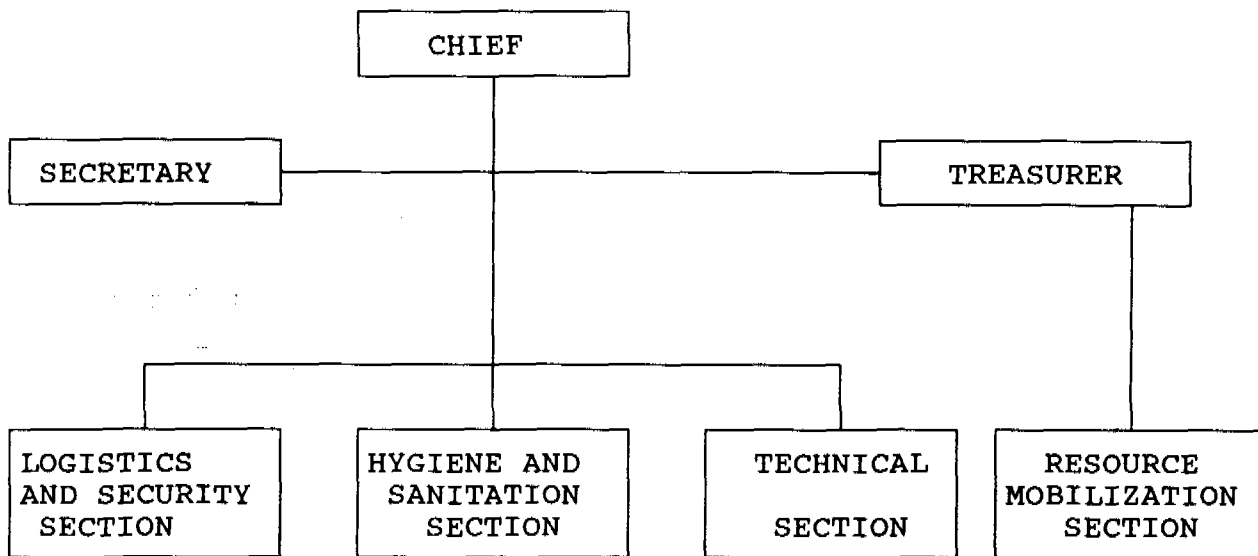
FIGURE 2

STAGES AND STEPS IN CSFW IMPLEMENTATION

Stage 1 SITE SELECTION	Stage 2 COMMITTEE FORMATION AND NEGOTIATION	Stage 3 PLANNING	Stage 4 IMPLEMENTATION	Stage 5 OPERATION AND MAINTENANCE	Stage 6 EVALUATION AND MONITORING
<p><i>Determine area of concentration for the coming year</i> <i>Market CSFW to potential communities</i> <i>Determine communities that will be surveyed</i> <i>Conduct the elected survey</i> <i>Select CSFW communities.</i> <i>Explain CSFW to community leaders</i> <i>Conduct community meetings to explain project.</i></p>	<ol style="list-style-type: none"> 1. Conduct community meeting to select water committee 2. Train water committee in roles and responsibilities 	<ol style="list-style-type: none"> 1. Choose WS&S technologies 2. Prepare designs and cost system 3. Develop resource mobilization and construction plan 4. Conduct community meeting to present plans and sign agreement 5. Train water committee on water related disease and how to conduct hygiene and sanitation survey. 6. Conduct survey. 7. Analyze survey and develop a worplan. 	<ol style="list-style-type: none"> 1. Train H&S messengers 2. Messengers communicate messages according to plan 3. Monitor H&S activities 4. Set up book keeping/control systems 5. Mobilize and monitor cash resources 6. Conduct H&S evaluation 7. Mobilize human and material resources for construction 8. Set up human and material resources and procurement systems 9. Train and begin construction depending on technology 10. Monitor quality of construction 	<ol style="list-style-type: none"> 1. Conduct community meeting to select O&M committee 2. O&M committee develops regulations and by-laws 3. Present regulation and by-laws to community 4. Develop O&M budget, bookkeeping, and training plan 5. Train O&M committee in technical areas as planned 	<ol style="list-style-type: none"> 1. Conduct H&S final evaluation 2. Conduct close out survey

FIGURE 3

**TYPICAL VILLAGE LEVEL WATER AND SANITATION
COMMITTEE STRUCTURE**



3. Planning - CARE provides the committee alternative technologies that are appropriate for the community. The committee then chooses the technologies it wants. CARE then helps the committee design and cost the systems, and develop a resource mobilization and construction plan. The water committee holds a community meeting to present the selected technologies and resource mobilization (including costs) and construction plans. During this meeting, a formal agreement between the community, GOI and CARE is signed. After the agreement is signed, CARE trains the hygiene and sanitation wing of the committee how to prevent water related disease and how to conduct the hygiene and sanitation survey. This sub-committee then conducts the survey and plans activities based on the survey results.

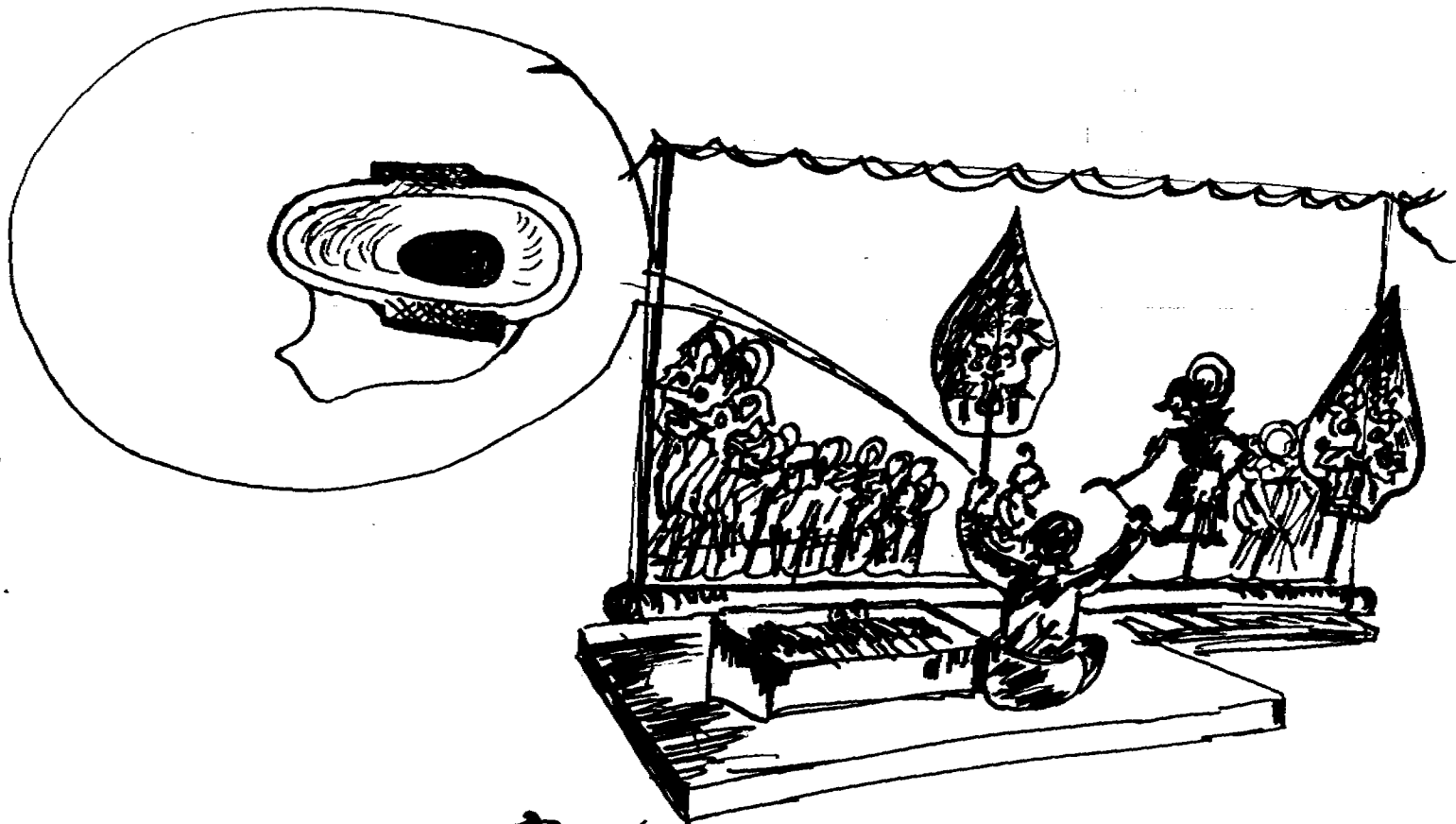
4. Implementation - This stage consists of hygiene and sanitation education, resource mobilization, and construction.

o CARE trains the hygiene and sanitation messengers to communicate messages and conduct action planning. After the training the messengers begin to communicate messages and work with other community residents to solve hygiene and sanitation problems. Generally, the messengers are trained to communicate the following messages:

- Keep the home and surrounding area clean
- Keep the public bathing areas clean
- Bathe regularly
- Wash hands regularly
- Store water in a clean container

Health messengers in the villages of Wonoanti and Bangunsari, use traditional Javanese hand puppets (Wayang Kulit) to communicate health messages to community residents, especially building and using latrines. The traditional puppet performance is a popular form of entertainment in rural communities and has proven to be an effective way to change health behavior. Villages using the puppet shows to communicate messages report that more than 80% of the households have built and now use latrines regularly.

o CARE trains the water committee to set up bookkeeping and control systems. After the training, the systems are set up and the committee begins to mobilize cash, human and material resources. Specific training includes bookkeeping systems, financial records (dues, credit cooperative, women's meetings, etc.), and procurement records.



Resource Mobilization is the process of organizing unskilled and skilled labor, collecting local materials, in-kind contributions, raising cash within the community, and using credit from banks or vendors to build the WS&S systems.

Unskilled labor is communal labor required to dig trenches or wells, transport building material, install pipes, build structures, and collect local materials. Skilled labor includes carpenters, masons, brick layers, plumbers, welders, and pipe-fitters.

Local materials needed to build the WS&S systems often include sand, stones, bricks, wood, and bamboo.

Cash can be raised from inside and outside the community. Inside cash mobilization is usually done by cost sharing or savings and loan groups. Cost sharing is based on the cost of the system. Households are divided into three to five socio-economic classes with the wealthier households paying more and the poorer ones paying less. Widows and the very poor households are either exempt or pay very little but are expected to provide labor. Communities manage payment schedules differently. Some collect each month, some at determined stages, and others pay the entire amount at once.

The most common savings and loan association is arisan, an informal savings and loan activity common to Indonesia. Other more formal village savings and loan associations also exist and are used to raise cash for WS&S projects.

Outside cash mobilization occurs through credit from pipe suppliers and banks. Credit from either local vendors or national pipe-suppliers has become a common method of financing for many CSFW communities. Pipe, fittings, and cement are purchased on credit and repayed with cash in installments, usually within two to six months.

Loans from banks are good sources of up-front capital for those communities having the capability to repay. To date CARE has made the following progress with bank policy:

1. Communities can borrow for water supply and sanitation projects;
2. Loans can be classified as investment rather than consumption (lower interest rate);
3. Collateral can be land certificates, user right certificates, GOI employee's salary, 45% cash deposit, or movable property as agreed by bank;
4. Flexible repayment terms.

In-kind contributions are sometimes made instead of cash where cash is in short supply. Two common ways to make in-kind contributions are zakat and perelek or jimpitan. Zakat is a religious tithe where members of a Moslem community are obligated to donate part of their income or agriculture production to support social services.

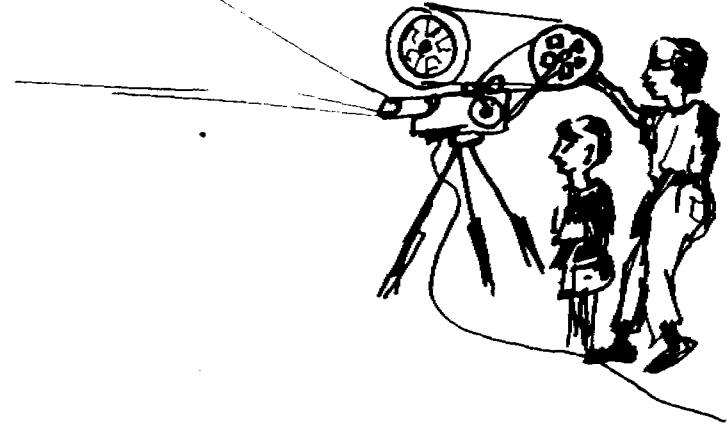
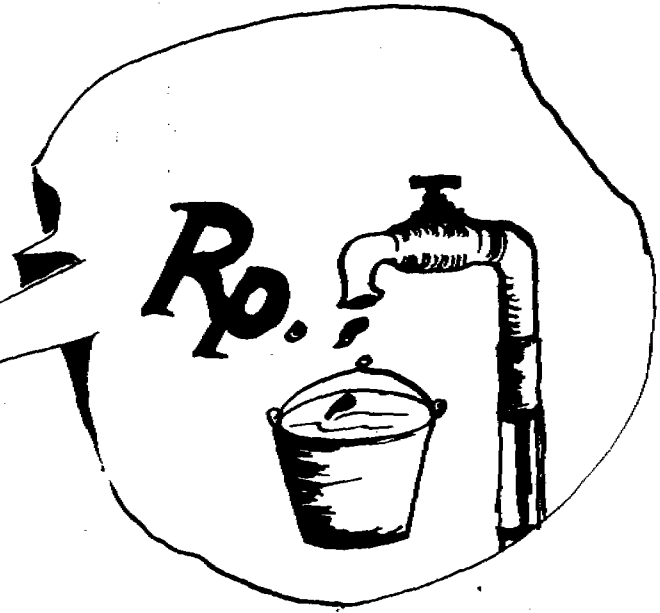
Various creative and innovative ways to mobilize resources for WS&S systems have been used by communities. For example, the village of Gawang has rented and shown movies as a way to raise money. The movies were extremely popular because community residents rarely have the opportunity to watch current films. The water and sanitation committee used the ticket sales to buy pipe and cement.

Sometimes a piped water system is not possible because the cost of piping water over a long distance is too expensive for the community. When this situation arises, the community must consider alternative technologies as did the village of Kedompol. There was not a near-by spring or river, so CARE introduced the idea of building rain water catchment tanks constructed out of bamboo reinforced cement. The community built 190 tanks for approximately 60 houses (one tank for three houses). After the construction was completed, the women in the community organized meetings to raise money to continue to build tanks. The number of tanks has increased from 190 to 431, completely financed and built by the community.

- o CARE trains the water committee to construct the water and sanitation facilities (depending on the technologies selected). Meanwhile construction and hygiene and sanitation activities are monitored and adjusted if necessary.

5. Operation and Maintenance (O&M) - The community selects its O&M committee. The committee develops regulations and by-laws and presents them to the community. Next, the committee develops the O&M budget, bookkeeping system, and training plan. CARE then provides follow-up training to the committee as planned.

Generally, operation and maintenance of the water system is organized according to user groups. For example, one public bathing facility is used by about 10 families who are responsible for maintaining the facility, including paying for any repairs. Repairs are paid for through the collection of user fees which range from about Rp.100 (\$.5) to Rp.500 (\$.50).



Another use of user fees is to actually construct the water supply and sanitation facilities as done in the village of Dersono. Once construction was completed, the committee continued to collect user fees and lent the money to a neighboring village so it too could build water supply and sanitation facilities.

In addition to user fees, village level savings and loan activities have been used. The women of the village of Wonoanti have used arisan to raise money for water seal latrines. Each woman contributed an amount of money every time the group meets. Once enough money was collected, a lottery was held and one of the user groups was chosen to receive the money to build their water seal latrines.

User groups in the village of Gawang have received a loan from the Family Income Enhancement Project to construct its water and sanitation facilities. FIE is a family planning program designed to help families increase income through village level savings and loans.

6. Evaluation and Monitoring - The final hygiene and sanitation evaluation and close out survey is conducted by the committee and CARE. CARE continues to help the O&M committee monitor the WS&S systems for about one year.

Experience in East Java has shown that communities generally maintain their WS&S facilities because a sense of ownership has been created through the community management and financing approach used by CARE.

Table 1 on the following page provides an overview of the number of beneficiaries, type of water system, total cost, M&E cost, and source of cash for each CSFW community in East Java.



NUMBER OF BENEFICIARIES, TYPE OF SYSTEM, TOTAL COST, M&E COST
SOURCE OF CASH AND STATUS FOR CSFW COMMUNITIES EAST JAVA PROVINCE

TABLE 1

NAME OF SITE	NUMBER OF BENEFICIARIES	TYPE OF WATER SYSTEM	TOTAL COST	M&E COST	COST	SOURCE OF CASH	STATUS
			OF SYSTEM	OF SYSTEM	PERCAPITA		OF SYSTEM
			US\$	US\$	US\$		(June, 1992)
Sidomulyo II	663	GFS	3,975	1,391	5.99	Community	Complete
Ngamban/Donorojo	202	GFS	1,000	350	4.95	Community	Complete
Pager/Dersono	405	GFS	3,262	1,142	8.05	Community	Complete
Sumber/Ketepung	300	GFS	1,076	376	3.59	Community	Complete
Ngunut, Bulih/Wonoanti	200	GFS	1,888	661	9.44	Community	Complete
Pojok, Siten/Wonoanti	328	GFS	4,164	1,457	12.7	Community	Complete
Krajan/Bangunsari	175	GFS	2,900	1,015	16.57	Community	On going
Pendem/Bangunsari	275	GFS	2,531	886	9.21	Community	Complete
Sekar/Donorojo	210	RWCTs	1,237	433	5.89	Community	Complete
Tinatar/Punung	180	RWCTs	1,060	371	5.89	Community	Complete
Dadapan/Pringkuku	180	RWCTs	1,060	371	5.89	Community	Complete
Bubakan	580	GFS	14,618	7,469	25.20	Community	Complete
Kitri/Tegalombo	113	GFS	750	263	6.64	Community	On going
Kebak/Mantren	158	GFS	3,375	1,181	21.36	Community	On going
Singgahan	1395	GFS	32,786	1,600	23.5	Community	Started
Kluwih	175	GFS	2,889	911	16.51	Community	Started
Mando	225	GFS	6,404	1,478	28.46	Community	Started

1. GFS/HP: Gravity Feed System/Hydrum Pump

2. RWCT: Rain Water Collection Tank.

WOMEN'S PARTICIPATION

The CSFW project is intended to be managed by the community; meaning participation in decision making from both men and women. Previous CARE water and sanitation projects tended to focus more on men as the primary decision makers. The CSFW project has attempted, with some success, to involve traditional women's organizations (PKK) in the planning and implementation of the project.

One important way women have been involved in the CSFW project is through resource mobilization. Women are traditionally responsible for managing the household finances. In the village of Worawari, the water and sanitation committee was not able to mobilize sufficient cash resources to begin construction on the water system. The women of the village proposed the idea of using their arisan activities to raise the necessary cash. Over the following year the arisan group continued to raise cash that was used by the committee to buy pipe and cement for the water system. The success the women had mobilizing resources resulted in several of them earning positions on the water and sanitation committee. Based on this experience, women and arisan have been used in other villages to mobilize resources.

Participation of women as decision makers is a trend that continues to evolve in the CSFW project. More and more women are occupying key positions on water and sanitation committees and are being consulted for important decisions.

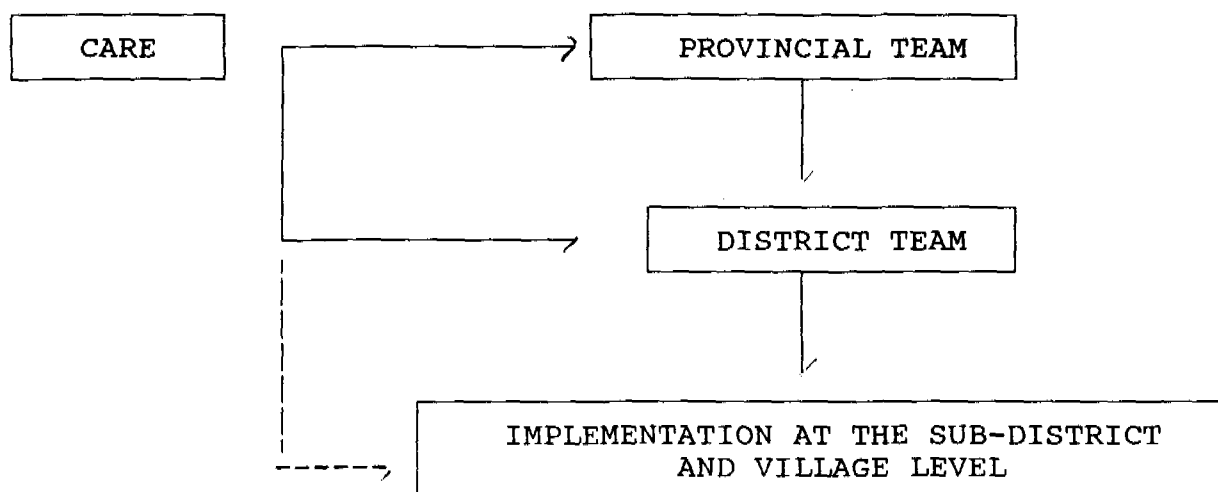
THE SUSTAINABILITY OF THE CSFW PROJECT

The goal of the CSFW project is to increase access to and use of water and sanitation facilities. The principal strategy to achieve this goal is to convince other organizations working in the WS&S sector in Indonesia to use a community management and financing approach. Since the GOI is responsible for national WS&S policy and overall coordination, this is the institution the CSFW project is trying most to influence.

CARE East Java has made exceptional progress in convincing the Provincial Government of East Java to accept and use the CSFW approach to water supply and sanitation. Together the Provincial Government and CARE in East Java have developed a strategy to transfer and sustain the CSFW approach to provincial and district agencies responsible for rural water supply and sanitation. The strategy consists of the following steps:

1. CARE trains the Provincial Government Team consisting of representatives from Public Works, Ministry of Health, Ministry of Community Development, and Bappeda (responsible for area development).
2. The Provincial Team trains District Teams. During this training CARE backstops the Provincial Team. These trainings are on-going.
3. The District Team implements the CSFW approach with backstopping from CARE field staff. This is informal on-the job type training and assistance.

The strategy is depicted in the following diagram.



CSFW CASE STUDY
PAGER AND BULU BESAR

Pager and Bulu Besar are hamlets located in the village of Dersono which is about 40 kilometers south of Pacitan, the district capital.

Before the CSFW project, residents of Pager and Bulu Besar had to walk about one kilometer to fetch water from a spring. The hamlets' residents received a grant from the local government and managed to build a spring catchment and reservoir that served as a rain water catchment tank.

Even though the residents of Pager and Bulu Besar had to walk more than a kilometer to fetch water, they were satisfied with their water supply system. In 1987, a neighboring hamlet (Gesing) received a grant from the local government to build a spring fed gravity piped water system. Because this system delivered water very near to the houses, the hamlets of Pager and Bulu Besar became very interested in the same type of system.

In order to find out more about the Gesing water system, the hamlet leaders from Pager and Bulu Besar visited Gesing and spoke with the village water committee who suggested that the hamlet leaders conduct a village meeting to discuss water supply and contact CARE.

The hamlet leaders conducted the meeting in which residents agreed to the following points:

- o Send a letter to CARE requesting technical assistance and funds for the water project.
- o The hamlets will undertake a water project whether they receive assistance from CARE or not.
- o If funds are not available from CARE or the government, the hamlets will finance the water system through household contributions.

After the meeting, the hamlets' leaders sent CARE a letter requesting assistance. CARE field staff visited the hamlets and reached the decision that Pager and Bulu Besar would finance their water and sanitation systems with technical assistance and training from CARE.

Once this agreement was reached, the leaders called another community meeting to explain the agreement with CARE and what would be expected of the community. This meeting was also used to select the village water and sanitation committee.

The first major activity was a survey carried out by the committee with technical assistance from CARE. The committee measured the flow of water at the spring, distance from the spring to the village, and the number possible placement of reservoir tanks and public water points. Based on these data, the community estimated the system to cost Rp.5.7 million or about \$3,000.

After costing the system, the committee met to discuss and develop a resource mobilization plan. The committee decided the bulk of the funds would come from two places; hamlet savings fund and household contributions. Approximately Rp.1.2 million was available from the savings fund and individual households could contribute between Rp.18,000 and Rp.27,0000. There would still be several thousand rupia needed to complete the system

At one point, the committee considered borrowing money from the bank. However, the committee and other residents in the community did not have experience with bank borrowing and felt intimidated. They decided the funds should come from local sources.

Resource mobilization slowed down considerably because of a lack of rainfall and subsequent poor harvests. Finally, the village development committee of Dersono agreed to loan the hamlets the remaining amount with no interest charge.

Availability of the funds together with technical assistance and training from CARE allowed the hamlets of Pager and Bulu Besar to complete their water and sanitation systems on schedule. To date, the water system is functioning as planned and the hamlets have repayed their loan to the village of Dersono. In addition, the committee of the hamlets have decided to build Islamic prayer houses near each public water point by using the same approach to community management and financing they learned from CARE field staff.

To ensure the system is sustained, an operation and maintenance committee has been formed and is responsible for user fee collection and management and any repairs to the system. Currently, the committee is collecting Rp.200 per household per month. Also, a user group has been formed for each public water point (bathing facility) and is responsible for cleaning the facility and making minor repairs or reporting major breakages to the operation and maintenance committee.

LESSONS LEARNED

We have analyzed the progress being made in CSFW communities in East Java as well as in other provinces and have identified several interesting characteristics of successful and less successful communities.

1. Leadership. The successful CSFW communities have strong formal and informal leaders who possess the ability to mobilize the rest of the community. These leaders include elected officials, teachers, and religious leaders. In less successful CSFW communities, strong leadership is absent. Leaders are unable to organize and mobilize the community.
2. Conflict. In several of the CSFW communities that are having difficulty, we have identified conflicts between leaders, especially political leaders. These conflicts have caused groups in the community to divide. On the other hand, conflicts and divisions are not characteristics of successful CSFW communities where the community is united and its leaders cooperate.
3. Community income. We have not been able to identify ability to pay as a significant characteristic of either successful or non-successful CSFW communities. However, the majority of people in CSFW communities won some productive land or have a source of income, even though it is often marginal. Therefore, we assume there exists an "income threshold" and if community income falls below this threshold, the CSFW project will not succeed.
4. Access to water. One of the primary characteristics of successful CSFW communities is that they do not have easy access to a water source. Community members must walk long distances to acquire water. Less successful CSFW communities almost always have a convenient supply of water. These water sources include hand-dug wells, irrigation channels, small rivers, or springs. Community members do not have to walk long distances to acquire water.
5. Water system technologies and design. Successful CSFW communities have built simple and inexpensive water systems. Technologies include rain water catchment systems, spring or river fed gravity piped systems, and handpumps. Less successful CSFW communities use the same technologies, but the designs are more complicated and the systems are more expensive.

CONCLUSIONS

After three years of implementation, experience and lessons learned suggest that the CSFW project offers a promising approach to help satisfy the needs in rural Indonesia for sustained water supply and sanitation facilities.

However, experience also suggests that the CSFW approach has limitations. For example, CSFW appears to be more appropriate for communities that have strong leadership and water access (instead of water quality) problems. Also, unavailability of affordable credit and unsuitable delivery mechanisms for technical assistance and training are obstacles that must be overcome.

The approach adopted by the CSFW project, while not a total solution, should be considered an important potential part of Indonesia's overall rural water supply and sanitation sector strategy. Communities with strong leadership and who are willing to pay for water supply and sanitation facilities should be encouraged to do so and should be supported with technical assistance and training from both government and non-government organizations working in the rural water supply and sanitation sector.

THE AGA KHAN RURAL SUPPORT PROGRAMME, PAKISTAN

**COMMUNITY PARTICIPATION IN THE MANAGEMENT
OF VILLAGE PHYSICAL INFRASTRUCTURE IN THE NORTHERN PAKISTAN:
AN EXAMPLE OF A WATER SUPPLY PROJECT IN THE HUNZA VALLEY**

**BY
MANZOOR HUSSAIN**

**A PAPER PRESENTED AT THE INTERNATIONAL WORKSHOP:
THE ROLE OF COMMUNITIES IN THE MANAGEMENT OF
IMPROVED WATER SUPPLY SYSTEMS
NOVEMBER 4-10, 1992**

**ORGANIZED BY THE IRC INTERNATIONAL WATER AND SANITATION CENTRE,
THE HAGUE, THE NETHERLANDS**

**PHYSICAL INFRASTRUCTURE AND ENGINEERING SERVICES
AKRSP, BABAR ROAD, GILGIT, NORTHERN AREAS**

OCTOBER 1992

SUMMARY

The Aga Khan Rural Support Programme (AKRSP), a non-government organization started working in the northern Pakistan in December, 1982. Its main objective is to enhance the quality of life in the rural areas where a large majority rely on subsistence farming.

AKRSP's approach is articulated by three major principles:

- i) organising the people by building institutions at the grass- root level to enable the rural communities to plan and implement their development activities,
- ii) encouraging collective savings by the people to generate their own capital, and;
- iii) upgrading farmers' skills in order to enhance the development activities.

AKRSP implements all its development programmes in the village through the Village Organisation (VO). The VO is a coalition of those residents of a village whose common economic interest is best served by organising as an interest group. As an investment in the VO, a Productive Physical Infrastructure (PPI) project is offered to each VO as a grant by AKRSP, leading to a partnership in which VO members commit themselves to the discipline of organisation and collective savings, and the VO commits itself to implement and maintain the project.

More than 1,500 rural communities have organised themselves into VOs by September 1992. These VOs have implemented over 1,200 PPI projects out of which nearly a thousand are already completed. The overall maintenance record is good for majority of the projects. One of the major outcomes of the above projects is the cultivation of 21,503 hectares of land, which increased the total cultivable land by 40 percent in the programme area.

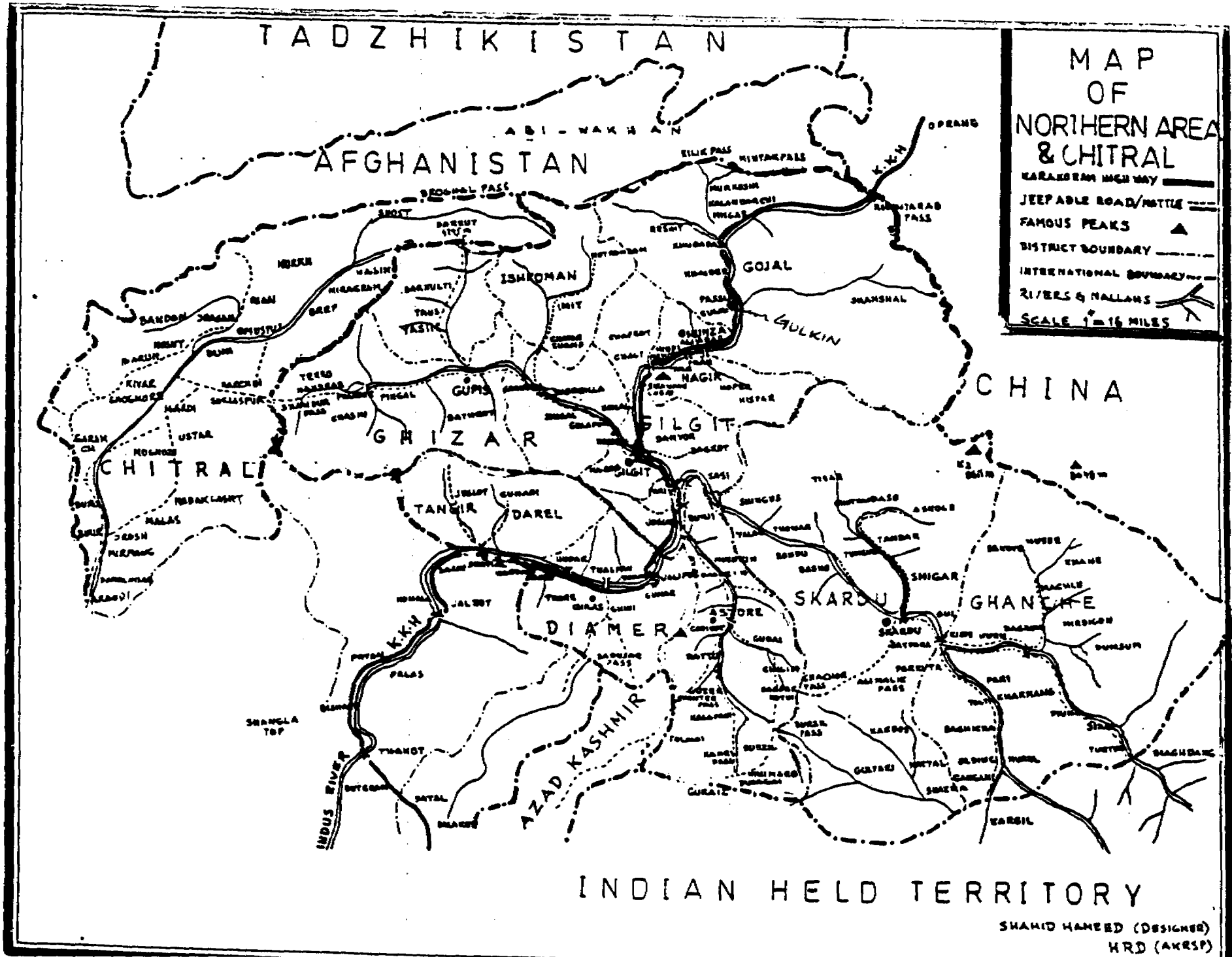
The visible success of the VOs encouraged the women to form their own organisations, collect savings, hold regular meetings, and seek development assistance from AKRSP to increase their incomes. There are 548 Women's Organisations (WOs) currently working in collaboration with AKRSP.

Experience of VOs with the PPIs has lead some VOs to implement projects in social sectors such as drinking water supply, by generating resources from other agencies or by financing them through locally mobilized resources. The project under study is one of the follow-up projects undertaken by the VO at village Gulkin, Upper Hunza in the Gilgit District.

The project presented in this study is a classic example of a successful implementation of a project through community participation. The beneficiary community was involved in all phases of project implementation and has borne all the responsibility for its operation and maintenance. Guidelines have been developed by the community to ensure a proper use and maintenance of the system. These have included the imposition of a water tariff. The project continues to run successfully.

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BACKGROUND TO THE AKRSP

The Aga Khan Rural Support Programme (AKRSP) is a private, non-profit company, established by the Aga Khan Foundation to help improve the quality of life of the villagers of northern Pakistan. AKRSP started its work in the Gilgit District in December 1982 and extended its activities on an experimental scale in June 1983 to the Chitral District of the North West Frontier Province. During 1986, the complete range of AKRSP programmes were introduced in the Baltistan District of the Northern Areas. The six districts of Northern Pakistan in which AKRSP is working have a combined population of about 800,000 (roughly 95,000 households), living in over 1,000 villages scattered over 70,000 sq.km. An estimated 90% of the population makes its living from subsistence farming: the average household has more than 8 members, farms 1.1 hectare of land of which 60% is suitable for annual crops, and owns a small number of livestock and fruit trees. Many sectors of the farm economy have a level of productivity that is much lower than Pakistan's.

A relatively poor natural resource base, rapid population growth, appalling communications, narrow-based banking facilities, and lack of employment opportunities have resulted in severe poverty. According to rough calculations, the per capita incomes were in the neighborhood of US \$150 per annum when AKRSP commenced activities in 1983. That was less than on-half of the national average for Pakistan.

AKRSP was established in 1982 with a mandate to focus on income generation in collaboration with government departments, elected bodies, national and international development agencies and commercial institutions. The seed money for AKRSP was provided by the Aga Khan Foundation, which it continues to contribute yearly. The balance is made up of generous contributions by the following: the government of Canada (CIDA), The Netherlands, United Kingdom (ODA) and Commission of European Communities (CEC), Konrad Adenauer Foundation and OXFAM. USAID and Heifer International also funded the programme in the past.

AKRSP has three principal objectives:

- i) raising the incomes and quality of life of approximately one million people in the remote areas in the mountainous north of Pakistan;
- ii) developing institutional and technical models for equitable development;
- iii) evolving sustainable, long term strategies for productive management of natural resources in dry and fragile mountain environment.

A fourth objective, conditional on the achievement of the first three, is to demonstrate approaches that can be replicated.

The approach that has been articulated by AKRSP to achieve its objectives is distilled from the experience of agricultural co-operative movements in Europe and Asia. The key feature of this approach is the insistence that small farmers organise themselves into broad-based, multi-purpose Village Organisations (VOs) to overcome the handicaps of their subsistence holding. The VOs must meet regularly as a village assembly for decision-making and monitoring progress. The second principle of AKRSP's approach is that farmers must submit to the discipline of contributing to collective savings to generate their own capital. These savings are based on contributions by individual members to the collective savings, made at each VO meeting. Records of individual contributions are meticulously kept, and entitle members to participate in activities of the VO. The third principle is that farmers need to upgrade their skills in order to undertake development activities. VOs nominate members to be trained by AKRSP as village specialists in skills needed to achieve development objectives.

Till the end of September 1992, 1,555 rural communities have organised themselves into VOs. They have a membership of 68,853 farmers, and an equity capital of Rs. 118.43 million (including WO saving).

The methodology for development introduced to the Northern Areas by AKRSP appears to have taken root. The visible success of the VOs encouraged women in the project area to form their own organisations, collect savings, hold regular meetings, and seek development assistance from AKRSP to increase their incomes. Cultural and religious differences have inhibited the spread of WOs to the entire project area. But the principle of encouraging women to participate in development activities has been accepted almost universally. There are now 548 Women's Organisations (WOs) working with AKRSP, as of September 30, 1992. WOs have already enrolled 18,930 members and saved Rs. 16.6 million.

AKRSP's IMPLEMENTATION STRATEGY

The instrument through which AKRSP implements its development programmes at the village level is the Village Organisation (VO). The VO is a coalition of those residents of a village whose common economic interest is best served by organising as an interest group. The VO is formed around a Productive Physical Infrastructure Project (PPI) that villagers' feel will unleash their productive potential and enable them to enhance their income. The first PPI project is offered as a grant by AKRSP to each VO, leading to a partnership in which VO members commit themselves to the discipline of organisation and collective savings, and the VO commits itself

to implement and maintain the project. The project serves as an entry point for a wide range of development activities that are undertaken jointly by AKRSP and the Village Organisation.

The thrust of AKRSP's contribution in this partnership for development is towards creating a self-perpetuating institution through which villagers can act in concert to manage their human and material resources so as to attain progressively higher standards of living. All members of the organisation are required to attend weekly or monthly meetings where work done on a project is reviewed, plans are made for the future and savings are deposited by all members. In short, the Village Organisation is AKRSP's executing agency for all village level projects.

The distinguishing feature of AKRSP as a development agency is in the belief that a self-sustaining development process in the countryside can be built only on the organisation, skills and capital of village residents. In practice, this philosophy means that every step of the first three phases of project activity - identification, preparation and appraisal - proceeds through a series of interactive dialogues between villagers and AKRSP. Together, the first three phases of project activity are called the Dialogues of the Diagnostic Survey. In the first Dialogue, initially the General Manager, explained the objectives and methods of AKRSP to the villagers. The General Manager invited the villagers to identify an income-generating project that would benefit most of the villagers, and that could be implemented and maintained by the villagers themselves. With expansion, the Regional Programme Officer holds the dialogues. In the Second Dialogue, the project identified by the villagers is appraised for technical feasibility by AKRSP staff working with knowledgeable villagers. It is on the basis of on-site information that technical plans and cost estimates are drawn up. Finally, the completed project proposal is taken to the villagers and discussed with them in the Third Dialogue, in which AKRSP and the Village Organisation explore the terms of partnership that would characterize the relationship between the two entities. The successful completion of the Third Dialogue marks the end of the Diagnostic Survey and leads to project implementation. All on-going activities are monitored and assessed regularly by AKRSP staff.

Through the PPI programme, a total of 1,262 projects worth Rs. 228 million had been initiated by September 30, 1992, the combined physical progress was 75 percent, and 943 PPIs were already completed (see Table 2.1 for the details of PPIs). It is estimated that these village-based projects have benefitted over 72,784 households. As a result of the irrigation schemes initiated by AKRSP, it is estimated that the overall cultivable land in the programme area has been increased by 40 percent i.e. an additional 21,503 hectares to the 53,672 hectares already existing before AKRSP's intervention.

Table 1

Details of the Productive Physical Infrastructure (PPI) projects been initiated and completed with AKRSP's assistance in the Programme Area as ^{of} September 30, 1992.

PROJECT TYPE	GILGIT			CHITRAL			BALTISTAN			TOTAL		
	Ini.	Comp.	%	Ini.	Comp.	%	Ini.	Comp.	%	Ini.	Comp.	%
Irrigation Channel	190	173	91	218	148	68	195	118	61	603	439	73
Syphon Irrigation	2	2	100	9	1	11	0	0	0	11	3	27
Pipe Irrigation	6	3	50	5	3	60	35	30	86	46	36	78
Lift Irrigation	5	4	80	2	0	0	12	6	50	19	10	53
Link Road	61	59	97	140	92	66	36	28	78	237	179	76
Protective Works	30	30	100	57	44	77	60	47	78	147	121	82
Storage Reservoir	26	22	85	17	11	65	20	17	85	63	50	79
Mud-flow Control	2	1	50	0	0	0	0	0	0	2	1	50
Sedimentation Tank	3	2	67	1	0	0	0	0	0	4	2	50
Pony Track	3	3	100	1	1	100	34	27	79	38	31	82
Bridge	7	7	100	13	10	77	0	0	0	20	17	85
Bridge/Link Road	2	2	100	0	0	0	0	0	0	2	2	100
Boundary Wall	3	2	67	0	0	0	46	35	76	49	37	76
Super Passage	1	1	100	0	0	0	0	0	0	1	1	100
Nursery	5	5	100	0	0	0	0	0	0	5	5	100
Micro Hydel	2	1	50	4	1	25	0	0	0	6	2	33
Flour Mill	0	0	0	1	1	100	0	0	0	1	1	100
Foot Bridge	0	0	0	1	0	0	7	6	86	8	6	75
Total	348	317	91	469	312	67	445	314	71	1,262	943	75

The VO members are responsible for operating and maintaining their PPI projects. In most cases, the villagers have been regularly and efficiently maintaining their PPIs from their own resources. There are cases however, where the maintenance has been neglected resulting in the abandonment of the project. In the Gilgit region, AKRSP sponsored protective works, i.e. protective bunds against floods and soil erosion, have proved to be unsuccessful. In all, 30 protective works have been completed, of which 15 have not been maintained and in fact have been abandoned. The rest have had minimum maintenance. Compare this to the maintenance record on the irrigation channels constructed in Gilgit. Uptill December 31, 1991, 172 irrigation channels have been completed. The study on the operation and maintenance of the PPI projects in Gilgit showed that of the 172 channels completed, only 7 were not maintained. The others were functioning efficiently due to regular maintenance.

PROJECT BACKGROUND

Although AKRSP has primarily encouraged the implementation of projects of economic benefit to the VOs, it has increasingly been recognized that demand exists for projects in the social sector. AKRSP has collaborated with other agencies such as the Aga Khan Health Services (AKHS), Aga Khan Housing Board (AKHB), and the local government in implementing project in the field of water supply, community health and education. As a result of VO experience with the first PPI project, some VOs have implemented second PPIs by generating resources internally within the VO or by approaching other agencies working in the area. Second PPIs have also been financed by obtaining credit from AKRSP.

The project under study is a second PPI implemented by VO Gulkin with technical assistance from AKRSP.

Gulkin is located at an altitude of 2,500 meters in Upper Hunza, 145 km from Gilgit town on the Karakorum Highway (KKH). A link road, nearly 5 km long, connects Gulkin with the KKH. Gulkin village has 102 households with an estimated population of 950. After AKRSP's intervention in the region, people in Gulkin formed their Village Organization in March 1983. The VO has 100 members. Women in the village also formed their Women Organization in 1985, and has a membership of 102.

The Gulkin VO undertook an irrigation channel project as their first PPI in 1983. The channel was to bring under cultivation barren land which could not be used productively due to shortage of water. This project was started in 1983 but a number of problems prevented its completion. The major problem was that the source of the water for the irrigation channel was affected due to the movement of the glacier. A problem also existed with the ownership of the barren land with an adjacent village Hussani.

It was one of the very few PPI projects which had to be abandoned during the implementation stage. A considerable amount of money and the villager's valuable time was spent on the project.

Although the villagers selected the irrigation channel project as their PPI, they had also expressed their need for a drinking water supply scheme during the Diagnostic Survey.

A glacial spring located at the eastern boundary of the village was the main source of drinking water in the village. Although the villagers were satisfied with the quality of the water at the source, however the women had to trek a considerable distance to fetch water for household needs, as traditionally women are responsible for the management of domestic water. The women in the Northern Areas have an extremely heavy workload. They are engaged in many agricultural activities as well as having household responsibilities. They can ill afford to spend time on tracking for many hours to fetch water especially in the summer when farm work is at its peak.

Due to lack of time , the community relied on small streams running through the village. Though this served their purpose, they were well aware that the water they drank was not safe. As the open streams ran through the village, they were liable to be polluted both by humans and animals.

The government, through a UNICEF funded water and sanitation improvement programme, provided 1,500 ft (450 m) of pipe in 1983 for the establishment of a water supply system in the village. The villagers were required to provide free labour. The villagers complained strongly that no technical assistance was extended by the promoting agency during the implementation of the project resulting in the pipes been laid too shallow in the ground. They also mentioned that the length of pipe supplied was too short to serve the majority of the population. The system could not withstand the severe winter weather. Since the pipes were laid too shallow they froze and cracked in many places. The responsibility for maintenance was not clearly defined with the beneficiary community. This led to confusion over repair of the system and eventually the project was abandoned.

The problem of safe and convenient drinking water supply had persisted until 1989. Fortunately for the VO, the Canadian High Commissioner while on a private trekking tour of the Northern Areas passed through Gulkin. The VO activist, Mr. Ashraf Khan appraised the visitors of the community's need for a drinking water project. The Canadian government has actively supported AKRSP activities in the region. The High Commissioner willingly agreed to extend that support to include the VO Gulkin water supply project. AKRSP was requested by both, the villagers and the Canadian High Commission, for its assistance in the implementation of the project.

COMMUNITY ROLE IN PROJECT IMPLEMENTATION AND MANAGEMENT

The Village Organisation played the main role during all phases of project implementation. VO meetings were frequently arranged to discuss various concerned issues. It was mentioned that in the initial stages some of the households residing nearby the source did not want to participate equally as the others. After many VO meetings the entire community agreed to have a piped water system in the village. A Water Committee (WC) was formed and given the overall responsibility of organizing and managing the construction of the project. The WC consists of 18 members and has to report to the VO about the progress of the project.

The Water Committee assisted AKRSP's technical staff in planning and designing the system. It was proposed by the majority of the VO members that house/yard connection be given to every household. The WC also assisted during the preparation of lay-out plans by identifying the desired routes of the pipe lines. This activity was followed by preparation of designs and cost estimates by the AKRSP engineers. Project documents were then sent to the Canadian High Commission where a grant of Rs. 500,000 was sanctioned. This amount was deposited in the VO account. The VO President and the Manager, who are also members of the Water Committee were allowed to deal with the financial matters.

For the project to be successful and to be completed on time, it was agreed that every household would contribute atleast one adult for work on the project daily. Absentees were fined Rs.50 per day. To better manage the construction work, the WC was further sub-divided into four smaller committees: record keeping, regulatory, purchasing, food management for the workers. AKRSP's technical staff visited the village regularly to assess the quality and progress of the work. Generally the villagers carried out the work to the entire satisfaction of the engineers. There were two skilled plumbers in the village, who were hired by the villagers on the project.

The project was completed in one year. Each household was given a water connection. Most of the houses had no internal plumbing and received a yard connection instead. AKRSP treated the project as a normal PPI by asking the VO to agree to the Terms Of Partnership. The onus for maintenance was on the VO.

	Identification	Planning	Implementation	Operation & Management	Monitoring & Evaluation
Community
AKRSP		.	.		.

Since it was a gravity-fed system, it did not need any continuous effort for operation. The system mainly consisted of an intake reservoir, pipe network and delivery taps. It was decided by the VO that the Water Committee would continue to exist to resolve maintenance issues. The four sub-committees of the WC, however, were dissolved after completion of the project.

A store of spare parts has been established by the Water Committee to meet the maintenance needs. This was made possible by saving money out of the project's labour cost. The benefit of establishing a spare parts store has clearly been demonstrated recently. Unprecedented rains during the September of 1992 led to land sliding which damaged a portion of the main supply line. The damages were made good quickly and efficiently. Villagers provided free labour while the services of a plumber were hired for the repair work. The system was made functional within a week.

LOCAL ORGANIZATION OF COMMUNITY MANAGEMENT

As was mentioned previously, the Village Organizations were formed as a pre-requisite to AKRSP's further collaboration with the rural population in the programme area. In the village under study, the people also decided to form the Water Committee to deal with the matters concerning the water supply project. The members of the WC were selected during VO meetings based on their usefulness to relative tasks. There was however, no representation of women in the WC. The WC, after playing a very active role during the project implementation, has also made the following rules and regulation governing the use and management of the system:

- i) A water tariff of Rs. 10 per household per year has been imposed which has to be deposited in the "Reserve Funds". A sum of Rs. 40,000 has been deposited so far in the Reserve Funds which also includes savings from the labour cost component of the project.
- ii) In order to avoid the wastage/misuse of water, a fine of Rs. 25 is imposed when a house or yard tap is found open without use or if it is used for agricultural purposes. Women have the main responsibility for water use and realize that it is a commodity not to be wasted or misused.
- iii) The WC is responsible for maintaining and repairing the supply and distribution mains. The larger pipes [3/4 inch (20 mm) to 3 inch (75 mm)] are to be maintained by the WC and the smaller pipes [1/2 inch (13 mm)] linked to the house/yard are the responsibility of the user.
- iv) A written application to the WC is required for a new connection. Only one connection per household is granted.

The above regulations have been in place since early 1990. It was reported that the entire village respects these rules and regulations. There has been very few incidents when people were found to be breaking these rules.

The WC was set up for the specific purpose of managing the construction and maintenance of the project. All members agreed that the WC has fulfilled its mandate and has ensured the efficient supply of drinking water to the village. However, it was generally felt in the VO that the construction phase necessitated a large Water Committee to deal with the many different aspects of implementation. With the project firmly in place, it is felt that a smaller WC could operate much more efficiently. VO meetings have been held to discuss the reformation of the WC.

During discussions on the reformation of the WC, its members agreed to a smaller committee. The WC after its experience in managing the project highlighted the need for a permanent care-taker, preferably a plumber. This will entail higher water tariff. However, the WC felt that the villagers may not be able to meet the higher water tariff due to an under construction school been built on a self-help basis, which was taking a considerable amount of VO resources.

THE ROLE OF WOMEN IN MANAGING THE WATER SUPPLY SYSTEM

As was mentioned earlier, a Women's Organization (WO) has been set up in the village. Women actively participate in all agricultural activities and there is a considerable degree of collaboration between the VO and the WO. For instance, the marketing of WO produce is undertaken by the VO.

As far as the drinking water project is concerned, it was a felt need of the WO since its inception. As mentioned earlier, fetching water for domestic use is the soul responsibility of the women. Any project which was likely to reduce the time taken in water collection would benefit the women tremendously. The women, however, are not involved in managing or maintaining the project in any way except to ensure that there is no wastage of water at the household level.

SKILLS DEVELOPMENT, TRAINING AND SUPPORT

For the management of water system, both technical as well as managerial skills are needed. The villagers have clearly demonstrated that they possess the necessary skills for managing the project. However, they could benefit by enhancing their technical skills. Although the required technical skills are available in the village, these may be improved by grafting on newer techniques.

One of the basic principles of AKRSP is the enhancement of the local skills, both managerial and technical. Courses are run in micro-hyde project maintenance and farm machinery maintenance. No courses have as yet been devised in maintenance of water supply projects. With the increasing demand for social sector projects from the villagers, AKRSP may be called on to offer courses in subjects such as water supply system maintenance.

The WC has not focused on the need for skill development, training and support. Availability of relevant skills sufficient to perform basic maintenance are available in the village. The skills in the form of professional plumbers have been used for project maintenance.

As far as the managerial skills are concerned, people in most of the programme area have expertise in book keeping, accounts etc. These are the VO managers who are given the above mentioned trainings. The trainings are arranged at the field as well as at the training centres in the large towns. The VO managers are responsible for keeping the records of VO meetings, maintaining the saving accounts of individual members in the VO books, and calculating and distributing the profit on individual balances. In short, the VO manager deals with all financial matters related to the members at the village level. The managers are also assisted by AKRSP's Field Accountants, who are the trainers of the managers in accounts and book keeping.

FINANCING AND FINANCIAL MANAGEMENT

Generally, the installation cost of a project varies according to the nature and size of a system. Considering the geo-physical conditions of the region, mainly two types of systems are prevalent: gravity-fed systems and the lift systems.

The gravity-fed systems are comparatively economical for providing similar services. No operational costs are involved in such systems. Maintenance requirements are also low compared to that of a lift system. In a lift system, the major cost component is the cost of machinery. Operational cost of a lift system may significantly increase if it has to be run through sources other than electricity. There are some instances where communities faced great problems to operate and maintain such systems in the programme area. The experiences are mainly with the lift irrigation projects.

The government has recently planned to launch a water supply and sanitation improvement programme in the northern Pakistan with the financial assistance from The Netherlands government and the World Bank. The project manifests many activities including construction of over three hundred water supply schemes. It has been assumed that all the above schemes are gravity-fed, and incorporate some

form of sand filtration. The proposed schemes have been categorized into small, medium, and large according to the number of people they serve. Small schemes are meant to serve a maximum population of 400, whereas medium and large schemes are proposed to serve 1,200 and 3,500 people respectively. According to the estimates, the average capital cost of a small scheme is Rs. 0.5 M (US\$ 19,600), while those of the medium and large schemes are Rs. 0.9 M (US\$ 35,300), and Rs. 1.9 M (US\$ 74,500) respectively.

In most of the water supply programmes in the rural areas, the communities are expected to share in the cost of the project. This is mainly in terms of free or subsidised labour or locally available materials to be used in the construction of the project. Although AKRSP's project (PPI) cost is a grant to the VO, however the community is still required to provide subsidized unskilled labour. This is organized by negotiating on the estimated cost of the unskilled labour component of the project. The negotiations take place during the Third Dialogue when the project is finalized with the community. In general, nearly 30 percent of the unskilled labour cost is expected to be borne by the community.

Willingness of communities to pay varies from community to community, depending on the need and the extent that an individual community is motivated. The general economic condition of a community also effects its ability to pay. From AKRSP's experience, it is clear that people are more willing to pay and maintain projects which give a greater and quick economic returns.

LEGAL AND POLICY ISSUES

There has been an increasing trend towards involving the communities in the implementation and management of their projects by the government. In fact the government of Pakistan has recently announced the establishment of a National Rural Support Programme (NRSP) to cover the whole country. The basic principles behind the NRSP are the promotion and development of grass-root level institutions i.e. Village Organisations, which shall be responsible for managing and maintaining their affairs and projects.

The government has recognized VOs as legal entities in some parts of the country e.g. Balouchistan Province. In the Northern Areas, AKRSP sponsored VOs are not legal entities but are used by the government and other agencies working in the area as a forum for project implementation or collaboration. Projects implemented through community participation are by and large the property of the local community. The AKRSP sponsored PPI projects are the property of the VOs, whereas project implemented with government assistance are considered as government property.

In the Northern Areas, water use is subject to traditional rules and regulations. These may have been framed over many decades and

though not written down, are nonetheless adhered to. Small water supply schemes do not fall under the law of national water use.

Although there is a national policy which aims to charge the communities for basic services supplied, this policy is not uniformly applied throughout the country. The Northern Areas are considered to be especially backward with a very low level of income. Basic services are subsidised to a large extent. Drinking water supply schemes are exempt from any form of tariff.

MONITORING, EVALUATION, AND INFORMATION

A participatory monitoring approach is adopted with the progress and water system performance is monitored mainly at the village by the VO and the WC. Relating issues are discussed in the village meetings which the VO regularly hold. These meetings are also periodically attended by the AKRSP's field based staff, mainly the Social Organizers and the engineers. During the meetings, overall system performance is reported. AKRSP staff also report the progress and performance to the Regional Offices on a monthly and quarterly basis. The VO and WC also keep various forms of written records. These records are kept through the following books:

- a) A Minutes Book, which has the details of the VO and WC meetings held at the village.
- b) A work-attendance register, mainly used during the project implementation. It has all the details of the labour work.
- c) A Cash Book, with details of income and expenditures.
- d) A Stock Register, listing the details of different items available in the stock of spare-parts.
- e) The VO/WC also keeps the records of the goods issued through an Issue Register.

The above information is analyzed by the AKRSP field staff. When needed, visits to the project are paid in order to verify the information. In addition, the Social Organizer also keeps the records of VO savings in banks and the details of loans etc.

Programme information is given a prime importance in AKRSP activities. It is managed at all levels, right from the village to the senior management in the organization. The VO president and manager collects information from the members and keeps in the above mentioned books. The Social Organizer incorporates the above information in his/her monthly diary (report), which has to be regularly provided to the management staff. The above information provides a detailed background of the individual VOs/WOs to the management staff based in the Regional Offices, and helps them draw policies and suggest appropriate packages for the village. The

quarterly and annual reports of AKRSP are compiled by utilizing the information obtained directly and indirectly from the field.

CONCLUSIONS AND LESSONS LEARNED

The most important factor contributing to the success of this project has been the close involvement of the community in all phases of the project, i.e. in identifying, planning, designing, construction, and maintenance. This has been demonstrated by the AKRSP experience of completing nearly a thousand PPI projects with close community involvement.

Another essential ingredient of success is the level of motivation of the community. Projects implemented under the VO umbrella are deemed to benefit all members equitably. AKRSP insists on a project which benefits the whole community because only then full participation of the community can be ensured.

The major constraint is in introducing technology which can not be maintained locally. Shortage of technical skills greatly hinders the scope of the projects which can be implemented. In many cases, projects which are seemingly beneficial to the community have had to be shelved due to a shortage of funds.

Any project intended to benefit a target community must fully involve that community. Small communities have the ability to manage small scale projects. However, there is always a need for support from external agencies to improve on the villager's managerial and technical skills.

COMMUNITY MANAGEMENT SYSTEMS FOR RURAL WATER SUPPLY

CASE STUDY IN UGANDA

1 BACKGROUND.

1.1 Community Management Systems in Uganda, Historical and Present National Perspective

Community management (CM) of Rural Water Supply (RWS) is not new in Uganda!. From time immemorial communities through local leadership (chiefs, village headmen etc), have always been responsible for the care and maintenance of their water supply. Law enforcement combined with taboos (harsh retribution from "gods") kept water sources in reasonable conditions.

With the introduction of sophisticated RWS systems, especially boreholes in the 1930s, marked the beginning of centralised maintenance arrangements. These took the form of a network of fifteen regional Borehole Maintenance Units (BMUs) which were manned, financed, equipped and supervised through regional institutions (see map 1).

This was the situation pertaining in 1980, when UNICEF resumed operations in Uganda. An inventory then made revealed that out of the national stock of 5089 boreholes, 75% were not functioning (1). Govt. of Uganda (GOU) with UNICEF assistance embarked on a rehabilitation program of equipping BMUs, training of staff and repair of boreholes. Despite this heavy investment, three years later in 1983, a follow up survey revealed that 67.8% were again broken down!(1).

The Alma Ata PHC declaration (2) which included RWS with strong advocacy for community participation, affordable and appropriate technologies and global economic decline in early 1980s are two major events that influenced GOU and the development establishment in drawing up new strategies for RWS.

Largely due to the above factors, GOU shopped around for a pump that lent itself to Village Level Operation and Maintenance (VLOM) as the pump in use then, dubbed UI (or Uganda one), did not meet VLOM requirements. The Indian mark II, with a record of world success was chosen and 1984 saw the start of a program of replacing all the UI boreholes in the country with UII as the new pump was called.

Early in 1986, UNICEF in response to GOU request for an emergency RWS for returnees in the war ravaged district of Luwero used the opportunity to experiment on CM prior to national implementation. During implementation intersectoral collaboration was introduced with the technical Water Development Department (WDD) incorporating the Community Development Department (CDD) for provision of social mobilisers to assist in community organisation in order to build capacities for CM.

Buoyed and encouraged by the successes of the pilot project, in 1987, UNICEF entered into agreement with GOU to experiment on CM beyond RWS and cover the rest of the PHC elements. The South West Integrated Program (SWIP), as the resulting program was called, is implemented in south western Uganda and aims at establishing community managed PHC or Community Based Health Care (CBHC) and CM systems for RWS.

Later in the same year, the Danish International Development Agency (DANIDA), probably attracted by successes in Uganda on CM conceived a community based RUrAl Water and SANitation program (RUWASA) in eastern Uganda covering seven districts. UNICEF in collaboration with NGOs followed soon after with introduction of CM systems for RWS in eighteen districts under a Water and Sanitation program (WATSAN). Early this year (1992) World Bank signed an agreement with GOU to implement a development program in northern Uganda called Northern Uganda Reconstruction Program (NURP) with a component on RWS. UNICEF is to provide assistance in building capacities for CM.

From the above national perspective it is clear Uganda is on the road to national institutionalisation of CM for RWS.

1.2 South West Integrated Project (SWIP)

The program was launched in May 1987, initially covering 5 districts of south western Uganda but was expanded in 1992 with three additional districts. It covers a population of 4.2 million people. It is jointly funded by Canadian International Development Agency (CIDA), Swedish International Development Authority, (SIDA), UNICEF and GOU. SIDA and CIDA channel their assistance through UNICEF.

By 1995, and in each district, SWIP aims to establish:-

- o A sustainable, replicable system for initiating and supporting community based improvements in health, sanitation and use of safe water supplies integrated into district/community structures.

It is further hoped that the attainment of the above objective will, in the long run, contribute to:-

- o A reduction in under 5 (U5) mortality and morbidity due to diarrhoeal diseases.
- o An improvement of U5 nutritional status.
- o A reduction in women workload.
- o An increased role of women in decision making.

According to SWIP, the above objectives shall prevail if the program produces ten outputs at different stages of the implementation period as a result of program activities.

These are:-

I. Community health, sanitation and water supply improved through:-

1. Communities supplied with and using safe water based on approved procedures.
2. Quality of water source development and construction improved.
3. Sanitation improved through integration into new water source development and established safe water sources according to approved procedures.
4. Environmental changes regarding quantity and quality of water monitored and corrective action taken.
5. CBHC established following approved procedures.

II. Districts capacity to facilitate community action improved through:-

6. Planning, management, supervision and intersectoral collaboration at district level improved.
7. Water, health and sanitation improvements integrated into district institutional framework.
8. District system for obtaining, delivering and accounting for external inputs strengthened.

III. Advocacy for:-

9. National Policies on water, sanitation and CBHC influenced.
10. Integration of gender concerns in community improvements in water, health and sanitation.

Part I focuses on building capacity at community level (first five outputs). Part II recognizes that communities require external resources (physical inputs e.g spare parts, skills e.g management, maintenance etc) which calls for building or strengthening of external resource delivery systems through district institutions (outputs 7,8,&9). The institutions are vital for sustainability of SWIP supported activities especially at the end of the project. The ninth output ensures that SWIP contributes to the development of national legislation and policies that will create an enabling environment for CM. The last output was in recognition of women as primary users of water and chief custodians of family health.

Turning to the water sector, SWIP is engaged in the provision of safe water facilities through:-

- o Drilling of new boreholes.
- o Replacement of UI with UII pumps and rehabilitation of existing dilapidated pumps.
- o Protection of springs.
- o Gravity flow systems.

There are plans to look into possibilities of expanding into other technologies like hand dug and augured wells as well as rain catchment.

The table below gives the current and future status of water facilities.

	Facilities Constructed		Population Served	
	June 1992	by 1995	June 1992	by 1995
Boreholes Drilled	1188	2000	356,400	600,000
Boreholes Replaced	247	287	74,100	86,100
Springs Protected	2712	4124	542,400	1,367,200
Gravity Schemes	4	29	20,000	145,000

2. IMPLEMENTATION STRATEGY

2.1 Overview.

In building CM capacities for health and water, SWIP uses a three pronged approach.

- o Building CM within user communities through social mobilisation and training.
- o Building and strengthening district institutions and infrastructures for efficient delivery of community external resources.
- o Assistance to creation of an enabling environment for CM through advocacy, development of policies and legislation at community, district and national levels.

This approach required well motivated, imaginative and relatively well qualified staff in districts. SWIP created a special category of staff called District Project Officers (DPOs), university graduates or equivalent, financed by the program, stationed and working in districts to FACILITATE the installation of the above capacities. This arose because:-

- o Social mobilisation and CM systems were new concepts for district staff and yet were the main program implementors.
- o Training of communities required highly "participatory" adult learning techniques which district staff had not been exposed to.
- o A contradiction arose between SWIP strategy and district staff set up. While it was desirable to have a well motivated, imaginative and relatively well qualified GOU staff at the last interface between govt and communities, the staff set up is such that as you move from district headquarters through counties, sub counties to parish (the lowest established post), the qualities above are decreasing!. Indeed a very good worker at parish level is usually promoted to head a sub county or a county!.

- o Some water systems promoted by SWIP (boreholes and gravity) were new district activities with no institutional set up.

2.2 District Level Strategy.

District authorities (executive and legislature) are mobilised for supportive attitudes to CM through their involvement in drawing up and review of quarterly workplans and reports, exchange visits, attending and bringing forth CM related issues for discussion at district committee and council meetings, official commissioning of water points etc. The mobilisation of this category leads to:-

- o Districts budgeting and disbursement of funds.
- o Acquiring powerful allies in community mobilisation.
- o Enactment of supportive CM legislation and policies.
- o Getting fast response to issues requiring decisions.

District GOU staff are enabled to improve their management capacity mainly through training, study tours, availing information materials etc. These are very important for sustainability of CM systems for efficient delivery of community external resources (organisational, skills to WSCs & CWs, spareparts etc.) especially after SWIP.

Institutional infrastructure for procurement, storage, supply and delivery of physical external inputs like spare parts, tools is established. This is done through provision of a district depot for sale of spare parts and tools to communities. A depot bank account is operated for replenishment of spare parts from WDD. An information system on prices and spares availability is also in place.

2.3 Community Level.

Within communities, SWIP supported activities are promoted through social mobilisation where supportive attitudes for CM and demand for services is created. The social mobilisation is done with the following in mind, that:-

- o Overall management responsibility rests with communities through their Water and Sanitation Committees (WSCs). Local Community Workers (CW) are selected, trained, and equipped by districts/SWIP following CM supportive procedures.
- o The role of districts or SWIP is to FACILITATE and SUPPORT by availing external resources like physical inputs and skills. This is done through a process that promotes community ownership and self reliance.
- o Once these capacities are built to a reasonable degree direct assistance ceases and communities are left on their own to evolve and grow.
- o All user communities are mobilised for health through a communication package of Basic Health Messages (BHM). WSCs and CWs are given communication skills to act as "change agents" and sustain BHMs among their respective users.

Springs protection and gravity flow schemes follow a step-by-step approach with very strong preconditions on sanitation promotion involving community base line surveys etc.

Borehole drilling, on the other hand, follows a different approach where a minimum pre-drilling social mobilisation package is prescribed because of its high speed, abrupt changes in plans due to weather or unanticipated "easy" geological formations and the high opportunity cost of keeping equipment and crews idle. A more intensive package follows after the drilling.

3. COMMUNITY ROLES IN WATER SYSTEM MANAGEMENT

User communities do not have a direct role in RWS system management this being the reserve of Water and Sanitation committees (WSC) which are established for every water source. It is the users, with assistance of district and SWIP staff, who select and determine "terms of reference" of WSC members. It is quite common for similar types of RWS to have different CM arrangements.

SWIP policy is one of "negotiated collaboration" with communities and districts. Preconditions are centered more on viability of sustainable maintenance, sanitation and health promotion rather than meeting fixed "cost sharing percentages" of installation costs. This promotes services to minorities especially poorer communities.

3.1 The roles of communities, districts and SWIP in CM are tabulated below.

Community Roles in Community Management

Water facility Type	Communities	Water and Sanitation Committee (WSC)	Community Workers (CW)	District/SWIP
Boreholes.	<ul style="list-style-type: none"> o Community Meetings - Roles in CM. o Selection of WSC and CWs o Raise funds - Training fees CWs - Spares parts - Bicycle maintenance - Repair labour costs o Labour - Clear access roads - Asst to drilling/pump - Installation crews & CWs o Site selection o Local materials 	<ul style="list-style-type: none"> o Resource Mobilisation - labour - funds - local materials o Supervision and payment of CWs o Org.sites selection o Monitoring o Change agents community health o Training - Management - Community financing - Operation o Follow up support to communities/CWs o Plan construction supervision 	<ul style="list-style-type: none"> o 3 week training for Pump Mechanics o 1 day training Caretakers o Change agent community health o Refresher training o Preventive and breakdown maintenance o Spares purchase 	<ul style="list-style-type: none"> o Water dev.plan o Hydrogeological investigations o Well/borehole design o Drilling o Pump testing o Water quality analysis o Hydrofracturing o Pump installation o Social Mobilisation o Training WSC and CWs o Follow up support o 2 set of bicycle & tools per subcounty. o 2 sets of spanners per borehole. o Provide spare parts o Operate spare parts
Springs.	<ul style="list-style-type: none"> o Mobilisation meetings o Participate Technical/Social feasibility study o Selection WSC & caretakers o Participate Community baseline survey o Participate community meeting to draw workplan for sanitation promotion and spring construction o Provide - labour - local materials o Participate construction of sanitary facilities & spring o Participate in spring maintenance 	<ul style="list-style-type: none"> o Resource mobilisation - labour - local materials o Organise tech/social feasibility study o Organise community baseline survey o Sign agreement with district o Follow up with community on san.promotion o Supervision of construction of sanitary facilities and spring o Supervise caretaker o Monitor sanitation promotion and spring maintenance 	<ul style="list-style-type: none"> o 1 day training caretakers o Change agent community health o Refresher training o Preventive and breakdown maintenance 	<ul style="list-style-type: none"> o Provide materials - cement - pipes - san plats o Provide technical assistance - san.promotion survey - construction of san.facilities and springs o Train caretaker and WSC o Water quality testing o follow up and support WSC and caretaker
Gravity flow scheme (gfs)	<ul style="list-style-type: none"> o Participate community mobilisation o Select WSCs o Participate preliminary survey o Participate community baseline o Selection of tapstand sites o Provide - funds - labour - local materials o Participate sanitation promotion and construction of gfs o Participate in maintenance 	<ul style="list-style-type: none"> o Resource mobilisation - labour - funds - local materials o Organise baseline surveys o Organise recruitment supervision and payments for - plumbers - masons - tapstand caretakers - scheme attendant o Organise selection of tapstand committees o Training - community financing - management o Monitor sanitation promotion and gfs maintenance 	<ul style="list-style-type: none"> o On job training for - plumbers - masons - scheme attendant o Construction and maintenance o Change agent for community health o Refresher training 	<ul style="list-style-type: none"> o Technical assistance - feasibility study - detail survey - community mobilisation - training - technical supervision - resource management o Provision of physical external in puts - pipes and fittings - taps - tanks - cement - tools

3.2 Annual surveys (3&4) have consistently shown that over 70% of water systems are functioning properly. Springs and gravity schemes once completed don't present major maintenance problems. The former are maintained by preventive means ie cleaning, slashing, unblocking etc by a trained caretaker whose "pay" is usually exemption from other weekly communal development work. The latter are maintained by a trained tapstand caretaker and a scheme attendant who checks on the intake works and the general line for leakages and trained to carry out plumbing and masonry work. A tap stand caretaker is "paid" as above but the scheme attendant is paid a cash allowance by the WSC.

Boreholes are maintained through two subcounty area based mechanics (PM), selected and training fees met by RC3s (see part5) which is the defacto "WSC". The PMs look after a maximum of thirty boreholes using toolkits and bicycles supplied by SWIP to each subcounty. Each borehole has a user WSC responsible for organising purchase of spare parts and a caretaker who is equipped with spanners to tighten external nuts, greasing and do general cleaning and other preventive maintenance activities. "Payment" is as other caretakers.

It is the management of the PM that presents a problem. Below are some of the arrangements (users pay for spares in all cases).

- (i) PM paid per repair by users. Bicycle and tools kept by PM.
- (ii) PM paid by RC3. Bicycle and tools kept by PM.
- (iii) As in (i) but bicycle and tools kept at RC3.
- (iv) As in (ii) but bicycle and tools kept at RC3.

The problem with (i) is that the WSC being ignorant of the level of service given by the PM, who enjoys a monopoly, end up being overcharged. Secondly the PM has no incentive to work on preventive maintenance and has an inherent interest in breakdown!. The bicycle being kept and used for other work by PM meant that the responsibility for its maintenance was PMs'. The advantage of this option, from SWIP point of view, was potential for privatisation.

Option (ii) was used in two districts following outcry by users on overcharging. District councils passed legislation fixing monthly allowances for PM to be paid from RC3 development fund on certification of work, whether preventive or breakdown carried out. The disadvantage was the appearance of a return to dependency on centralised arrangements. Suppose the fund is exhausted in the middle of a financial year?.

Option (iii) raises same issues as in (i) except that the responsibility for bicycle maintenance and replacement lies with RC3.

Option (iv) can be deduced from the first three options.

Of the four options SWIP still pursues the first one through introduction of a more VLOM pump, UIII, (Indian Mark 3), whose maintenance is "simpler" and can be handled by a pump caretaker using a simple and cheap tool kit. This gets rid of "area based" PMs in the short run but introduces other problems.

Like mentioned earlier (2.2) special spare parts and tools that are not available in the private sector are bought by WSCs, PMs or users from a district spares depot. SWIP is slowly influencing the development of the private sector in provision of pump spare parts (5).

4. LOCAL ORGANISATION OF COMMUNITY MANAGEMENT

A WSC is established for every water source. However due to the adhoc nature of WSCs, SWIP, as much as possible builds them into EXISTING community institutional arrangements because:-

- o Existing institutions have stood the test of time and experience and therefore demonstrated viability.
- o Committees expressly set up for projects tend to wither and die with end of projects.
- o Existing committees, if they choose, can frustrate or engage in unhealthy competition for status resulting in conflicts.

SWIP is also mindful of the negative influence of local politicians and dominant groups and their effect on participation of the poor and minorities.

Uganda has a unique grassroots, democratic "parliamentary" system called Resistance Councils (RC) which are formed at cell or village level (RC1) and work their way through a parish (RC2), subcounty (RC3), county (RC4), district (RC5) to national level (NRC). At village level or RC1 all residents are members of the council but day to day affairs are handled by an executive of nine members. The RC1 executives of a parish form the RC2 council and so on up to the district council or RC5. Of the nine executive members, there is a position for a woman member and this is institutionalised up to national level.

RCs are political committees and are charged with the general development of their area. They have statutory and judicial powers and can thus promulgate and enforce bye laws. GOU staff working in an RC area are ex-officio members.

SWIP therefore found a powerful ally in RCs for meeting its objectives. CM is done by WSCs which work hand in hand with RCs. The role of RCs is mobilisation, to assent, amend or reject proposals made by WSCs. This is important as the WSC have no legal powers of their own to levy fees, mobilise local labour and materials, promulgate legally binding rules and regulations or adjudicate conflicts pertaining to water use, access or land use (pollution).

Community meetings are organised to elect members of WSCs with a minimum recommended membership of five comprising a chairperson, treasurer, secretary and two committee members. WSCs for gravity

schemes are usually much bigger and have sub committees for every tapstand. Boreholes with subcounty area mechanics are managed by RC3 executives but a WSC is still formed for every borehole. It is very common for RCs to also serve on WSCs.

Members of WSCs are volunteers and SWIP advocates for at least two women members.

Once WSCs are instituted then all assistance is channeled through them. Working through RCs, and with assistance of districts and SWIP, they oversee:-

- o The overall planning, construction and maintenance.
- o Negotiate and sign agreements on behalf of user communities.
- o Organise delivery of preconditions prior to provision of water facilities eg. sanitation.
- o Organise raising, using an accountability of funds.
- o Receipt, storage and issue of external inputs eg. cement, pipes, fittings, tools etc.
- o Organise communities for selection of service points eg. tap stands and borehole sites etc.
- o Selection, meet training costs, supervision and payment of salaries for community workers eg. pump mechanics, plumbers, masons etc.
- o Organise local labour, access roads and materials during construction and later maintenance.
- o Purchase of spare parts and tools.
- o Organise for community health improvements and other development activities.

WSCs are usually very active during planning and construction phases but for some water systems like gravity and springs which require very little maintenance they tend to lose momentum. There have been cases of conflicts with RCs over boundaries of responsibility and with communities over financial accountability. SWIP countered the latter with introduction of training for WSCs in simple bookkeeping. This has led to transparency and improvement in relations.

5. THE ROLES OF WOMEN AND MEN IN MANAGING WATER SUPPLY SYSTEMS.

SWIP has met with little success in its advocacy for women involvement in the management and maintenance of RWS. Traditionally household water supply is the responsibility of female family members but have not been forthcoming despite deliberate creation of a gender sensitive environment during community mobilisation.

SWIP is in the process of introducing gender biased preconditions as a way of getting women involvement. Opponents cite the already heavy women work load. "If the men," the reasoning goes, "due to introduction of "modern" water systems, are for the first time attracted to contribute to the family water supply, then they should be encouraged as they are giving relief to women". The proponents argue that women should be on committees and influence decisions eg. location of facilities, allocation of resources etc.

SWIP does not prescribe specific duties and responsibilities for women serving on WSCs or users. However women are specifically targeted during sanitation campaigns and their views sought in planning and location of water facilities.

6. SKILLS DEVELOPMENT, TRAINING AND SUPPORT

The skills available in a community vary within and between communities and also on the type of water system installed. It is therefore very important to make an early skills assessment in order to plan for training.

SWIP training include a large component on health improvements with a mandatory Basic Health Messages (BHM) package for all recipients of a water supply. BHM are life saving information on "safe water chain" (safe water from point of delivery to ingestion), sanitation, hygiene, immunisation, AIDs etc. and delivered in such a way as to effect changes in attitudes and behavior.

In order to enhance sustainability, improve on coverage and get an in-built follow up and support system, all trainees above community level like WSCs, CWs, and community leaders are given training and communication skills so that they become trainers and change agents in their localities.

The table below shows skills development in SWIP.

SKILLS DEVELOPMENT IN SWIP

Skills	Target (Trainees)	Purpose
1. Construction, operation and Maintenance	1.1 WSC 1.2 CW - PM - Caretakers - Scheme attendants - Plumbers - Masons & Spring "fund"i 1.3 District staff	1.1 Overview enable supervision of CWs 1.2 Skills for construction and maintenance of water sources 1.3 Enable them train and follow up on CWs who "drop out" (sustainability)
2. Community financing	2.1 WSC 2.2 District staff 2.3 SWIP Project staff (DPOs)	2.1 Skills to plan, collect use and look after money. 2.2 " " to train and support WSC 2.3 " " " " District staff and WSC
3. Orientation to community based activities	3.1 District staff 3.2 SWIP staff (esp. DPOs)	3.1 Orient staff from "Govt. provider/promoter" to community management 3.2 Orient and give skills to support and train district staff
4. Planning by objectives	4.1 District staff and authorities 4.2 SWIP staff	4.1 Visualise and to produce a district framework for CW 4.2 Enable to train and support districts
5. Communication/mobilisation "Participatory training"	5.1 District staff (TOP) 5.2 SWIP staff	5.1 Skills to staff in highly "participatory" training methods. 5.2 Enable to train and support districts.
6. Water quality analysis	6.1 District staff 6.2 SWIP staff	6.1 Enable carry out tests on WWS 6.2 Support district staff
7. Sanitation and hygiene promotion	7.1 District staff 7.2 WSC	7.1 Enable them plan, implement and monitor promotion of sanitation 7.2 Plan and promote sanitation amongst user communities
8. Basic Health messages	8.1 District staff 8.2 WSC 8.3 CWs 8.4 Community leaders	8.1 Promote attitude and behavior change 8.2 Act as "change agents" in community 8.3 -do- 8.4 -do-

7. FINANCING AND FINANCIAL MANAGEMENT.

It has proved very difficult to come to a detailed cost of installing, operating and maintenance of water systems. This is largely due to problems associated with costing community inputs. In addition to cash, community contributions appear in various forms eg. voluntary labour, in-kind and are highly dependent on local resources and organisational levels.

There was an attempt to cost capital installation costs (6).

boreholes US\$ 7000

springs US\$ 1200

Gravity US\$ 24 per capita or US\$. 2500 to 3000 per Km.

A recent unpublished paper(7) in Luwero district found annual maintenance costs for a borehole in terms of spare parts to be approx. US\$ 5.

WSCs make proposals to RCs on ways and means of raising funds. The following has been tried and found to work:-

- o User fees usually paid by tax payers.
- o Connection fees charged for users who wish to get a private service (not common).
- o Fines
- o IGA
- o Grants paid by central govt. and local authorities.
- o Local activities Road tolls, tax on business, market tax
- o Fund raising door to door appeals, auctions
Appeals from individuals like politicians, successful "sons and daughters" of the community living and working in urban centers, organisations and development agencies.
- o Lotteries and raffles

The payment of pump mechanics who cover a subcounty is through a subcounty development fund. Spare parts are usually bought from levies on users either periodically for bulk purchase (especially for communities far from depots) or on breakdown. There are occasions when non community members are charged a fee for drawing water and members with animals being charged extra especially in the dry seasons. Caretakers are paid in kind through exemption from communal work.

SWIP has not experienced problems associated with maintenance affordability.

Installation costs for boreholes is almost exclusively borne by SWIP. 7 to 10% of gravity costs are met by users. SWIP input in springs is provision of cement, pipes and training of committees and caretakers.

8. LEGAL AND POLICY ISSUES

There is no act of parliament which stipulates that RWS has to be community managed. Likewise, as far as my reading goes, there is no explicit act which forbids the establishment of CM or leaves it as an exclusive domain of govt.

However the current political climate strongly supports community initiatives, participation and self reliance as evidenced from grass root political institutions -RCs.

GOU documents (6) calls upon WDD to "shift emphasis from that of Govt. as the provider to that of promoter" through a process that:-

"discourages govt. subsidies"

puts "emphasis on involvement of communities"

"target user participation in identification, construction, operation, and maintenance of sustainable systems."

The statute which established the RC system empowered them to pass bye laws in their areas of jurisdiction. SWIP has assisted WSCs in making proposals for debate and enactment by RC councils.

Some landmark legislation are:-

- o RC5 decision in one district to pay PMs from subcounty development fund.
- o RC5s decision to exempt all RWS caretakers from communal development work.

At local levels RC1,2&3 have passed legislation relating to:-

- o levy of fees and taxes.
- o Rules, regulations and punitive measures for defaulters.
- o legal status of WSCs.
- o Universal accessibility of water.
- o Land use, environment and pollution.

Despite local levels taking initiatives to enact local bye laws there is still a need to enact explicit national policies and legislation on:-

- o CM
- o Universal accessibility.
- o Pollution and environment.
- o Backup for maintenance beyond districts and communities eg procedures, cost sharing, privatisation, institutional set up etc.
- o Spare parts distribution national to district.

SWIP contribution to enactment of policy and legislation has been mainly advocacy through:-

- o Documentation of field experiences.
- o Writing and presenting position papers.
- o Organise field visits to "success story" areas for decision makers.
- o Presentation of issues to Inter Ministerial Steering Committee (IMSC). The IMSC is the policy making body for SWIP, RUWASA and WATSAN the largest (in area and population) RWS programs in the country.

Recently a paper (5) presented by SWIP on national procurement and distribution of spare parts is being used to formulate policy.

Another paper (8) looking into institutional infrastructures to handle backup maintenance beyond communities

and districts is in final stages of preparation.

9. MONITORING, EVALUATION AND INFORMATION

Organisationally SWIPs entry in the district is through a technical Project Implementation Committee (PIC) chaired by the DES with membership of heads of departments like DMO, DWO, DCDO, DHI, key district administration staff eg. district Treasurer, and some members of the DHC. NGOs supporting RWS projects are also members.

PIC is responsible for drawing up, quarterly workplans which are costed in terms of cash and physical inputs, review reports of the previous quarter and address implementation bottlenecks. The work plan apportions sources of inputs among the partners (district/SWIP). The workplans are the basis of SWIP monitoring system.

SWIP project officers and district management staff through supervisory field visits monitor progress.

Annual water surveys are conducted to check on the status of water systems. The surveys are conducted with several questionnaires to try and establish the following:-

- o Physical maintenance and construction workmanship.
- o CWs & WSCs eg. their performance, constraints, drop out rate, financial arrangements, user complaints on taste, yield, breakdowns (type, downtime), information system, BHM's (knowledge & communication to users) etc.
- o RC1 & RC3 eg. Pump mechanics performance, CM perception etc.

Major findings are:-

- o Over 80% of water systems are operational.
- o Downtime ranges 7 to 10 days.
- o Low level of women involvement.
- o CWs retained knowledge on BHM's but were not transmitting to communities.

SWIP also carries out mid term evaluations (last held in Nov. 1990) comprising of donors, govt and independent consultants usually drawn from universities and development establishments. Among the major recommendations were:-

- o emphasis on objectives orientation.
- o Transition from pilot to a long term development programme that includes sustainability, replicability, capacity building and donor phase-out objectives.

A baseline survey was done in 1988 to establish impact indicators mainly on health and a follow up survey is planned in 1993.

SWIP is very anxious to start working on community based monitoring. A pump mechanic log book is being established for use by WSCs in paying the PMs. It uses exercise books and contains social and technical information and is filled by the PM whenever a visit is made to a borehole site. Information filled is on when s/he was informed, repairs and spares replaced, assistance from community, catchment cleanliness, BHM's etc. Another area being explored is establishment of sentinel sites. This will assist program with "process documentation" on the happenings in the larger environment where water sources are constructed.

10. CONCLUSIONS AND LESSONS LEARNT

10.1 There is a tendency for donors, govts and project managers to measure or equate success of CM programs with production of quantifiable inputs- Nos of CWs, WSCs trained, Nos of facilities completed etc. These inputs are certainly very important but should be used with process and output indicators which are more indicative of progress to long term development goals. Building CM capacity is slow, time consuming and laborious. This must be recognised and accepted. "Pressure" on a program to produce inputs can derail it in meeting CM objectives. Monitoring and evaluations should likewise look into "processes" and "outcomes" in the larger environment around water facilities.

10.2 Building capacity for CM requires intersectoral collaboration between “technicians”- drillers, engineers, hydrogeologists etc. AND social workers. It is usual for technicians to want “to get on with it”. The social workers on the other hand work at the pace of communities and require communities to demonstrate their “readiness” through meeting some organisational and physical preconditions. Projects intending to develop CM systems need to take time and build TEAMWORK and to get ALL implementors focus on meeting overall project objectives in measuring success.

10.3 “Babying” of communities should be avoided. This takes the form of agencies overstaying in communities even after a reasonable CM capacity has been built. They respond to “baby cries” of WSCs and CWs with free provision of spares etc. In the process they create harmful dependency by failing to “wean” communities and letting them evolve and grow on their own.

10.4 Avoid prescriptive blue print approach to CM. A rapid assessment of CM in the pilot district of Luwero (9) found that communities had adopted innovative and ingenious CM systems which sometimes deviated from original designs.

10.5 CM is sometimes viewed as a cheap way of “offloading” financial burdens from donors & govts to communities. While SWIP has not carried out a comparative quantitative study, intuition indicates that building capacity for CM can be expensive. “CM should be promoted “as a desirable end product in itself and not as a means” (10). Sustainable CM systems built on basis of “volunteerism” for members of WSCs and CWs must assume a permanent reservoir of volunteers in user communities. Caution must be exercised as such “reservoirs” barely exist and few people can volunteer permanently.

10.6 CM for RWS requires external inputs- skills, spare parts etc. Trained members of WSCs and CWs can “drop out” due to illness, death, loss of interest, emigration etc. It is therefore very important for projects to look into development of support systems which will sustain CM at the end of projects. Support systems should be geared to development of the private sector say in case of provision of physical inputs like spare parts, or enablement of district staff to take over skills development. Possibilities of linkages with local training institutes for long term provision of community skills can be looked into.

10.7 There should be a concerted effort by CM programs to influence national policies, legislation and political will in order to build an enabling environment for CM. In budgetary allocations, RWS is viewed as belonging to the social service sector. Appropriate social research studies on communities with CM systems may reveal for example economic spin offs which could later be used in advocacy for more resource allocation to RWS.

10.8 Social capital generated in building CM can be utilised for community health improvements especially in promotion of sanitation and safe use of water.

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DISTRICT INSTITUTIONAL SETUP

Govt. Staff	Political	Approx. Pop.	Level
DES DMO,DWO, DCDO WFO, DHI	RC5 DHC	500,000	District
County Chief HI, Asst. CDO	RC4	100,000	County
Subcounty Chief HA, CDA	RC3	20,000	Subcounty
Parish Chief HO, PTW	RC2	2000	Parish
Nil	RC1	500	Cell

Explanatory Notes

DES	District Executive Secretary head of civil service.
DMO	District Medical Officer.
DWO	District Water Officer
DCDO	District Community Development Officer
WFO	Water Field Officer : in charge field supervision
DHI	District Health Inspector : in charge enviromental health
HI	county Health Inspector
Asst. CDO	county Community Development Officer
HA	subcounty Health Assistant
CDA	subcounty Community Development Assistants
HO	parish Health Orderly : currently few and untrained
PTW	Part Time Workers : assists CDAs in parish.
RC	Resistance Councils : 'local parliaments' at various levels
DHC	Disrict Health Committee : select committee of RC at various levels

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The role of communities in the management of improved water supply systems.

CASE STUDY

**Support Rural Water Supply Department Project
Dharam, Republic of Yemen**

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1. Background

The present Yemeni/Netherlands Support Rural Water Supply Department Project (SRWSD) Phase IV started in June 1991 and covers a period of three years. The Project started with Phase I in 1983, as a financial support to the Rural Water Supply Department (RWSD). RWSD provided the design and drawings, a local contractor, appointed by RWSD, constructed the water supply scheme and two expatriate experts of SRWSD supervised the works and provided the total funds. During Phase II, which started in 1985, this strategy was continued.

For the third phase, from 1988 through 1990 the strategy was partly changed. Not more than 50% of the project would be executed according to the strategy of the first two phases and at least 50% would be executed according to a new strategy of village participation. Also women involvement and health education were integrated in the Project. To achieve this the Project was divided into two parts. The part who was working according to the old method was called Rural Water Projects (RWP) and the new part, Integrated Water Projects (IWP).

For the IWP a number of Yemeni engineers and technicians from RWSD were attached to SRWSD and others were recruited by the Project. From the start of the third phase, the IWP appeared to be more successful than the RWP and it was decided to implement the RWP with the same method.

Phase IV is executed according to the RWP strategy developed during the third phase.

The Project is executed under the RWSD in the Ministry of Electricity and Water (MEW), in cooperation with the Local Councils for Cooperative Development (LCCD) and the beneficiary villages. Where possible, a cooperation with the Health Office Dhamar of the Ministry of Health will be maintained.

In general terms, SRWSD aims to:

1. Provide a sustainable water supply and sanitation infrastructure in those villages where a reliable water source is available, cooperation of the beneficiaries can be expected and preferable in the catchment area of a primary health care unit.
2. Participate in the process of women development in the rural areas.
3. Ensure the cooperation and active participation of the LCCD and the beneficiary villages in project preparation, implementation, operation and maintenance.
4. Promote the SRWSD approach of implementing projects within the RWSD.

2. Implementation strategy

The overall project cycle consists of following major steps:

1. listing of projects
2. feasibility study
3. design
4. implementation
5. operation

Step one and two are completed first, after which an implementation schedule is prepared for projects found feasible. Then, step three to five take place for each system in accordance with set priorities and available annual budgets.

A project may be cancelled during step two, when it proves not to be feasible or during step three, when either the water source or the contract cannot be secured. When during step four village contribution ceases and will not continue within one month after a warning, the project will be cancelled. When a project is cancelled, priority ranking and implementation schedules must be revised.

Step 1: Listing

Listing of potential water supply systems.

A list of possible water supply projects should be composed in collaboration with the RWSD for villages which have a water source available. The communities organize themselves and go with a request for a water supply scheme to RWSD. An additional list could be made of villages with a primary health care unit.

Step 2: Feasibility study

Surveys, community information, preliminary costing, feasibility and priority setting.

In step two no party commits itself to project implementation. It is only after proven feasibility that a project is eligible for implementation and even then commitment is pending the outcome of step three. It is of utmost importance to keep down the level of expectation with the potential beneficiaries at this stage of project preparation.

The surveys implemented in step two are:

- a. Technical survey:
 - feasibility of the water source and water source development;
 - accessibility of the project area;
 - routing of the pumping and distribution lines;
 - location of reservoir, etc..

This survey results in a preliminary design and a cost estimate. The preliminary design also shows which part of the potential supply area is to be covered by the system, based on cost considerations. Potential problems in securing the available water source must be signalled here.

Potential or existing environmental sanitation problems are also signalled at this stage and considered to be included in project implementation.

b. Socio economic survey:

- population size and their spreading over the potential supply area;
- socio economic and administrative structure;
- willingness of the beneficiaries to participate in and contribute to the preparation, implementation, operation, management and maintenance of the system.

c. Health and hygiene survey:

- present water situation;
- general health and hygiene situation in the future supply area;
- involving the primary health care worker(s) in the survey;
- willingness of the (female) population to participate in the education sessions.

Based on the results of these surveys the feasibility of the project is determined, founded on the following criteria:

- population must be in need for reliable drinking water;
- present population to be served by the system must be above 300;
- per capita cost for SRWSD should not exceed YER 1500;
- availability of water source;
- development and operating capability and ability and willingness to participate and contribute;
- project site should be accessible or made accessible for trucks;
- approval by the LCCD and MEW.

Upon completion of the feasibility studies, feasible projects can be listed and preliminary cost estimates totalled, to be compared with the available budget. With this list, a master plan of project implementation can be prepared, taking into account the available annual budget.

The master plan will be discussed with the RWSD Dhamar general director.

Step 3: Design

Detailed design and cost estimate, negotiation of commitments, preparation of contract.

Step three will confirm feasibility, finalize the design and prepare a contract with all involved parties including a representative of the village. This representative will be actively involved in project design and implementation. Upon completion of the design, a contract will be drafted to be signed by a number of villagers, the LCCD, RWSD, SRWSD, the Governor and also by the HOD in case there is a primary health care unit in the catchment area. The contract will relate the commitment of all parties towards the project and will subsequently specify:

- a. the time schedule for implementation;

- b. the contribution of the beneficiary community and of (S)RWSD towards the construction of the project;
- c. the health and hygiene education programme by the primary health care worker and other health staff, to be monitored by HOD and SRWSD.

If the agreement on the above contract fails, SRWSD may cancel the project, leading to rescheduling of priority ranking and revision of project implementation schedules.

Upon successful completion of above activities, tender procedures for pump units and works done by contractors can start.

Step 4: Construction

Construction, system operator training, training of primary health care workers, health and hygiene education.

During step four, construction will take place along the lines of the contracts negotiated in step three.

Before starting construction, the village has to supply the local materials (sand, gravel, stones) and if necessary construct a road to the building sites. Housing and storage capacity should be made available.

Construction activities are done by the community and in exceptional cases by a local contractor (elevated tanks or pump houses) under supervision of the SRWSD staff.

Only after completion of the construction the pump unit will be installed.

During construction, the beneficiaries are trained in maintenance. The future system operator receives a special training by the SRWSD staff and a general training in Sana'a by RWSD/WHO. Also in this step of the project, the WHR section starts with health education, where possible in cooperation with HOD.

If the village does not meet the requirements, the SRWSD will send a warning to the representative. If the situation does not change, one month later, the activities will be cancelled.

Step 5: Operation

Handing over, management, operation and maintenance, monitoring, evaluation, continuation of health and hygiene education.

Upon completion of the system (including testing) the project will be formally handed over to the village for operation. An official receiving form is signed by the village representatives, the LCCD, the governor, RWSD and if applicable by the HOD.

The system operator will be trained in system operation and maintenance and he will receive a set of pipe fitting tools. The village will be given advice on system management. SRWSD staff will visit the project one month after handing over, to

check for any problems or defects. The health education programme will continue. During the visit of the mechanical section after six months the WHR section will join them.

3. Community roles in water supply management

If a village is in need for a water supply scheme, they (with the cooperation of the LCCD) will go to the RWSD and request one. The RWSD will make a selection considering priorities as remoteness, the present water situation, urgency and politics. A list of possible projects is handed to SRWSD. SRWSD will test the source, make a design and install the scheme in cooperation with the beneficiaries. After completion, the scheme is handed over to the villagers and from then, they are responsible for operation and maintenance. The scheme operator receives training on this subject. For major repairs the operator will refer to the private sector. The total cost of the scheme is for 70% born by SRWSD and 30% by the local community. After completion, monitoring and evaluation is carried out on a regular base by SRWSD.

In the first two phases of the project the RWSD was responsible for the design, a local contractor for the implementation and SRWSD for the supervision and financing.

Since the third phase SRWSD is responsible for the design and a part of the implementation and financing. After the design is prepared, a contract is made in which the responsibilities of the parties involved are defined. During construction, the local community usually provides labour, transportation, local materials like sand, water, gravel and stones and food and housing for the resident technician. SRWSD provides the pipes, cement, reinforcement steel, pumps and engines.

During the implementation of the scheme, the women section of SRWSD is giving lectures on health education to the women and explaining to them how the scheme will work. They are also prepared to the fact that they will get piped water to their houses.

A recent survey on completed schemes is showing that the schemes are managed and maintained well and no big problems occur during operation. Minor repair are carried out by the operator and major repairs by private workshops. The spare parts are obtained from the dealers who supplied the pumping systems.

4. Local organization of community management

The country is divided into governorates, each governorate is divided into directorates. The government installed the only organization who is responsible for community development in this directorate: the Local Council for Cooperative Development (LCCD). The members are chosen every five years and they are usually people who are respected by the community.

The LCCD does not play a direct role in the implementation of SRWSD schemes.

After completion of the water scheme, a committee is formed to manage it. This committee is only operating for that particular scheme and is not part of a greater organization. All the management and control is handled locally. The managing organization of different schemes varies from village to village and women are not involved.

5. The roles of women and men in managing the water supply

A typical SRWSD water scheme consists of a water source, pumping unit, pumping line, reservoir, distribution network and house connections with water meters. The committee who is managing the scheme consists only of men due to the cultural background.

The women are relieved from their water fetching jobs and benefit highly from the scheme.

6. Skills development, training and support

To manage a scheme, an operator and a bookkeeper are needed. The operator is trained by SRWSD in operation and maintenance in cooperation with RWSD and WHO. The training program has been developed by RWSD and regular training sessions are given. The aim of this programme is to make the operator familiar with the different types of pumping units and some theoretical back ground. After this, SRWSD gives a more practical in field training. A bookkeeper is usually available in the village.

7. Financing and financial management

Installing a water supply scheme for an average village with 1000 inhabitants costs SRWSD about YER 1,500,000.= (1USD=12YER) which is 70% of the total cost, while the rest is paid by the beneficiaries.

All the house connections have water meters, to cover the cost of operation and maintenance the consumers pay between 15 and 20 YER per m³.

The new water scheme is usually cheaper than the old system of water collection, so the people are willing to pay. The income of the scheme is enough to cover the cost of fuel, oil, spare parts and salaries for the operators. When a major break down occurs, the managing committee will collect money directly from the beneficiaries.

8. Legal and policy issues

Up till now there is no government policy concerning community management, the communities own their water supply system and they may organize it the way they wish. They can develop their own policy and the local government organization will legalize it.

9. Monitoring, evaluation and information

The monitoring activities of the project are confined to a visit six months after completion by the women and mechanical section. Other monitoring visits are made according to requests of the villagers when problems occur and the problems are solved immediately or the villagers are referred to the private sector.

The managing committee usually keeps written records of the number of houses, water meters and readings, and monthly payments. They read the meters, write bills and collect the fees.

Experience from completed projects is collected and used to adjust the methods of implementation and management.

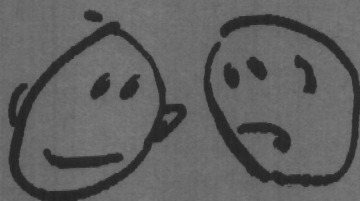
10. Conclusions and lessons learned

To make the project successful you need a mutual trust between the project and the beneficiaries. The beneficiaries must be able and willing to contribute in the scheme. The need for water plays an important role in the success of community management, also the fact that the community contributed in the implementation of the scheme makes the operation and maintenance even more successful.

A main constraint of the project is that the community contribution is delayed, which is delaying the scheme implementation plan. In order to overcome this constraint, communities should provide their contribution in advance.

IEC

Information, Education and Communication
in Water Supply and Sanitation



THE MISSING LINK

*Communication in the Water Supply and
Sanitation Sector*

Communication: Why?

Thomas and his five-year old daughter Sandra, in the village of Xumbi, Sierra Leone, know that they need water - to quench thirst, to cook food and to wash - and that they need to get rid of their daily excreta. They treasure life, and do not want to be sick. But they have no access to safe water and proper sanitation facilities.

Thomas has bilharzia and is anaemic. Dehydrated, Sandra is near death after a week of diarrhoea. Her prognosis is grim.

Mary and her seven-year-old son John, in a neighbouring village, had similar problems a year ago. Thanks to the visiting health team, they recovered. Then, with fanfare and little or no consultation with the community a well was dug and several latrines built, but these installations have not been used by most of the villagers, and the ills of Mary and John have returned. The chances for John to become a productive adult are slim.

This daily confrontation with debilitating diseases and death is unconscionable, when existing knowledge and technology has made such suffering unnecessary. It also leads inevitably to the loss of productivity that no community or nation can afford for economic growth and social progress, especially in the 1990s where most developing countries are undergoing structural adjustment programmes.

The sector has to go all out and use everything it's got to end such tragedies.

This paper argues that effective communication that entails two-way interaction between the sector and its various partners will make a critical difference. It recommends a communication strategy to enhance partnership and participation and to maximize efforts and resources.

New Challenges

Linked to water resources development, the environment movement and primary health care initiatives, the sector meets a basic need, and offers a natural and ready entry point for other aspects of development. But those concerned with the Water and Sanitation Decade's mission beyond 1990 realize that the seriousness of the current state of water and sanitation provision has not been presented persuasively enough to those who make key decisions. They know that resources allotted fall woefully short of what is needed and that new challenges demand more creative utilization of available resources. They also recognize that the effective use of improved water supplies and latrines must be based on participation and understanding.

A common thread running through these issues is the process of communication as an essential ingredient of all sector work. *Communication is an instrument for partnership and participation based on a two-way dialogue, where the senders and receivers of information interact on an equal footing leading to interchange and mutual discovery.*

Social mobilization: the success of immunization

"The public health success story of the last decade in which communication played the decisive role", that is how many people describe UNICEF's Universal Child Immunization social mobilization campaign. The goal was to bring vaccination to even the most remote area and motivate parents to bring their children for the full course of vaccines. In many countries large elements of society were engaged in the campaign: decision and policy makers, service providers, the media, the education system, religious leaders, other non-governmental partners.

The latest figures show that since 1977 for most diseases 82 percent of the people in the developing world have been immunized. For certain diseases that is more than in the United States!

UNICEF's Deputy Executive Director of Programmes, Mr. Richard Jolly, in a recent meeting of the Core group on Information, Education and Communication advised the water sector to learn from the successful UNICEF/WHO immunization campaign. He termed communication and social mobilization essential to successful action in programming.

New Delhi Statement

The need for enhanced communication was recognized at various regional meetings as well as at the New Delhi Global Consultation held during 1990, where field experiences and issues were analyzed to find ways to accelerate progress and enhance sustainability. The New Delhi Statement asked for "intensive efforts to raise awareness through communication and mobilization of all sections of society". Participants at these meetings specifically requested strengthening political commitment, optimizing the use of resources, decentralizing planning and implementation, and involving communities by intensive mobilization through sharply focused communication and education efforts at all levels of operation.

There is now general acceptance that most water and sanitation-related problems must be tackled by the people in the villages and urban slums, who must be properly empowered and equipped to take actions themselves. Field workers must communicate more effectively with women as well as men in order to involve communities in planning and management of their own facilities and to facilitate hygiene education. Technical support must respond to the real needs in the communities. Moreover, environmental and urbanization concerns pose new challenges, which require innovative participatory approaches.

Each of these issues requires effective communication as a solid base for action.

In several countries, such as Brazil, Ghana, India and Indonesia, initial steps are being taken to address these communication issues. In many others, individual efforts at different levels have been made through campaigns at the policy level and education programmes in the communities. In spite of their good intention and their value as first attempts, not all of these actions were truly effective; they were often isolated endeavours and worked like fireworks that have finite periods of illumination.

Collaborative Council Action

In order to take up the communication challenges of the 1990s, the Core Group on Information, Education and Communication (IEC), following the recommendations of the earlier Temporary Working Group on Communication of Information, reviewed communication issues at length in a series of meetings both before and after the New Delhi Consultation. These included sessions in which a large number of developing countries participated. Their deliberations have led to a call for a coherent, integrated and multidimensional communication strategy as an underlying thrust of all sector work, directed at mobilizing all societal elements and maximizing effectiveness of efforts.

The Water Supply and Sanitation Collaborative Council in its Oslo meeting in September 1991, reconfirmed the need for intensified action on communication/promotion activities at the global, national and local level. The Council delegated the mandate to decide on a strategy to a Working Group which will continue the work of a Core Group. It also expressed the need to establish an appropriate workforce and to raise resources to undertake specific activities.

Continuum of activities

The strategy calls for a continuum of communication activities. At one end are efforts that generate political will, change policy and mobilize resources. At the other are community dialogue and feedback to enhance community management, cost recovery and participatory hygiene education. In between, they include internalization of all available experience within the sector, fostering intersectoral support, and the use of monitoring and evaluation results for advocacy.

Decentralization is a guiding principle for the strategy. Every segment and sub-segment of audience is different, and each has its own order of priorities and economic, social and cultural perspective on water and sanitation. A decentralized approach to communication activities is better positioned to address the needs of the community and affords a closer aim at the problems.

The concept of dialogue and interpersonal communication should apply throughout the continuum. This is as important for advocacy work with legislators as for hygiene education efforts with villagers.

The involvement of the community - in issue identification, message design, dissemination, monitoring and impact evaluation - will provide the vital feedback needed. More important, such involvement will enhance a true sense of partnership in the effort, a critical ingredient for the strategy to become successful.

Each activity in the continuum can affect, and be affected by, the others; they should be mutually supportive, and their synergistic impact should lead to better results.

Communication Strategy in India

The Government of India is showing a good example of a communication strategy to help implement its ambitious water supply and sanitation programme in the country. Since the inception of National Drinking Water Mission for Rural Water Supply in India in 1986, communication has occupied the centre stage of planning as an important tool to achieve a broader and sustainable coverage with safe drinking water.

Building on communication the Indian government, with active support of UNICEF, has developed and adopted the strategy in support of community participation and management and hygiene education. Women were identified as the prime movers in the strategy.

Recently this strategy has been accepted by the Government of India for the next five years. Rather than a centralized approach, a decentralized development of skills is emphasized. Communication methodologies are being based on local conditions.

Audience Segmentation

Segmentation of audiences and their communication needs is essential for effective communication. Without understanding the differences among various segments or sub-segments, it is difficult to design productive messages that call for change.

While basic themes remain essentially the same, the fine-tuning of the message content, the choice of media mix, and the designing and packaging of the messages will vary. The variation will depend on audience and circumstances in each case.

The communication strategy should in the long run encompass all sections of society. But in the short term the priority target segments should be those who make and influence decisions: sector people, policy people and users.

The Sector People The sector includes all those who work in the water and sanitation field, from planners to field implementers in governments, voluntary agencies, and ESAs. By and large, the water and sanitation sector has not been very effective in communicating with the policy people, nor with the communities they serve. Many in the sector assume support from the top and participation from below as given, since the need for their work is so obvious. Yet it is they who, more than the others, must recognize the need for communication and apply it in their work.

In order to face the challenges ahead, sector people must first internalize the lessons of the Decade and make the necessary changes in their outlook. They should also improve their ability to communicate effectively with other levels and beyond the sector. Everyone in the sector can and should play a role in communication on an interpersonal basis. Hence, an intensive and persistent orientation and training effort is required.

Members of the Council and other leaders can be effective advocates for the sector at the highest policy level in their respective country or agency, and can help persuade others in the sector to accept communication as a key component in their work. Managers should be able to articulate, with data, the benefits of their projects more forcefully. Field workers must communicate with the communities they serve in order to provoke feedback and to bring about involvement and action. *If a critical mass of concern and interest is generated within the sector, communication will become a new and powerful thrust.*

The Policy People Those who make policy decisions and influence development priorities include political leaders, legislators, top civil servants, economic planners. Given finite resources, they are hard pressed from all sides to choose one sector over the others. Frequently, the most active, the loudest and most persuasive group gets the most attention in an increasingly competitive environment, and obtains a larger share of scarce resources.

The policy people also need to appreciate the importance of new challenges ahead, and the role of community management and decentralization, and should encourage such developments. To mobilize the policy people, it is important to have the data and information they need to discharge their respective responsibilities. They include data on why water and sanitation needs constitute:

- a) a politically viable priority with a broad base, supported electorally or otherwise,
- b) a sound investment in human development that is cost-effective and yields health and economic benefits, and
- c) a social imperative that can no longer be ignored.

Assigning the sector the necessary resources and obtaining the commitment to sustainability, require effective communication activities on a broad-scale and continuing basis. Included in this segment of audience are opinion makers and influential personages, and those in the mass media who help set the public agenda and those of politicians and public servants.

The Users The users are the people the sector is all about. Their circumstances - economic, social and cultural - must be first taken into account in designing any intervention.

Communication with communities is needed for situation analysis, identification of problems, mobilization and management of resources, and constant feedback.

Having wells and latrines located at the right places for convenient use and proper maintenance requires a process of communication and consultation that leads to decisions shared by the community about the planning, building and management of these facilities. If field workers do not know how to communicate effectively with the community, they cannot seek out the underlying causes that block community actions. Nor can they support villagers in learning about bacteria in polluted water and human excreta, so that they can make informed choices.

Community management represents involvement, which leads to sustainability. Since facilities are new to many communities, communication is needed to acquaint the people with their management. Cost recovery, too, may be a new element, and effective communication can help them understand the reasons for payment for services.

The Water Utilization Project in Ghana

Ghana provides an illustrative example of the difference communication can make at project level. Since 1973 the Ghana Water and Sewerage Corporation with the help of the Canadian International Development Agency (CIDA) has worked in the Upper Regions to make a significant improvement in the health and productive capacity of the residents there.

To improve on the limited results from the earlier phases the project added a massive water/health education programme in late 1985. The new programme combined adult educational strategies with radio learning groups in a mass training and village education drive. The programme concentrated its efforts on a few carefully chosen topics and messages.

An evaluation in June 1990 of the Water Utilization Project, well described in an attractive document (available at the Oslo Global Forum), pointed to some notable achievements:

- a high proportion of pumps were delivering safe water; compared to other projects the percentage was remarkably high;*
- the project had built a network of 5,000 Community Water Organizers (50 % women) at more than 2,500 pump sites;*
- the knowledge of the linkage between safe water and water-borne disease had increased and there was some evidence of health improvement;*
- a start had been made on effective inter-agency cooperation in water and health promotion activities.*

Effective sector work means: effective communication

Support for Action

The locus of action is predominantly at the country level, in the field, near the villages and in the slums of urban centres. All implementation efforts must focus on support for country-based action. This is a point that deserves reiteration.

In promoting and supporting the integrated communication approach, countries need to develop their own capacity at the local, provincial and national level. Orientation and training are therefore among the first steps of the communication strategy. To start if off, responsibility for initiating action needs to be assigned. Operational activities may be assumed by one of the more active and centrally located national units of the water and sanitation sector.

Governments as well as ESAs need to review their policies, reorient priorities, assign responsibilities, build capacities and set communication objectives. Evaluating existing programmes vis a vis the communication continuum should reveal the gaps pointing to activities that need to be undertaken.

At the global level, a variety of support activities are needed, such as advocacy and promotion, resource identification, compilation of successes and lessons for adaptation and replication, coordination of initiatives, technical support to the countries on communication

programme planning, information exchange, and training and orientation activities. Some central arrangement to provide supportive services is essential, especially during the initial stage.

These crucial communication inputs at various levels obviously require financial resources. It is justifiable to earmark a percentage of the sector's resources to activities at all levels in the communication continuum. Investing in the continuum pays off in improved results in many areas: it will strengthen political will, generate more resources, involve communities, promote community management and cost recovery, and ensure better maintenance of facilities. Effective communication will facilitate behavioral change at the grassroots level through hygiene education for proper usage of facilities. *Indeed, communication may make or break the movement toward water and sanitation for all.*

**Country action:
a simplified communication development
approach**

- » Briefing session with senior colleagues on potential of communication strategy
- » Promotion of communication as essential element of sector work, and working towards introduction of communication in sector policies
- » Review of communication needs and opportunities
- » Assignment of responsibility for implementation of communication strategy, including authority and budget
- » Prioritization of needed action
- » Discussion of forthcoming action in session with senior sector officers and ESAs
- » Orientation and training workshops
- » Design of specific communication inputs, based on operation research, in selected priority areas
- » Implementation

**Central support unit:
four scenarios**

In support of country actions, four scenarios for a service-oriented central unit are possible, each with their own budgetary implications. In sequence of decreasing effectiveness they are:

- » a separate unit with three full-time officers, operating from an office located at one of the agencies active in this area, with a budget provided by partners on a shared basis;
- » a decentralized unit, operating through full-time officers working from different organizations active in this area, with one of these as lead agency, and with a budget provided by partners on a shared basis;
- » responsibility assigned to one of the agencies active in this area, operating through part-time officers, with a budget provided by partners on a shared basis;
- » continuation of work through a working group with ad-hoc inputs, but with a budget provided by partners on a shared basis.

Alliance Building

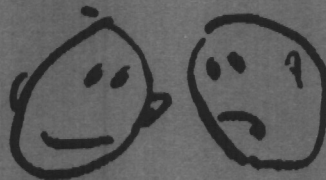
During the 1990s, when increasing demands on scarce human and financial resources will be made, the sector needs to strengthen its profile, explain its raison d'etre, and fight for its share of resources. Effective communication will be indispensable in this thrust.

To make the communication strategy work, alliance building at every level to win colleagues and allies for its introduction, is imperative. Water and sanitation is the concern of many sectors. Partners are essential, and the broader the alliance is, the better. Community and grassroots groups, religious and social institutions, media, non-governmental organizations and international agencies, must all be enlisted to back the communication strategy and support it.

The Decade has produced many useful technical instruments as well as lessons for the sector to move forward at an accelerated rate. They form a solid basis for programme success in closing the gap between the served and the un-served. The 1990s will make this possible, only if all technical and social components are fully integrated in all sector work, and if communication will be made the basis of this work.

IEC

Information, Education and Communication
in Water Supply and Sanitation



**Communication
Case Studies for
the Water Supply and
Sanitation Sector**

Draft

January 1992

Written and designed by Peter McIntyre
on behalf of the Core Group on IEC.
Funded by UNDP, UNICEF & IRC.

Sources from which this material was prepared:

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- The advice and support of Dick de Jong (IRC) is acknowledged.
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Introduction

These case studies in the water supply and sanitation and related fields have been written at the request of the Core Group on IEC. This group is working with a mandate from the Water Supply and Sanitation Collaborative Council, a global forum composed of sector professionals for developing countries, external support agencies and others instigating action in the water supply and sanitation sector.

The material forms part of the effort which aims to accelerate water supply and sanitation provision, building on the changing sector approaches which came out of the 1980s. Intensified communication and promotion in and beyond the sector is a key component in this changing process at a local, national and global level.

What we can learn from these studies is that effective action depends on changes in people, both those who make and influence decisions about development priorities and those at village level who make changes in their everyday lives. The cases show that these changes in attitude and behaviour can only be brought about on the basis of effective communication efforts. They are presented in the following order:

1. Campaign to eradicate guinea worm disease in Nigeria and Ghana

The success of the drive in these two countries is shown by a 30% drop in cases in a single year. The campaign was characterised by nationwide searches for cases, and by highlighting the socio-economic impact (eg. on rice production). This brought a reorientation of work in the water supply and sanitation sector, with dramatic results. Internationally the campaign was boosted by former President Jimmy Carter, who was able to open doors and talk to people at top level. Nationally it was characterised by personal communication efforts by the national leaderships. Communication impact at local, national and global level came together for maximum effect.

2. Rural sanitation in India

In India, millions spent on safe water and sanitation were not having sufficient impact on disease and child deaths. The Government of India invited UNICEF to tackle a communications exercise to find out what people really thought and did about water. This showed a huge gap between the sector and the people. Now in key areas the Department of Rural Development is allocating 10% of the sanitation programme to IEC. A fundamental change in the way the programme is planned and implemented is bringing beneficial changes in practices.

3. Diarrhoeal disease control

Knowledge and materials already exist to prevent dehydration and malnutrition in the wake of diarrhoeal disease, responsible for up to a quarter of child deaths in the developing world. The challenge is to communicate this to mothers at local level, and to doctors, nurses, health workers and providers of ORS. In many countries this challenge has been met. In Egypt 90% of doctors now prescribe ORS, and seven in ten mothers can correctly mix it - thanks to a two year communications campaign. In Swaziland the number of mothers who know how to feed their children after diarrhoea has trebled. Campaigns in Honduras and Nicaragua resulted in increased use of ORS.

4. Water and health in Northern Ghana

An 18-year programme to bring safe drinking water to rural areas was revolutionised by understanding the need for communication. At first boreholes were provided on geological criteria. Then education was attempted, without involving the main users and fetchers of water, the women. Finally a proper assessment was made of the communication challenge and clear messages were prepared and targeted. The outcome is an increase in knowledge, improved village pump maintenance, 5,000 trained community water organisers and safe water for 75% of the rural population.

5. Facts for Life in the Philippines

UNICEF, WHO and UNESCO prepared 'Facts for Life' messages to help parents prevent child deaths and disease. The challenge in the Philippines was to adapt the material to their culture, and to use it effectively. Communication was focused on key people at national, regional and provincial level leading to a mass campaign, using every conceivable method. The result was an effective mass distribution of material, adapted for local circumstances and built into the training of key workers in urban and rural areas. In one of the poorest provinces immunisation rates rose from 12% to 85%.

6. Rural sanitation in Lesotho

A pilot scheme to build 400 VIP latrines in southern Lesotho became a mass national campaign after people in rural areas became so convinced of the benefits that they were willing to pay a month's wages to buy one. Studies of local knowledge and beliefs were used to prepare to train 4,000 village health workers to promote latrine construction and use. The programme became more successful after printed messages were supplemented with personal contact. A study showed that children were healthier in the pilot project area. The World Bank technical adviser was able to withdraw early because the project was secure.

7. Improving agriculture in Mexico

A Rural Communication System in Mexico succeeded where earlier projects had failed, working with local people to improve drainage and production in tropical wetlands. The project used video and other methods to explore what peasant farmers and families wanted and how problems could be tackled. The World Bank calculated that the development project spent 1.18% of its budget on communication, but improved output by 7% more than expected. The World Bank assessed the project as one of the most successful it had supported and said it owed much of that success to the Rural Communication System. Child deaths in some villages were reduced to zero.

Interpreting real life is never easy. The link between cause and effect has to be weighed and estimated. When we see one good result in a programme we may question whether it was due to communication, luck or some other factor. Taking these cases together however leaves little room for doubt. Whenever communication was neglected the programme went awry; whenever communication was tackled it was put back on course. They also show that communication is more than just information or education. It is a two way process. The Voluntary Health Association of India, says: "Ask people about their problems. Elicit their opinions and views. Listen carefully to the answers. These answers are most important for helping you to decide what you want to communicate. Listening helps build trust. Listening helps you identify priorities."

1.1 Campaign to eradicate guinea worm disease in Nigeria and Ghana

ABOUT 10m people across the world are affected by guinea worm - a parasite which infects drinking water and can leave its hosts in pain, unable to work and open to infection.

Now the fight against guinea worm disease is at a critical point. The 44th World Health Assembly in 1991 unanimously agreed a resolution to eradicate the disease by the end of 1995.

In Nigerian and Ghana the campaign is beginning to show spectacular successes.

- ◆ In Nigeria and Ghana, the two countries with the highest incidence of guinea worm disease in the world, a campaign to eradicate it is having spectacular successes.
- ◆ Both countries reported a drop in incidence of over 30% in one year.
- ◆ In Nanumba District in Northern Ghana there was a 77% reduction.
- ◆ The results are testimony to a high profile global approach, political commitment at the highest level, a village drive to find cases, and a broad approach to prevention and cure. At every level a communication challenge has been met.

Guinea worm disease was for many years under-reported and neglected. Before the international campaign to eradicate it gained momentum barely one case in 20 was known, although guinea worm disease is a major cause of disability and the third biggest cause of tetanus.

The effect on the economy is also devastating. In Nigeria it is estimated that 50 million working days, in the cultivation of rice, cassava and yams, are lost each year, and that children miss 40 million days a year because of the disease.

The key messages which people need to know and act on if guinea worm is to be eradicated are:

- guinea worm comes from contaminated drinking water;
- infected individuals should not be allowed to bathe in or contaminate water sources used for drinking.
- guinea worm wounds should be cleaned and bandaged.
- drinking water should be filtered or boiled.

Messages have to be acted on at village level, but they need action at national and global level. The campaign needs money to repair wells and pumps, nylon to make filters, training for village health workers, and vehicles and equipment to spread the message. This requires cooperation between donors and government departments.

The major national efforts in Nigeria and Ghana which helped to lay the groundwork for a successful campaign were the village by village search for cases, to build up national pictures. In 1989 village drives identified more than 800,000 cases in the two countries, and showed where they were concentrated. Now village health workers make monthly reports on the number of cases, so that the campaign can be monitored nationally and internationally.

Campaign to eradicate guinea worm disease in Nigeria and Ghana - 2

Both Nigeria and Ghana reported a drop in incidence of over 30% between 1989 and 1990. In some areas it was even more spectacular. In Nanumba District in the Northern Region of Ghana where a water project with Japanese support installed more than 150 wells, there was a 77% reduction in the disease in a single year.

For the water industry this has been a challenge on several fronts. Water pumps and wells which had been broken or neglected needed to be repaired, and ways found of ensuring that they were maintained. Whole programmes had to be re-orientated so that villages with a high incidence of guinea worm disease became priority areas for the provision of wells and pumps.

Health education is being tackled on a wide front, through radio jingles, in schools and through village level meetings. In Ghana 10,000 T-shirts with guinea worm messages have been distributed and a survey has been launched to discover exactly what people understand about the disease.

In parts of Nigeria traditional leaders have toured infected villages and UNICEF is supporting workshops for religious leaders to enlist their support.

At national level the role of heads of State and Government ministers has been crucial in focusing attention. In Ghana the Head of State visited 21 endemic villages in the Northern Region soon after the national programme began. In Nigeria the Vice President unveiled commemorative stamps and ordered that local government areas allocate 10% of their health budgets to the campaign.

Sometimes the public gesture was even more direct. The State Commissioner of Health in Kwarea in Nigeria watched a guinea worm being extracted and then took the worm with him to show to the military governor of the state. The Governor immediately approved the money for a well.

President Jimmy Carter has been a leading figure internationally in helping to mobilise resources, sometimes able to open doors and gain a hearing when a lower profile approach would have failed. He has been able to act as an ambassador for the campaign, inviting heads of state and government ministers to view a video film outlining the problem and potential for eradication, before discussing what can be done.

The first formal review of the collaborative projects were held at the Carter Centre in Atlanta USA in July 1989. It stressed the need to focus on the endemic areas, and the need to repair wells and to encourage villagers to protect their water supplies from contamination.

Mobilising the community at village level, mobilising Government and local government departments at national level, and mobilising agencies and Governments at international level has set a unique communications challenge. From the figures now being reported, it seems that this challenge is being met. ■

2.1 Rural sanitation programme in India

IN 1991 India's Department of Rural Development allocated 10% of its rural sanitation programme to IEC.

The decision to give a high profile to communication was reached after the Government of India invited UNICEF to help bring about changes in attitude and behaviour amongst the people, water engineers and planners.

The Government had realised that efforts to provide safe water supplies and sanitation were not having the impact on mortality and morbidity rates they had hoped for.

- ◆ **10% of the Rural Sanitation Programme in India is now being spent on IEC projects.**
- ◆ **This puts \$US 1.9m each year into increasing awareness and understanding of water and sanitation issues at every level from state decision makers to rural villagers.**
- ◆ **The action was taken after a survey showed huge gaps in what the sector thought and ordinary people did.**
- ◆ **Fundamental changes in the practice by water engineers and planners are being brought about by this communication exercise.**
- ◆ **Villagers are ready to take on responsibility for maintaining their clean water supply.**

To bring about changes in attitude and behaviour UNICEF needed to know which target group they were trying to reach, what behaviour patterns needed changing and what messages would best bring about those changes.

These questions raised more fundamental ones. What do people already know, believe and do in terms of water use and hygiene?

At the Government's request UNICEF commissioned the Indian Market Research Bureau to carry out a survey of 7,900 people in eight states to find out the answers, using face to face interviews and direct observation. The market research company also talked to those who were implementing the water supply and sanitation programme.

Results were dramatic. On crucial issues there were huge gaps between what those implementing the programme believed, and what those using the water actually did. The survey also showed alarming gaps in people's knowledge about the link between polluted water and disease.

Four out of five people had access to a handpump in their villages. Those implementing the water programme believed that this would be the main source of drinking water for more than half the population. In fact, only a third of those surveyed used it as such. The survey showed a variety of reasons. Some said that the pumps were too far from their homes, compared to dug wells. In a country where family water collectors - usually women - spend two hours a day fetching water this is a powerful disincentive. Others said that it tasted salty, mineralised or medicinal, or that it looked rusty. They judged purity by how the water looked, smelled and tasted. In some cases this led them to choose polluted water from a dug well in preference to safe water from a handpump.

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in India - 2

A quarter believed that you could see 'germs' in impure water, and more than two thirds of women judged the water by whether they thought it 'cooked well'. Implementors had no idea that this was a factor.

A link between bad water and health problems was recognised, but most people thought that they were at risk of fever, colds, coughs and bad throats. Fewer than one in five understood the link between bad water and diarrhoea and cholera. About 13 per cent believed that bad water could cause malaria.

The survey had identified two important gaps in knowledge.

- Those implementing the programme had inaccurate information about how people used the water and what they thought about it.
- Most people were seriously misinformed about the real risks of polluted water.

There was a third gap. Implementors believed that people would not pay for the maintenance of handpumps, or contribute towards installation. In fact two-thirds of people said they would be prepared to pay towards maintenance. The survey showed that there was a possibility of the community becoming 'owners' of their water supply.

The survey was completed in 1989, when the Rural Water Supply and Sanitation Programme was already in full swing. Two years later an action plan drawn up by the Indian Government has put the lessons of the survey to work.

For decision makers there have been communication strategy development workshops in areas of 14 states - developed according to local needs. Where there is no TV or radio, village drives have been devised, with teams of people walking from village to village, bringing messages on safe water and hygiene through folk songs, ballets, puppet shows, street plays and slogans - all with materials developed locally by the teams.

The National Drinking Water Mission is field testing a communication package in selected districts. All states have now been asked by Central Government to set up communication and training cells in Departments of Public Health Engineering, supported by experts from the media and social sciences. In pilot projects, detailed plans have been drawn up for information, education and communication programmes at all levels of the decision structure, and at the grass roots. They include mass media campaigns, and a wide range of traditional and local media. The programme is putting trainers to make this possible into place at every level from state to district to village.

The India experience shows that a conscious decision to match a programme to the beliefs, knowledge and attitude of the people, results in a fundamental shift in planning and implementation. In the water and sanitation programmes in India, information, education and communication are no longer optional extras. They have become the guiding force of the programme. ■

3.1 Diarrhoeal disease control programmes

CHILDREN in poor areas of developing countries can expect between six and 16 bouts of diarrhoea in a single year - and millions of children across the world do not survive.

According to UNICEF figures diarrhoeal diseases are responsible for over 25% of all child deaths.

Most of these deaths can be prevented by good practice in the home and by parents understanding when to seek expert treatment.

In Egypt After 2-year campaign

- ◆ 90% of doctors prescribe ORS.
- ◆ Mothers' knowledge of signs of dehydration rose from 32% to 90%.
- ◆ Seven in ten mothers could mix ORS packets correctly .

In Swaziland After 8-month campaign

- ◆ The number of mothers who knew that children needed more special food after diarrhoea, virtually trebled to 44%.

In Honduras After year's campaign

- ◆ Use of ORS had been unused one year earlier. It rose to 48%.

In Nicaragua After 2-year campaign

- ◆ Use of ORS during diarrhoea episodes in children under six rose from 24% to 43%.

The key information for parents to act on if their baby develops diarrhoea is to continue to feed the child. For young babies breastfeeding is the best protection against the malnutrition and dehydration associated with diarrhoea. Parents need to know when and how to apply oral rehydration therapy - including how to mix salts and sugars, or to prepare pre-mixed packs of Oral Rehydration Salts (ORS). Parents must also learn to recognise when the life of a child is at risk and when help needs to be sought

Improving the communication skills of those who provide services - doctors, nurses, village health workers, midwives or traditional healers - is an essential part of improving case management at health centres and in the home. Communication efforts aimed at increasing the knowledge, skills and motivation of mothers can be achieved only when people at every stage of the programme are motivated and have the skills to pass on their knowledge.

Communication has a critical impact on the achievement of targets by:

- motivating health staff to practice effective case management
- improving the skills of health staff in educating mothers
- improving the prestige of health services
- motivating providers to distribute Oral Rehydration Salts
- motivating and educating mothers.

As our panel shows, the worldwide campaigns to control diarrhoeal disease have achieved notable successes where communication techniques have been introduced.

4.1 Water and health in Northern Ghana

ALMOST 20 years ago the water supply programme in Ghana backed by the Canadian International Development Agency (CIDA) launched the first concerted campaign to bring safe drinking water to rural areas. In eight years it sank 2,700 boreholes and installed handpumps in 1,000 communities.

At first it seemed this was a technical question of getting engineers to drill wells. It soon became clear that communication was as important as technology if changes were to last.

- ◆ Those who attended village education sessions had a 28% increase in knowledge.
- ◆ A survey showed evidence that health had improved where communication had taken place.
- ◆ Maintenance of pump sites improved by 50%.
- ◆ 100,000 people attended water education sessions in 2,000 communities.
- ◆ The project now has 5,000 Community Water Organisers, and 2,500 pump sites producing safe water.
- ◆ Changes for the better came about when communication targets were clarified and key messages identified.

The Water Utilization Project was launched in 1973 in the two Upper Regions of Ghana, bordering on Burkina Faso, where 1.2 million people live in scattered villages and water and sanitation related diseases are responsible for most illness and death in young children.

The first borehole sites were chosen from census figures based on geological criteria, with little consideration of social factors. It soon became apparent that although pumps were well used in the dry season, many women chose to use unprotected water closer to home in the rainy season.

Over the next 18 years, the programme went through a process of evolution and change. The importance of the role of women in making and sustaining change was only slowly understood. Gradually programme organisers realised that the way that knowledge was brought to a rural village; the way messages were devised and delivered; were crucial to the success of the programme, which has now brought safe water to an estimated 75% of the rural population.

As early as 1976 it was decided to add an educational component to the programme, training village education workers to increase understanding of health and water usage. By 1982 a community education programme had been launched in five districts. This campaign made some gains but there was doubt over how effectively messages were being given, and a recognition that too few women were involved.

In 1983 a comprehensive evaluation concluded that the programme was a qualified success. Each pump was used by 400 rural people, and health had improved, with a reduction in guinea worm and diarrhoea. However it also found that too little attention had been paid to selecting messages, developing effective material and building communication links with other rural programmes.

In 1985 Phase II of Project was launched, with priority given to water and health education and to training community based workers and pump caretakers.

Water and health in Northern Ghana - 2

Caretakers had been appointed because they had some technical skill. However the most successful pumps did not lend themselves to local maintenance. There were other roles for the caretakers, including collecting a pump tariff from users to cover maintenance costs. Many villagers felt that pumps should be free of charge, but project organizers believed that if people understood the link between clean water and good health, they would pay a levy.

In 1987, the caretaker post was combined with a newly created Community-based Worker to create a single focus for communication at village level. Water Education for Health (WEFH) trained the Community-based Workers to back up Government field-workers at district and sub-district level, and built close links with other agencies. A rapid increase in training was achieved covering 5,300 Community Water Organizers by 1990.

One decision was to narrow the range of the campaign so that the content of each message was clear and gave villagers achievable targets. This 'lean and clean' approach led Water Education for Health to concentrate on preventing dehydration in children suffering from diarrhoea. This led to a detailed study of the knowledge, attitudes and practices of mothers. Some local remedies such as breast feeding, herbal tea and sugar-salt solutions, were reinforced and oral rehydration salts were promoted, in the hope that effective remedies would naturally drive out ineffective ones (such as mashed cow dung).

Field workers were expected to 'unlearn' technically correct but impractical advice like always boiling water. The aim was "to avoid repeating the same tired messages imploring villagers to be clean and hygienic". Tools included radio, picture books, songs, and dramas. Cassette tapes were prepared by actors improvising dialogue in each of the local languages.

A pilot project in 1986 showed that those who had attended village education sessions had a 28% increase in knowledge. Later evaluation showed that maintenance of pump sites increased by up to 50% after training. During a mass campaign in 1989 approximately 100,000 people attended education sessions in 2,000 pump communities. By June 1990 the project had 5,000 Community Water Organizers at more than 2,500 pump sites. A high proportion of the pumps were delivering safe water. Knowledge of the link between water and disease had increased, and there was evidence that health had improved.

A study prepared for CIDA in 1990 concluded: "Social change does not automatically occur as a result of technical input like the installation of handpumps. Development efforts aimed at improving the quality of life cannot be divorced from appropriate education and a well thought out communications strategy. The experience does serve to emphasize the importance of education and communication in the development of water resources for the urban and rural poor." ■

5.1 Bringing Facts for Life to the Philippines

IN 1989 UNICEF, WHO and UNESCO launched Facts for Life - summing up the most important messages for child health, including birth spacing, immunisation, nutrition, sanitation and oral rehydration.

Bringing this together in a simple and effective way, was an achievement. The challenge was to communicate it so that the knowledge became part of every family and community.

The launch of Facts for Life coincided with a political commitment in the Philippines to put mother and child health issues near the top of the agenda.

- ◆ A crucial package of Facts for Life was translated into six languages after a personal approach to the President.
- ◆ Provincial Governors supported the campaign after seeing material with photos of Filipino children, and being told about the child health problems in their own provinces.
- ◆ Communicators spent days living in rural villages so that they could ensure the drawings and language they used would hit the mark.
- ◆ In one province immunisation rates rose from 12% - 85% after a massive campaign of information, education and communication.

The Philippines is a country expressing a wide variety of cultures and languages, and extremes of wealth and poverty. Rowena Guanzon, City Mayor of Cadiz, says that child health problems are the problems of poverty.

“A sense of urgency is what I would really want our people to have, because we seem to be running out of time trying to save children. It is very important that poor people know that they have an alternative. They have an alternative to getting sick, to dying of poverty. They have an alternative to ignorance.”

For Dr Pratima Kale, then UNICEF representative in the Philippines, the first task was to convince national leaders that Facts for Life could become their own. She said: “The challenge was not to let the Philippines feel that international agencies had prepared something and that it was their function to accept it. We would have to let them test it, and then accept it if they wanted.”

A task force set up to implement mother and child health initiatives invited agencies, including the Departments of Health, Agriculture and Social Welfare and the Education Information Agency, to review Facts for Life. Dr Kale recalls: “The medical profession challenged the technical components; communication experts came in to argue in favour of culture specific material. When we heard that in fact it had been accepted, that was about half the battle won. In each project we go through this process and there comes a time when we have gone over that hump and it becomes theirs, and that’s when it becomes very exciting and rewarding.”

Winning backing from key agencies was the first communications hurdle. Equally important was political support at the highest level. The task force decided on a direct approach to the President. Dr Kale said: “When President Aquino was there for a ceremony, I presented a set of material that we had prepared, and shared with her a copy of Facts for Life. She seemed very interested and asked us as to how that was to

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be brought to every Filipino mother and father, and what about the Tagalog version? The secretary of the Department of Agriculture was with us and then it became really exciting because he agreed to translate Facts for Life into Tagalog and five languages."

The Philippine Information Agency agreed to publish the material jointly with UNICEF. The Department of Health decided to distribute copies to every worker at regional, provincial, municipal and barangay level. The Department of Agriculture asked for 6,000 copies. At national level the programme was going well, but that was no guarantee that the message would reach grass roots. The next step was to enlist the support of regional and provincial representatives.

Dr Kale said: "Like everybody else Filipinos will respond to the information that 40,000 children die every day in the world, but they respond much more dramatically if you relate it to the Filipino situation. If you tell the governor what is happening, or not happening, in his or her province, and the mayor about how many children are immunised in his or her municipality, that appeals to people."

A communications network was set up to make sure that the messages were properly understood by those who were going to use them. Baniel Lacson, Governor of Negros province, said: "Mayors have to come in and see through the programme. Regular symposiums and workshops have to be established in order that they themselves become the articulator of the programme rather than those asking the questions."

In Negros this approach paid off. Immunisation rates rose from 12 per cent before the joint programme with UNICEF, to 85 per cent today.

Reaching parents effectively means a massive training programme of those who work most closely with mothers; midwives, traditional birth attendants, health volunteers, and teachers. Bituin Gonzales Programme Officer for Ifugao, said: "Very few people really read, even if it is translated into their own dialects. That is where visualising it with a story that brings out the message should come in; or bringing in famous cartoonists or artists. Another way is dramatisation through radio. This has to be done by experts who know local conditions, who have taken the effort to study what would be understandable."

Artists commissioned to produce comic strip stories with Facts for Life messages spent five days in the villages, following midwives on home visits and sitting through classes for mothers, learning to draw peasant women as they were - not in an idealised style. Ely Santiago, one of the artists who went back to the drawing board, said: "We have touched ground. We are communicating directly with rural mothers and families."

The support of political leaders; the training of key implementors; sensitivity to the culture of people who use the material - these are essential steps in the communication chain. Completing this process also takes resources, organisation and commitment. The Philippines experience shows however, that tackling the communication challenge at every level is essential if large scale changes are to be made. ■

6.1 Rural sanitation in Lesotho

IN RURAL areas of Lesotho only one family in five has a latrine, and children suffer from diseases associated with poor drinking water.

But across the country things are changing, most clearly in villages taking part in the National Rural Sanitation Programme. Here many people have their own ventilated improved pit latrines, most of them well maintained, clean and hygienic.

The latrines were bought and paid for by the families and were built by some of their fellow villagers.

- ◆ **Poor rural villagers have each invested \$US 75 - 150, a month's income, in having their own latrines built.**
- ◆ **People who recently had no latrine now beautify them with pictures, plants and carpets.**
- ◆ **The change came when people understood the role of sanitation in their family's health and welfare.**
- ◆ **A small pilot project was translated into a national programme - through a campaign of education and communication.**
- ◆ **4,000 rural health workers have become advocates for VIP latrines, built by villagers who earn their living from the project.**

In 1975 Lesotho invited donors to collaborate in integrating sanitation into a rural water supply project. The ventilated improved pit (VIP) latrine was arousing interest as an alternative on-site affordable technology. With a mesh filter to prevent flies from getting in, and a vent pipe to take away smells, the VIP latrine works efficiently when properly constructed.

In 1983 a three-year pilot scheme was launched by the Technical Advisory Group (TAG) in the southern district of Moleleke's Hoek, funded by UNDP, UNICEF and the Government, to win support amongst rural communities to build 400 VIP latrines.

It would have been possible for experts to build three latrines a week and meet the target. Instead TAG devoted the whole of the first year to building a team, finding the best way to build latrines locally and getting to know local communities. A series of planning workshops allowed local people to review the designs and building methods. Studies were conducted of local knowledge and beliefs and sanitation related messages were integrated into primary health education.

The Government contributed to the cost of organising and training, but not the production of latrines - to be met by families themselves. Local latrine builders (LLBs), would earn their income from making and selling latrines.

The 400 latrine target was easily surpassed - 600 were built in three years, and 90% of these latrines had been fully paid for by householders. Each latrine costs somewhere between US\$75 and \$150, about one month's wages. For families to invest this, they needed to be convinced that they would see significant improvements in their lives.

In 1986 Government decided to expand the project through the National Rural Sanitation Programme, backed by a number of donor organisations and by 1990 all ten

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districts had a project - with half the cost met by donors and a quarter each by Government and rural households.

Nationally the programme is handled by a core team supporting district sanitation teams. They win the support of communities through 4,000 village based health workers. District sanitation teams use home visits, community meetings and small group meetings to talk through the issues. Those who have volunteered to become LLBs promote the latrines while the village health workers handle community education and motivation.

The programme goes through five stages, each having key communication issues. They are preparation and education of the team, discussion with village leaders and village meetings, training LLBs and promoting latrines, a period for consolidation during which latrines are built, and a period of monitoring and evaluation.

At first health and hygiene messages were relatively ineffective because they were limited to printed material. As the programme expanded more personal contact was made - particularly with women, emphasising the advantages from making an investment in sanitation and hygiene.

The Theatre for Development acts out realistic stories about the link between sanitation and health. In one village a quarter of households who bought latrines did so after seeing a play.

A study in the first pilot area of Mohale's Hoek in 1988 found that children from families which had latrines suffered far fewer diarrhoeal illnesses than other children, were more healthy overall and were less likely to suffer from malnutrition.

In 1989 the UNDP-World Bank technical adviser was able to pull out ahead of schedule because the programme was so secure.

In many areas the health workers themselves have become latrine builders, seeing strongly the link between sanitation and health.

USAID estimates that 45% of rural households can afford to pay for a VIP latrine, 30% need credit to do so, and 25% cannot afford one without a subsidy. Women's groups are beginning to address this imbalance by exploring ways of organising credit for families.

A Water and Sanitation Discussion Paper published by UNDP- World Bank Water and Sanitation Program and PROWESS, concluded: "Great efforts have been made to increase the awareness of rural residents of the advantages of improved sanitation and to alter hygiene practices to maximise health benefits. The use of participatory education methods has allowed district health assistants and village health workers to reach the people, and changes in attitudes towards sanitation and hygiene behaviour are certainly apparent in those districts with well-established projects."

Communication and training persuaded households to bear the cost of latrine construction, demonstrating the value that rural villagers place on sanitation. ■

7.1 Rural communication in Mexican agricultural programme

FARMERS in the tropical wetlands of Mexico have tried for many years to increase their community income. Agriculture in much of Mexico developed, but they used traditional methods. To succeed land had to be drained and infrastructure improved.

Ambitious plans were launched in the 1960s in Tabasco to drain land, build roads and new villages. These projects concentrated on technology: people were marginalised. The result was resentment, opposition and the comparative failure of the ambitious and expensive Plan La Chontalpa.

- ◆ The World Bank estimated that PRODERITH spent less than 1.2% of its budget creating and running the communication system - yet results were 7% higher than expected.
- ◆ It named the project as one of the most successful the World Bank had supported.
- ◆ The Bank attributed much of this success to the Rural Communication System.
- ◆ In one year 6,600 village people watched videos produced by the local communication unit.
- ◆ Child deaths, which had been very high in one village, were eliminated after mothers asked for a meeting on water issues.

In the 1970s, when The Secretariat for Agriculture and Water Resources (SARH) looked to the tropical wetlands for an increase in agricultural output, they resolved that this time development would take into account the living and working conditions of rural families, and ensure their participation in planning, conducting and evaluating the results.

Three project areas were established in tropical wetlands, with the aim of increasing production, improving working and living conditions and preserving natural resources. The initial aim was to work with 3,500 farmers, many of them banded together into ejidos - a tenure system which gives individual user rights.

This initiative came to be known as the Programa de Desarrollo Rural Integrado del Tropico Humedo (PRODERITH). It was supported by a World Bank loan and by technical assistance from the Food and Agriculture Organisation (FAO).

The PRODERITH team set up a Rural Communication System to:

- Gain insights into the lives of the farmers, and build up a picture of local communities;
- Support education and training programmes;
- Support the flow of information between agencies connected to the programme.

This was tackled by letting peasant farmers talk on video and on tape, about what they hoped to achieve, and how they thought it could be done. In six years the Rural Communication System produced 452 videos, seen by 117,000 people. The World Bank calculated that PRODERITH had used only 1.18 per cent of its budget on creating and running the Communication System, but that improvements in production in the target areas were 7% higher than had been planned. It assessed the project as one of the most successful development projects that the Bank had supported. It attributed much of that success to the Rural Communication System.

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Mexican agricultural
programme - 2

After 1984 PRODERITH was expanded to nine project areas covering 1.2 million hectares, a period that coincided with a severe economic crisis in Mexico. The reduction in technical support forced changes, to give the community a larger role in communication. The team used communication to:

- exchange information between communities;
- create a consensus over strategy and aims;
- support training and non-formal education,
- make the flow of technical information easier,
- improve the reach and quality of technical messages;
- foster better coordination between sectors and agencies.

One fundamental aim was to strengthen the capacity for action and management by producer organisations, to ensure that they could secure fair prices for their crops.

In Pujal Coy in the Gulf of Mexico, near the Santa Clara and Tantoan rivers an intensive development zone was created, working with a union of 17 ejidos with a total of just under 1,000 agricultural producers. The area suffered from poverty, and top down development. In the Santa Marta community of 270 families 17 infants died in one summer from contaminated water and poor nutrition. Many drainage ditches were blocked, and the drinking water system did not function properly.

Organisers set up a rural communication unit at the town of Tamuin (RCUT). The aim was to provide training and equipment which would gradually give the communities themselves control of the communication strategy. A video editing unit was installed and playback equipment distributed to local ejidos. Solar powered loudspeaker systems were set up in villages. Training was 'learning by doing'. Recruits - a balanced number of men and women - made videos about water use, the upkeep of roads and drains as they trained. Courses in graphics, photography and radio production paid attention to the language and expressions of local people.

In one year more than 6,600 people watched videos that the unit had produced, while in Santa Marta child deaths from poor nutrition and polluted water were eliminated, after community meetings were organised. One healthy sign is that local communities are picking and choosing which material they use and when they use it.

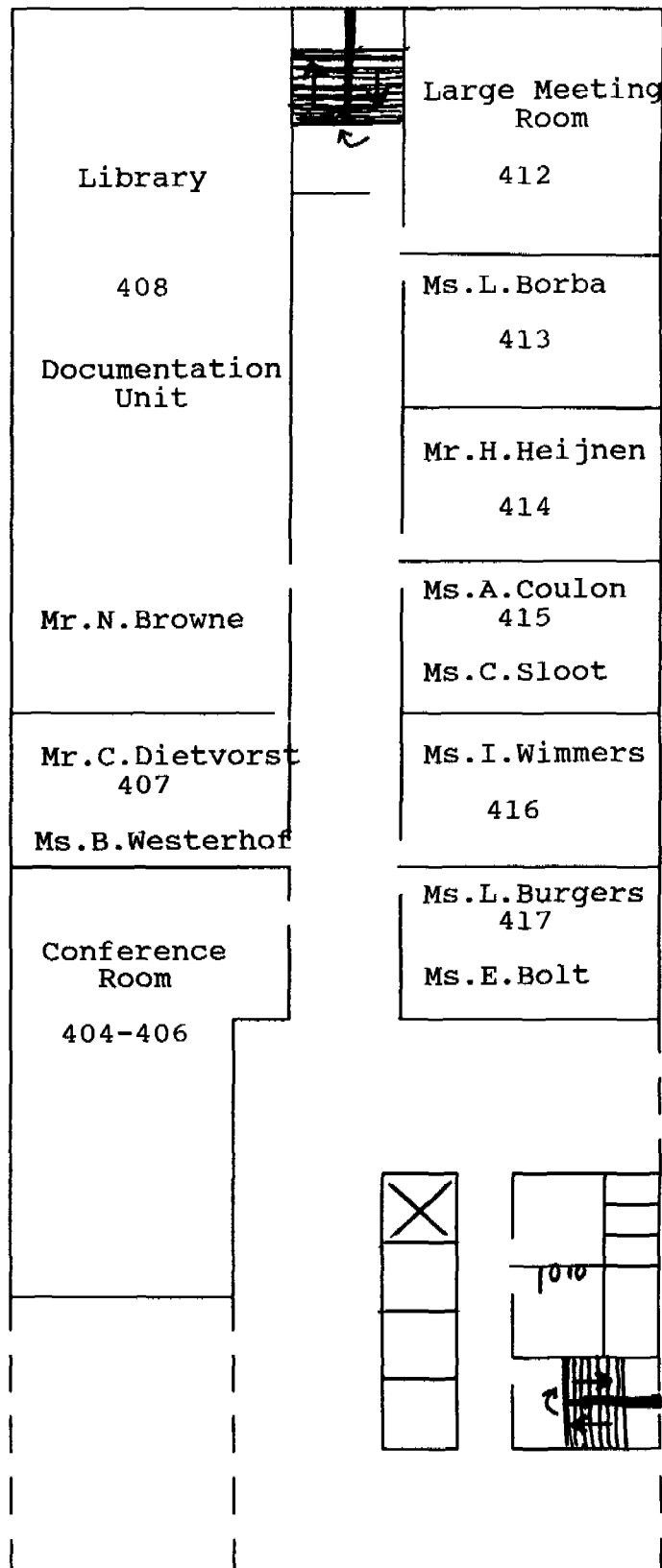
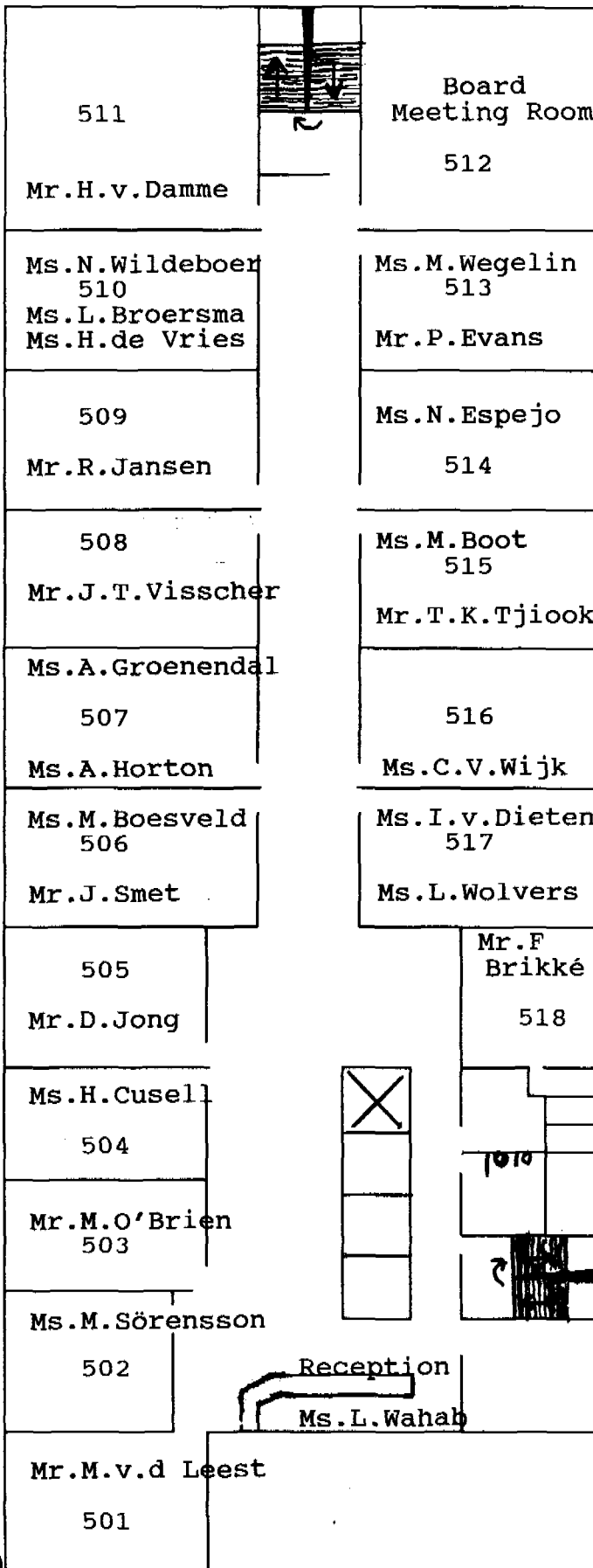
Young people coming forward for training need their confidence built up. A report on the project described one nervous young man after training. "Here he was, standing on a platform in a prosperous ejido's meeting room and addressing over 50 much older farmers with all the aplomb and composure of a veteran public speaker."

This new confidence is apparent in the water supply and sanitation sector. Fernando Villareal, director general of the National Water Commission (CNA), said: "We have taken on the responsibility not to begin anything which has not been previously discussed and accepted by the future beneficiaries. This means that we can have a more democratic development with increased participation by the rural communities." ■

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The Contribution of People's Participation to Rural Water Supply: Findings from 122 Projects

By

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**UNDP-World Bank Water Supply and Sanitation Program
INUWS, World Bank, Washington D.C.
November 1992**

Prepared for

**International Workshop on the Role of Communities in the Management of Improved
Water Supply Systems, November 4-10, 1992, IRC, The Hague, The Netherlands**

The paper represents the view of the author and should not be attributed to the World Bank, to its affiliated organizations, its Board of Executive Directors or the countries they represent.

INTRODUCTION

People's participation and women's involvement in decision making is increasingly viewed as critical in creation of water and sanitation services that are sustainable and effectively used. This is an integral part of the larger shift of institutional strategies, from supply to demand-driven approaches responsive to the felt needs and aspirations of users, especially the poor.

The Decade of the 80's established that service delivery through centralized technical 'master plans' for hundreds of scattered rural communities was ineffective. It was recognized that to create sustainable services at reasonable cost required understanding what people wanted, giving people options and creating a sense of ownership of assets among local people.

This fundamental shift from a technical 'masterplan' bias in which everything is known prior to implementation to one based on 'planning with people' and learning-by-doing resulted in increased tension between the planners, engineers and accountants on the one side and 'doers, sociologists and community types' on the other side. As "anecdotal" evidence of the power of people's participation accumulated, so did the tension and the myths.

The myths about participation are pervasive: participation is the most important factor to project success; participation is the same everywhere and everytime; the more participation the better; maximize participation; the higher the intensity of participation the better; participation should never end; participation is free; participation will happen by itself; participation is nebulous and not measurable.

This paper demystifies participation and examines the contribution of participation as a means to increased project effectiveness and enhanced capacity of local people and institutions in one sub-sector, rural water supply. It also examines the conditions and structures that support participation. It then highlights some conclusions and the major challenge facing the sector. The paper is based on preliminary findings from a study of 122 completed rural water supply projects from around the world. Further analysis and a more detailed report is currently under preparation.

STUDY METHODOLOGY

The International Water Supply and Sanitation Decade resulted in hundreds of projects and project evaluation reports. This rich experience has not been systematically studied to understand the participation issue within a broader context. Since participation is context specific and neither static nor unidimensional, in order to untangle relationships it was decided to focus on one sub-sector, rural water supply. A world wide search was made to locate evaluation documents of completed projects available with government agencies, NGOs,

reference centers and donor agencies. From a preliminary list of over 1000 documents, 400 evaluation reports from different projects were reviewed and 122 selected for inclusion in the study, based on the purpose of the project and quality of information.

The study includes projects from Asia, Latin America and Africa implemented in the late '70s through the '80s. The only criterion for inclusion was that the focus of the project had to be on physical implementation of rural water systems with or without any community participation. Technologies ranged from dug wells, to pipe systems (gravity and motorized). The average project cost over \$500,000.

A systematic case analyses method was developed based on a systems production model developed by Kurt Finsterbusch and Warren Van Wicklin (1987)¹. A detailed coding system for 145 variables was developed, pretested and finalized after coding 10 cases. Each report was independently coded by two coders, who met at intervals to compare codings and discuss any differences of more than two points. For most variables a seven point scale was used with one being low and seven being very high. Since the quantity and quality of information varied, each coder also scored the confidence level for their score. The statistical analyses (zero-order correlations) is based on the average score for the two coders.

Since the sample is not random and the quality of data variable, the findings need to be verified by further research. However taken together with the rich information available from individual projects, the findings establish some clear patterns.

PARTICIPATION AS A CONCEPT

Participation is a process by which people control or influence the decisions that affect them. For the purpose of this study, participation is considered to be an active process whose objectives are:

- (a) improving project effectiveness;
- (b) enhancing human capacity;
- (c) empowerment;
- (d) improving project efficiency; and
- (e) project cost-sharing (Samuel Paul, 1987)

Participation was measured in varying ways, intensity of participation, (being provided information, consultation, voice, having authority and control, initiating action) and involvement through different phases of the project cycle. Data were also coded for gender of participants.

¹ I am grateful to Kurt Finsterbush, Warren Van Wicklin and Elhum Haghigat for their assistance in the methodological aspects of the study, including coding and statistical analyses.

In order to understand the contribution of participation relative to other factors and factors affecting participation, a range of information was coded, including information about inputs, management, process, context and project structures. The rest of the paper highlights some key findings.

FACTORS ASSOCIATED WITH PROJECT EFFECTIVENESS

The relationship between 87 variables and overall project effectiveness was studied. Although many variables achieved significance, only those that achieved correlations above .65 (above the .001 level) are reported here. Not surprisingly, quality of staff or personnel both at the local water organization level and at the project level were important (Table 1).

It is difficult to avoid some overlap between management and process factors. Overall the management categories that were the most critical at the level of water organization (WO) were general quality of management, responsiveness to local users/members, clear and functional allocation of duties and effectiveness in obtaining and managing financial resources.

At the project level, overall quality of management appears to be the most important factor. Other factors that were very highly correlated were responsiveness to and use of client feedback, extent to which objectives, targets and outputs were clearly specified, consensus on goals, objectives, means and strategies and the extent to which participation was specifically made a goal, monitored and rewarded. These findings have important implications for the design of large scale rural water projects and management strategies when all is not known at the beginning of the project.

Of all categories of factors the largest number of significant factors were process variables which are closely related to management style. However it is worth looking at specific process factors to provide guidance on operationalizing a management style that is conducive to creating sustainable water systems in rural areas.

Project effectiveness was the most strongly related to attention paid throughout in planning and preparing for sustainability beyond the life of the project. The extent to which a project formulated and implemented a maintenance plan was also strongly related to overall effectiveness. Other factors highlight further the importance of adaptation to the environment, physical, human, social, political and cultural. Thus the other factors with high levels of correlation were extent of communication between project team and clients and the extent to which the project takes the context into account. The extent to which field agents are listened to and influence client behavior was strongly related to overall

Table 1 Factors Associated with Project Effectiveness

No.	Category	Description of Variable	Zero order Correlation
1.	Quality of Staff	Quality of personnel in local water organization (wo)	.82
		Problem solving capacity of personnel in local water organization	.80
		Skill & motivation of project staff	.67
2.	Management	Quality of management at water organization level	.85
		<u>Water organization level</u> Water organization responsiveness to local people	.86
		Water organization clear & functional allocation of duties	.78
		Water organization effectiveness in obtaining & managing finances	.66
	<u>Project Level</u>	Quality of Project Management	.86
		Responsiveness to feedback	.77
		Extent to which objectives and outputs clearly specified	.68
		Consensus on goals, objectives means, strategies	.76
		Extent to which participation was made goal and rewarded	.68
3.	Process	Attention paid to sustainability issues	.89
		Communication from project team to clients	.81
		Extent implemented a maintenance plan (handing over to communities)	.79
		Extent field agents are listened to an influence clients	.77
		Extent project takes context into account	.76
		Extent clients are organized for role in water organization	.66
4.	Overall Context	No correlation was above .65	
5.	Technology & facilities	Availability of spare parts and technicians	.79
		Adequacy of facilities and equipment for implementing project	.73
		Appropriateness of technology	.67
6.	Client Characteristics	Quality of leadership among clients	.68
		Clients have necessary skills for O & M	.74
7.	Participation	Overall participation of women in project	.76
		Overall participation of women in O & M	.73
		Overall participation of clients in project	.70
		Overall participation of clients in O & M	.61

effectiveness (although the ratio of field agents to population was less strongly correlated .36). The last factor which was very strongly associated was the degree to which clients were organized for their role in the water systems.

When the relationship of effectiveness was examined to the broader economic, political, cultural and social context, the social cultural and geographic/environment context appears more important than the overall political and economic context. However the conduciveness of the overall social and political context specifically to participation did appear to be of greater significance rather than the general political environment.

Of the many measures of intensity and forms of participation, overall participation of women strongly correlated to effectiveness, even more so than overall client participation. This was also reflected in stronger relationships between women's participation in operation and maintenance and effectiveness than overall client participation in operation and maintenance. Thus participation, especially women's participation is one of the key factors in achieving successful projects in rural water supply. One caution, while women's involvement may be critical in most contexts, this does not necessarily imply that direct and visible women's participation is essential in every cultural context.

Experiences from around the world suggests that community level activities are dependant of the presence of charismatic leaders and the quality of leadership among clients. Since the data were relatively poor on information at the community level, the roles of different types of leaders could not be tested in depth. However two client characteristics came up as very significant, quality of leadership among clients and the degree to which clients had or have acquired relevant operation and maintenance skills. The association between presence of strong leaders and project effectiveness was also significant but not as strong as leadership qualities more broadly among clients.

Other factors that were important were related to technology. Project effectiveness was not influenced by type of technology but by appropriateness of technology for the particular context and the availability of spare parts and technicians. The adequacy of project equipment and facilities for implementation were also important.

In summary it can be said, that project effectiveness in rural context depends on quality management (at the project level and the water organization level) characterized by flexibility, responsiveness to the public and clarity and consensus on objectives and strategies. At the water organization level especially for O & M clear allocation of duties and ability to manage finances are particularly important. At the project management level attention paid to sustainability issues including implementation of a maintenance plan are of primary importance in addition to putting in place means for communication with clients and rewarding staff for supporting participation.

Participation, especially women's participation is strongly correlated with project effectiveness. In fact a management style that enables participation of local people is very important. Other critical factors are availability of spare parts and technicians and adequacy of

facilities for project implementation, degree to which the local context is conducive to participation, degree to which local people are organized and leadership among project clients.

GENDER DIFFERENCES AND BENEFITS OF PARTICIPATION

Participation of local people is hypothesized to positively influence project design, implementation, maintenance, capacity building, empowerment, as well as result in cost sharing. However, it also results in additional costs incurred both by the agency and by the participants.

There are three significant findings from this data set. **Firstly**, that women's participation is more strongly associated with most benefits rather than overall client participation (Table 2). The difference is consistent though small, hence the pattern is of greater importance than the size of the difference. **Secondly**, participation is very strongly correlated with a series of benefits, including overall project effectiveness and overall water system effectiveness. **Thirdly**, the quality of data on costs is poor or non-existent in most projects. However, from the data it is clear that participation is significantly related to levels of cost recovery for O&M, and that participation results in higher costs to agencies and to participants.

The findings are clear. Higher levels of participation, especially women's participation results in more effective and efficient projects. Specifically it leads to better quality of project design, implementation, operation and maintenance, transition of O&M to local groups, maintenance after one year and reliability of water systems.

The greatest benefits of people's participation and women's participation in decision making however is in their empowerment, measured here in their increased self-help capacity, ability to organize, negotiate, undertake and initiate action. Participation also leads to increased capacity among local people to undertake specific water and sanitation tasks.

Participation is also significantly associated with higher levels of health benefits and greater equality of access to the water system among clients.

It is obvious from these findings that people's participation, especially women's participation is important in rural water supply to achieve sustainable water systems, health benefits and to create the self-help capacity needed to fuel development processes more broadly. As yet there is very little information on the costs of participation, to agencies and to communities. While the present study has some information, the data are not reported here, because the relative paucity of data warrant caution and further analyses to verify findings.

Table 2. Pearson Correlations of Overall Participation and Women's Participation with Benefits

No.	Category	Overall Participation	Women's Participation
1.	Project effectiveness	.70	.76
2.	Water system effectiveness	.70	.76
3.	Quality of project design	.66	.72
4.	Quality of project implementation	.69	.76
5.	Transition of system operation	.64	.71
6.	Quality of project O & M.	.60	.65
7.	Maintenance after one year	.52	.58
8.	Percentage of recurring costs users pay	.57	.46
9.	Reliability of water system	.53	.54
10.	Project efficiency	.51	.59
11.	Community empowerment	.82	.85
12.	Empowerment of women	.73	.88
13.	Increased client capacity for WS tasks	.81	.79
14.	Health benefits	.51	.57

FACTORS AFFECTING PARTICIPATION

There are many factors that support or inhibit participation (Table 3). Many of the factors are the same as those related to overall project effectiveness, which is not surprising given the high degree of correlation between participation and project effectiveness.

As can be expected a series of management and process variables, especially agency responsiveness to client feed back, adequacy of communication between project and clients and the extent that field agents are listened to are highly significant . Thus while the presence of field agents is critical, the ratio of field agent to clients seems less critical. Monitoring and evaluation of participation and rewarding staff for doing so is very highly correlated (.87) to levels of participation achieved. There was a strong negative correlation between the degree of agency dominance in decision making over the community and overall levels of participation.

The degree to which management encourages and supports the utilization of local knowledge is very important. This is also supported by findings of the greater importance of the broader social/cultural context rather than the economic or political context. Similarly the degree to which water system organizations are based on local collectives is also significant. It is interesting here to note that this variable is less significantly related to women's involvement (.46). The finding makes sense when one considers that most community level decision making bodies traditionally have excluded women. However many water projects include women's groups as well as 'encourage' or indeed dictate the inclusion of women on village councils or water committees/groups. Effective women's participation is significantly correlated to management support of women's involvement (.79).

Managers cannot be responsive and flexible if they have little autonomy to make decisions, if they have to follow blueprints or if they are pressured primarily to achieve physical targets. Thus both the degree of centralization of decision making within the project framework and the degree to which the project is physical target driven are negatively correlated to participation. The management challenge always is functioning effectively and with accountability in an environment when all the details of implementation are not known. In this environment clarity on objectives and consensus among staff, a 'common vision' is critical in moving forward in the same direction. Both these factors, specificity of objectives and consensus on objectives , strategies and means are important in this management environment.

In order to communicate with clients, there needs to be some institutional mechanism of outreach to do so. It appears that the presence of local community based organizations is the most effective in supporting local participation , followed by the presence of project extension workers, intermediary NGOs and local government units. It should be pointed out that a project can include more than one category and that the results report direct relationship of each factor to participation and not combinations of various modalities.

Table 3. Factors Affecting level of participation

No.	Category	Overall Participation
	<u>Management/Process</u>	<u>Zero Order Correlations</u>
1.	Extent of consensus on objectives, strategies.	.53
2.	Flexible framework vs blueprint	.53
3.	Extent objectives, outputs clearly specified	.53
4.	Degree of centralization	-.39
5.	Extent project is physical target driven	-.24
6.	Degree of agency dominance in management over community decision making	-.76
7.	Adequacy of communication between project team and clients	.71
8.	Agency responsive to client feedback	.80
9.	Extent field agents are listened to	.72
10.	Extent women's involvement is supported	.50
11.	Extent local knowledge is utilized	.75
12.	Extent organization is based on local collectives	.61
13.	Extent participation was made a goal, rewarded and monitored	.87
	<u>Institutional Mechanisms</u>	
14.	Community based organizations	.67
15.	Project extension workers	.59
16.	Intermediary NGOs	.50
17.	Local government units	.38
	<u>Client Characteristics & Organization</u>	
18.	Extent clients are organized for role in WS.	.83
19.	Quality of leadership among clients	.65
20.	Quality of female leadership among clients	.62
21.	Extent organization in based on traditional collective	.61
22.	Dependance on strong leaders among clients	.54
23.	Strength of demand for WS	.51
24.	Commitment of clients to project prior to implementation	.57
25.	Congruence with local culture, attitudes	.51

26.	Village income level	.16
27.	Average number of users per WS	.14
28.	Income level of client	.10
	<u>Project context and Technology Factors</u>	
29.	Complexity of project design	-.04
30.	Main type of water system produced	.03
31.	Number of different types of WS produced	-.01
32.	Support of host government	.20
33.	Size of project - number of staff	-.25
34.	Size of project - population reached	-.15
35.	Immediate political context	.05
36.	Immediate economic context	.02
37.	Immediate socio/cultural context	.32
38.	Geological/environmental context	.31
39.	Conduciveness of social, cultural, political context to participation	.67

Every community or group of people is distinctive. The data were studied to examine some client characteristics which influence levels of participation. The extent to which clients were organized in groups rather than working individually was significantly correlated to overall participation (.83). This should not be confused with individual vs. group ownership of facilities, because even projects that support household connections for water or sanitation may still be more effective if certain functions or interactions between people and agencies are carried out collectively in getting the process underway.

As with project effectiveness, levels of participation are dependant on presence of strong leaders, and more broad based leadership qualities among clients including women. It is strongly related to felt need or commitment of clients to the project prior to implementation. Another indicator supporting the importance of this finding is that strength of demand for the water system was also significantly correlated to overall participation. In other words people will participate in an activity if they perceive high benefits from their participation even if the costs to such participation are high, financially or socially.

Levels of participation were not related to village income, income level of client or to average number of users per water system.

Technology selection and giving communities and individual's choices in technology selection is important. It is also often thought that certain technologies are more conducive to eliciting participation than others. This study found no relationship between the type of technology or water system or the number of different types of water systems produced and the levels of participation engendered.

There was also little relationship between complexity of **project design** (number of activities and organizations to be coordinated). Compared to other factors, commitment of host government to project is important but not as critical as other factors. It is often thought that participation is easier to support in smaller projects than in large projects. When **project size** was measured by number of project staff and the total population reached, there were low negative correlations. Thus as the size of project grows it is more difficult to support participation, although it is not necessarily so.

In **summary**, it can be said that the following factors generally **do not** effect levels of participation: technology type, number of different types of technologies used, income of village, income of individuals, broader economic and political context, number of users per system and to a large extent size of project.

Factors that are positively related to levels of participation are: **management**, responsiveness to client feedback, listening to field agents, flexibility, decentralized control, dominance of community decision making over agency decision making, clarity and consensus on objectives and strategies, extensive use of local knowledge, congruence with social and cultural attitudes, conduciveness of social and political context to participation, basing local action on traditional collectives and community based organizations.

Participation also depends on **client characteristics**: the extent to which clients are organized, quality of broad based leadership among clients and among women, presence of strong leaders, demand and commitment prior to implementation.

CONCLUSION

Participation is not a static or unidimensional concept. It can be measured and monitored and their are clear factors that enhance or inhibit participation. In addition to overall quality of management, participation of people in decision making appears very important in creating effective rural supply projects that are sustainable, that continue to function after project completion and that build local self- help capacity. Women's involvement in decision making is particularly important in rural water supply projects.

The critical management factor is flexibility and responsiveness to user needs and preferences, through adoption of a learning process approach. A learning process approach is characterized by learning by doing, listening to field workers, offering options, not working with

blueprints, but having clear and specific objectives and strategies while adapting constantly to client feedback and the local context. This includes use of local knowledge and local community based organizations.

The lessons for the design of future projects are clear. The main challenge to be addressed is how can large scale projects be designed and implemented using a learning process approach so that optimal levels of participation appropriate in that particular context emerge, resulting in effective and sustainable rural water systems while at the same time empowering communities and their women.