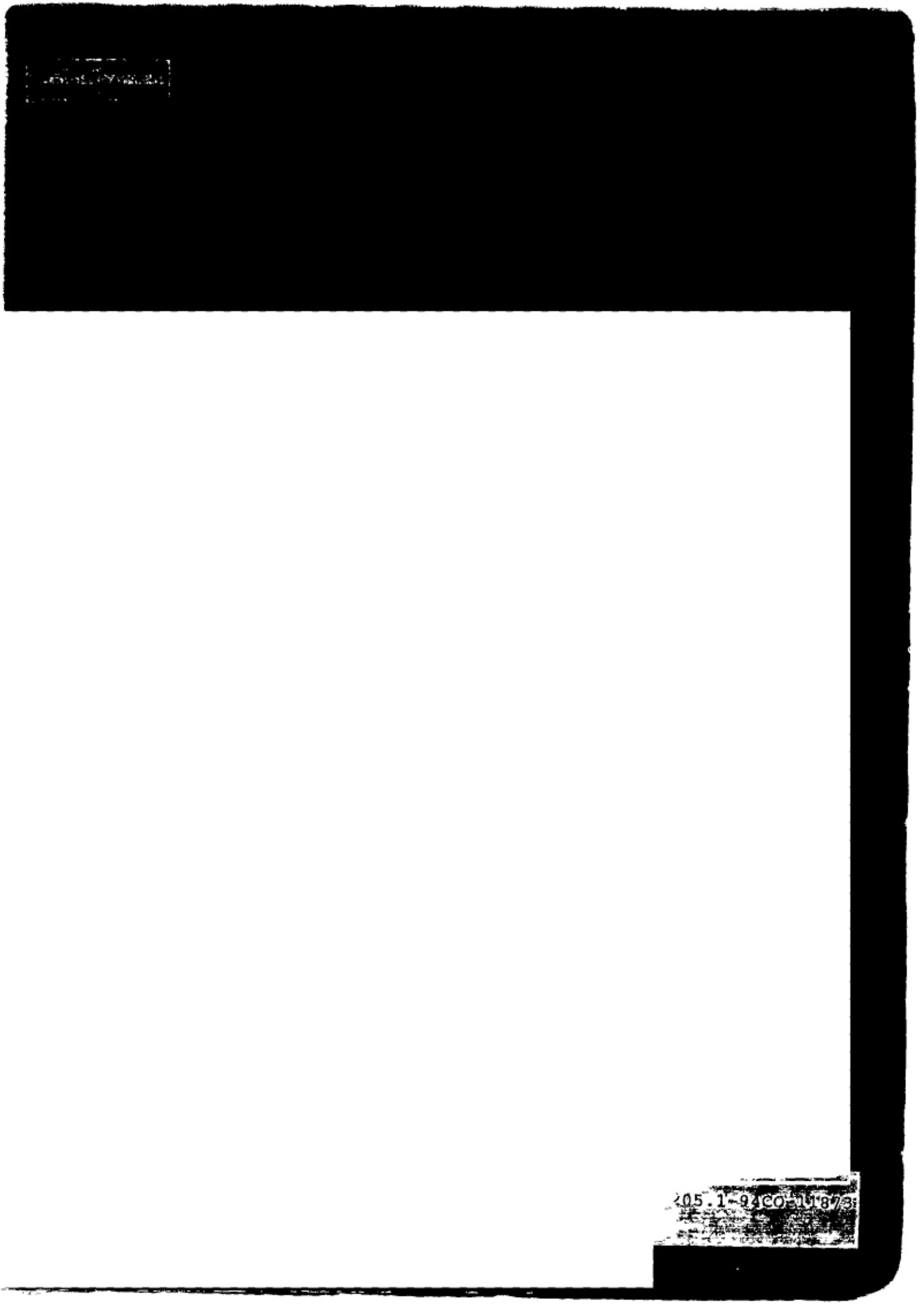

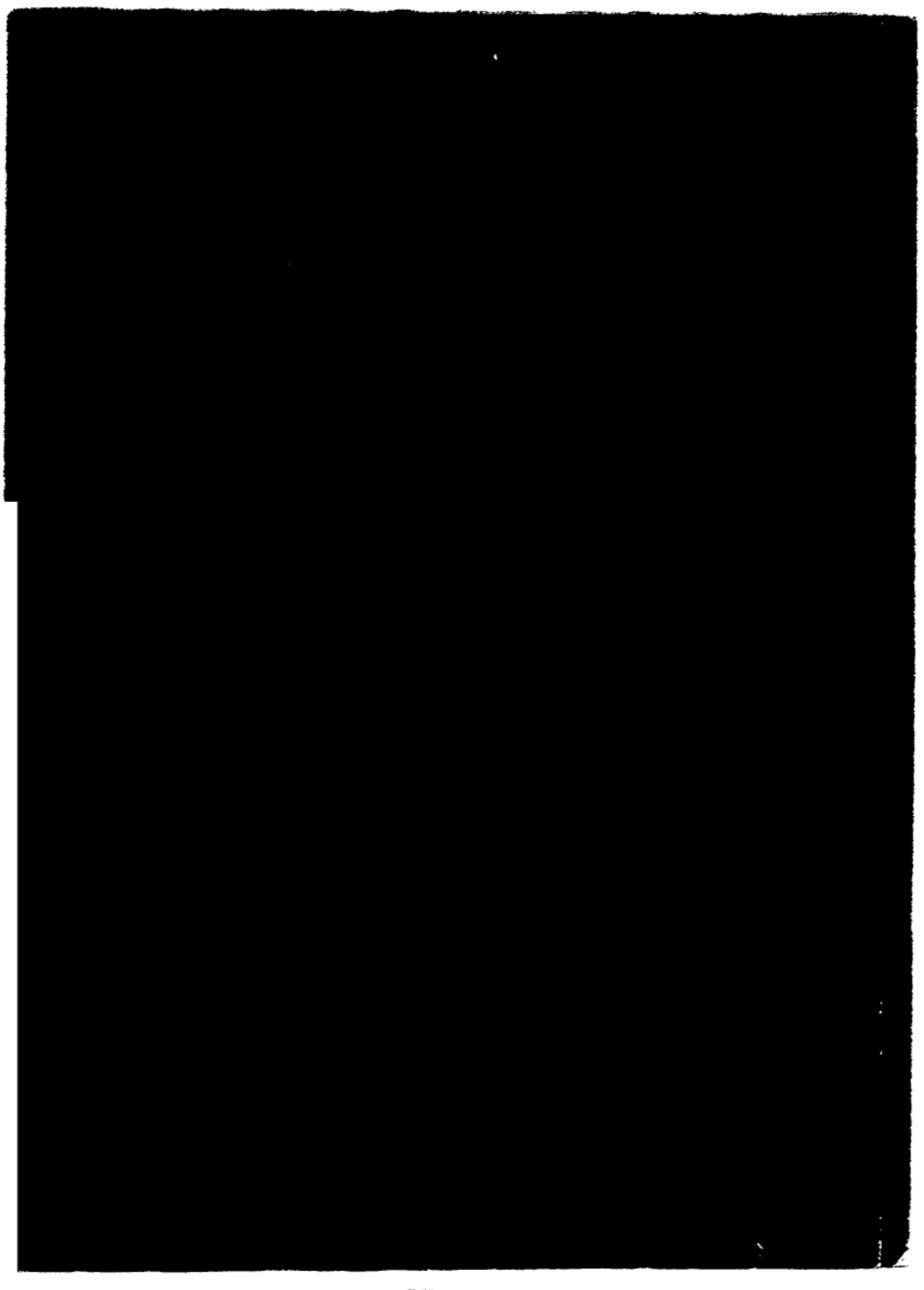

THE INTERNATIONAL
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Non-Governmental Organizations
in Interaction
toward Water Supply and Sanitation

LE SECRÉTARIAT
INTERNATIONAL
DE L'EAU
Les Organisations Non Gouvernementales
en interaction
pour l'eau et l'assainissement

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*DEL AGUA*
Las Organizaciones No Gobernamentales
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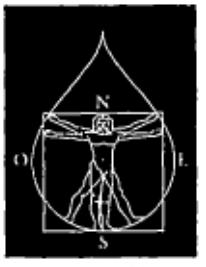

# COMMUNITY MANAGEMENT OF DRINKING WATER AND SANITATION

# A GUIDE FOR ACTION

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In collaboration with:

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No water
No fodder
No hope
No matter how painful
the pleading
in your silent eyes

Water,
sweet water that slakes the thirst
The glass
we order with such arrogant ease
is the temple
at which all those who thirst
do workship.

Poems by Amit Jayaram
in
Footprints in the Sand
(Tilonia, India)

Go to the people
Live among them
Learn from them
Love them
Start with what they know
Build on what they have:
But of the best leaders
When their task is accomplished
Their work is done
The people all remark
"We have done it ourself"

Tao To Loa Tzuching (700 B.C.)

## ACKNOWLEDGMENTS.

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The organizers of the International Workshop on Drinking Water and Sanitation for Grassroots Organizations wish to thank all the staff of the Social Work and Research Center in Tilonia for having welcomed and assisted participants with such dedication.

This guide and workshop could not have been prepared without the financial assistance of the Technical Cooperation for Developing Countries Unit of the UNDP.

We wish to express our gratitude to the participants of the workshop whose presence contributed directly to the successful outcome of this meeting, to the traditional folk musicians of Rajasthan, and to the women and children of the Tilonia area.

The guide has been written and revised by Gabriel Régallet, kindly reviewed by Bunker Roy and efficiently supported by Sophye Levesque in the text processing.

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## INTRODUCTION

This *Guide For Action* largely draws on lessons and experiences presented at the International Practitioners'-Hands-on Workshop on Drinking Water and Sanitation for Grassroots Organizations. It was organized by the Social Work and Research Center (SWRC) and supported by the International Secretariat for Water (Montreal) and Approtech Asia (Manila) in Tilonia, Rajasthan, India, November 21-25 1993.

The purpose of the workshop was to foster a learning and sharing process between community-based organizations on community involvement into decision-making on drinking water and sanitation, and approaches to manage internal delivery of drinking water and sanitation which can be replicated and scaled up on a regional basis. Eighteen participants were selected on a regional basis to represent a variety of experiences, knowledge and approaches. Two resource people from the International Resource Centre (The Hague) and the Foundation for International Training (Toronto) provided additional contributions.
The underpinnings of the *Guide For Action* come from both the Tilonia Workshop and the experience of the SWRC:

a) The basic requirement for community-based water and sanitation initiatives to work on the ground is trust. There should be an inherent belief put into practice at every level on every occasion that communities have a vast bank of knowledge, skills and practical wisdom that must be used first for their own development. This is the only approach that will eventually make communities sustainable and self-reliant.

b) Trust will slowly develop self-confidence and build self-respect. This intangible process of human development is evident in the field by the number of community thought-out solutions easily put into practice.

c) Communities (however illiterate but still educated) have taken collective decisions without official interference and influence. These decisions are more endurable, sustainable and more acceptable to the community in the long run.

d) The most sophisticated and complicated technological appliances can be demystified and made accessible for improving the quality of life of the poorest of the poor. The poor can survey, install, operate, repair and maintain equipment at a quarter the cost with no government or urban-based professional help.

e) Communities do not consider health, environment and development issues as separate and isolated. By adopting and practicing a simple life style, they have shown how to integrate issues that "experts" are unable to resolve even today.

# 1. Integrated Approaches To Drinking Water and Sanitation

## 1.1 Critical Factors of Integrated Approaches

Community-based approaches to drinking water and sanitation require an integrated approach to be sustainable in the long run. Lessons drawn from past experience repeatedly show the failure of project approaches poorly rooted in the community and/or focussing on some components.

Field experience presented at the International Practitioners Workshop of Tilonia suggests that community management of water supply and sanitation services entails far more than a mere redefinition of responsibilities: it must be rooted in local socio-economic, administrative and political realities.

Integrated approaches to water supply and sanitation must be framed along the following components:

a) *Linking* drinking water, sanitation, waste treatment and contamination prevention, health and hygiene promotion has been proved as the best strategy to sustain clean and safe water and the well-being of people in the long run.

b) Community *responsibility*, *authority* and *control over* the development of such services is a key ingredient of strong community management leading to sustainable water supply and sanitation services. (See section 2.4)

c) Community management requires an *enabling environment* including:

- a legal and institutional framework endorsed by the community facilitating the recognition of community organizations and of water rights, the self reliance of local organizations;

- involvement in local decision-making from the very beginning through a partnership between the community and the different levels of government based on respect, complementarity and accountability;

- time frame and cost recovery schemes supportive of long term operation and maintenance or expansion and replication after a system has been operational;

- allocation of resources to enhance community capacity to manage water and sanitation services as well as developmental change through training, education and organization. The location of training centres must be as close to the area of operation as possible;

d) Community-based approaches to water and sanitation call for the design and implementation of culturally appropriate systems in order that indigenous and local knowledge, practices and technologies available are utilized for better decision-making. Such systems will fully integrate community values, traditions and indigenous institutions, allowing the community to come together and organize itself for collective action and better bridging traditional and modern practices.

## 1.2 Legal and Institutional Framework

In recent years, more attention has been given to legal and regulatory issues. This is due to growing problems related to the need for preventing or reducing environmental contamination, lack of latrines and inadequate waste water and other waste treatment, water competing needs and water scarcity.

What could be the options for a legal and institutional framework enabling community management?

a) Integrated water resources planning at the national, regional, local level, involving local communities in the decision-making process from the very beginning. Such instruments are used in Vietnam through Provincial Master Plans on drinking water supply and sanitation. (See Box 1)

b) Recognized mechanisms for community involvement (See Section 2). This includes the contribution of intermediary organizations of civil society to enhance the sustainable and sound use of water resources by local communities and households. Decentralization of power to local governments is another key factor

fostering community involvement. In Poland, water and sanitation issues are now tackled by local self-governments known as "gmina". (See Box 2)

Box 1

**Master Plan on Rural Drinking Water Supply and Sanitation (up to year 2000)**

The Center for Agricultural Extension Volunteer (CAEV) strives to design and implement provincial master plans. They take account of natural and socio economic conditions relating to water supply and sanitation, in terms of assessment of existing facilities, household supply water quality, latrines, water born diseases. Then, the proposed master plan set- up objectives for the year 2000 and ways of implementation through technical approaches, estimated costs for designing and operating facilities. A key component directed by CAEV is to train extension agents capable of managing such facilities and to upgrade existing skills. The Master Plan is implemented through an agreement between government agencies, CAEV and local communities.

From: Bui Thi Sy, CAEV, Vietnam

c) Enhancement of the capacity of water agencies and users' associations to manage water systems and to control allocation and use waste water. Lessons drawn from experience in Morocco, Nepal, Philippines and India (See Box 3) show that water users' associations not only know best how to organize local people and communities and manage change but also have a better understanding of water needs and development options. In urban areas, these associations need to be better associated with waste water reclamation and re-use for non-potable purposes, because such re-use represents a great potential for other uses than human consumption and thus saves clean water. Part of water savings due to non-potable reclaimed water service may be directed to the benefit of poor communities within an arrangement between local water institutions, industries and water users' association.

d) Encouragement of user charges (See also 1.5). User charges are better accepted and implemented when local communities get the ownership of all change strategies, new procedures and other interventions on water along with water rights. From ownership come acceptance, commitment, willingness to pay which in turn lead to sustainability of water services.

e) Implementation of land and water reform and entitlement. Any strategy of sustainable use of water calls for a secure access to the land and water resources necessary for sustainable livelihoods. Water users' and other community organizations are critical to defend and strengthen communal and other property rights and systems of water management. This is important as a matter of equity

and to motivate people to use resources sustainably. In many countries, land tenure reforms are essential. Such reforms may include:

-long-term lease for occupying households;

-recognition of community organizations of owner-builders as representing people of the urban and peri-urban areas;

-communal resource management including communal property rights;

Box 2

**The Role Of Poland's Local Goverment in Water Supply and Sanitation**

The self-government in Poland is only three years old The real self-government was introduced in Poland by a legal act on 8 March 1990. According to this Act, gmina consists of all inhabitants living in a specific area and their territory. Community inhabitants elect their representatives on the Gmina (Borough/Municipality) council which in turn selects the municipality office to fulfill undertaken decisions. According to the Act, water supply and sanitation facilities are the task of gmina. All water supply and sanitation facilities owned by the government are now community property. Gmina fulfill the task with the help of committees created by inhabitants for specific investments. The support of local initiatives, training people from the community, consultation and advisory services are the main task of the Malopolska Institute for Self-Government and Local Administration.

In the context of this investment it can be seen that at least two things force people to be involved. First is the local authority attitude. They say: "We can't make people happy by force"-and because of the shortage of financial resources they avoid investment in the parts of the municipality where no social committee (sometimes called: local initiative) has been created in a bottom up way or if people do not show great involvement. The second important factor forcing people to be involved is money; usually, the municipality does not have enough financial resources and a lot of support is needed. Besides central government support (very restricted) all foundations have a tendency to give such support not to the local government but to the committees. Sometimes they require establishing joint companies for purposes of specific projects for inhabitants where every member (stock holder) is personally responsible for their money.

From: Zbigniew Ryzak Malopolska Institute for Self- Government, Poland

## 1.3 Water Management and Technology Choice

a) Local water systems evolved from interaction within the social structures and land use patterns, including questions of distribution, health, male-female, family relationships as much as it does the know-how, practices and technologies to make an efficient use of natural resources. Drinking water and sanitation systems need to build upon both local social structures and knowledge of the environment.

b) Local knowledge and know-how need to be fully integrated in devising water and sanitation systems, in combination with awareness-raising and education of community groups on the water problem. (See Box 4)

Box 3

**Community Water Users' Associations**

Community Water Users' Associations have been formed in many countries to ensure community management of water supply and sanitation services. Experience drawn from Nepal, Philippine, Morocco and India highlights some key roles assured by such community organizations:

a) Such associations participate to each stage of water and sanitation initiative: planning water source identification; flow measurement; site and technology selection for handpump, tap posts, etc ; provision of local materials; provision of semi-skilled and unskilled manpower; transportation; maintenance and operation; repair· fee collection; construction.

b) They negotiate and maintain relationships with external agencies (government, NGOs ..) to get financial and technical support and sustain water supply and sanitation in an enabling environment through agreements and other institutional arrangements.

c) They are instrumental to monitor and control water in the community. They devise equitable arrangements to allocate water between families and/or production units. They set up conflict resolution mechanisms within the community and help fix water rights.

d) They maintain the financial viability of the system by an agreed-upon charge structure, water fee collection, book keeping. Through such management, a progressive system of water distribution may compensate inequality within the community; they can sell the surplus water at a higher price and reinvest funds for watershed and other improvements.

e) Working within the community, they are in a better position to address and deal with related issues of water and sanitation: mortality and diseases; livehoods; protection of resources; hygiene education; training.

f) These associations provide the capacity to pool resources for management, operation and maintenance assuring a continuity of the water and sanitation system.

From: Prem Narayan Belbase (Nepal); Nolindo Cantos (Philippines); Driss Moumane (Morocco); Bunker Roy (India)

Box 4

## Sustainability of Water Systems in Mali and Burkina Faso

Field observations in our water supply projects in Mali and Burkina Faso raised a number of problems and questions. Why are some of the pumps not used at full capacity or out of order? Why are some of the water committees inactive, whereas others are unrepresentative of their communities? Why are there instances in which the villages find it hard to pay the charges? Why does the community sometimes appear to take little interest in the project's aims? Why are the women not very visible?

There are socio-cultural as well as physical-environmental reasons that explain the above. The ad hoc committees function badly probably because they were not formed according to the traditionally-recognized system of representation. The villagers have trouble understanding the new techniques, since pumps are perceived as extraneous to the village water system. In fact, they are often considered an emergency device, which may be abandoned when the emergency is over. With an improvement in the total rainfall and the resulting recharging of traditional sources, the population tends to return to the old ways. Importantly, the women of our communities, traditionally responsible for providing water, are too often excluded from decision-making and from the benefits ensuing from the new technologies.

A number of operative remedies should thus be adopted in a rural water supply programs based in an area with strong traditional water-related customs:

- the functional structures devised by outside expatriate experts (e.g. water committees and maintenance technicians) should be integrated with the village structures;
- the new resource should be integrated with the water system on which the community is based;
- the new standards (for management and behaviour), know-how and skills should be integrated with those already possessed and used by the locals.

We recommend that, in conformity with the group and gender differences and with the hierarchical and social order, the community receive the information and training needed to re-establish (or establish) a positive relationship with all the water resources. Whenever possible indigenous cultural channels for the transfer of the know-how should be used.

With specific regard to aid programs in rural water supply we recommend:

- to shift the attention from the borehole to the local water system that is, in turn, part of a wider system (relationships among villages in a homogeneous area, relationships with national institutions and laws, etc.);
- to set up local water resources management committee that, with appropriate support, can plan all the needed interventions;
- to give recognition to the village water supply methods, skills, technologies, practices and means of production that deserve to be protected and supported,
- to give recognition to women as a social group, with intrinsic needs and functions that deserve to be protected and supported for instance by guaranteeing that women have access to the socio-economic benefits of the aid programs, such as training in the use of new technology.

From: Lompo Justin (Burkina Faso) - Abdel Kader Sanogo (Mali)

Thus sustainable water and sanitation systems will harness proven indigenous know-how with useful contemporary knowledge in order to effect a culturally and socially appropriate system. It will be:

-intra and inter-community cooperative,
-family reinforcing,
-bonding of young and old,
-self-scheduled and administered,
-holistically integrated,
-local and renewable resource reliant,
-ecologically sound,
-locally scaled,
-indigenous skill and employment sensitive and
-self-sustaining

c) The decision about the technology chosen will be based on :

(i) the skills and resources needed for operation and maintenance and available in the community;

(ii) the desired service level the community is willing to pay for, will benefit from, and has the capacity to sustain;

(iii) the reliability of the technology.

Choice may have to be made between surface water and groundwater as the principal source (sometimes supplemented with rainwater) and then from handpumps, public standpipes, or yardtaps, as the method of distributing the water to the people. Costs and benefits will both be linked to the number of water points provided, with improved convenience of water collection ranking high in the users' evaluation of potential benefits.

Groundwater has many advantages over surface water as a source for water and sanitation improvements, the main one being that, provided wells are judiciously sited in relation to existing or future latrines, safe water should generally be assured without the need for treatment. The resource demands of water treatment plants needed to make supplies from surface water sources safe to drink are beyond the reach of most communities, and use of untreated surface water frequently represents an unacceptable health risk.

In a case where an upland catchment can be protected against contamination, a gravity-fed system can be reliable and safe, but only a small percentage of the population in need of improved supplies live in such areas. It will therefore be rare for community water and sanitation programs to be based on surface water as the source.

Assuming that equal system reliability can be achieved, the four main technology options --traditional water collection and delivery, handpumps, standpipes, and yardtaps-- represent progressively increasing service levels, and call for increasing financial and technical resources for their implementation and maintenance. The choice of appropriate technology for a particular project or program can only be made when resource constraints have been taken into account, including the capability of the users to operate and maintain the alternative systems under consideration.

## 1.4 From Planning to Maintenance of Water and Sanitation System

The UNDP / World Bank Project for the Laboratory, Field Testing, Technological Development of Community Water Supply Handpumps (1987) suggested guidelines for the planning and implementation of Community water supply projects using wells equiped with handpumps. They include six critical elements for a successful implementation:

a) Community Involvement (See section 2)

b) Aquifer analysis: competing demands for other water uses, such as irrigation pumping, have to be taken into account when evaluating aquifer potential for handpump projects.

c) Wells design and construction

d) Handpump selection: in addition to the cost, the most important factors influencing this selection are suitability for the intended maintenance system, durability, discharge rate, standardization on one or a few pump types and corrosion resistance when grounwater is aggressive.

e) Community management of maintenance: maintenance difficulties often arise more from institutional or financial shortcomings than from technical problems with the pumps themselves (See Box 5)

f) Financial management (See 1.5 below)

Box 5

**Handpump to the Mistry**

In an effort to demystify this handpump technology of repair and maintenance of sophisticated India Mark II handpumps, the villagers in Rajasthan gave birth to the idea of the handpump mistry (HPM). They said ,"If we can repair our own bullock cart, our own electric and diesel pumps and our own agricultural equipment without degrees and qualifications of any kind, what is so difficult about a handpump? It is only a question of changing washers and bearings and the government is spending enormous amounts to perform such simple tasks. It is in the interest of engineers to make simple things look complicated." So they decided to have their own handpump mistry.

The mistry is selected by the community. For three months, he/she is trained in the various aspects of handpump maintenance under TRYSEM (Training Rural Youth for Self-Employment). Then comes the practical training on the field for two months. Here he/she has to lift up the assembly, dismantle the pump, replace parts and re-install it in working condition.

On completing training, a bank loan is arranged for buying necessary tools and a bicycle. If the person belongs to a scheduled caste, a 50 per cent subsidy is given. He/she is then assigned to look after 30 to 40 handpumps within a radius of five to ten km from the village. Every month the village *sarpanch* (headman) certifies that the pumps in the village are in order. With that certificate, the mistry goes to the government block development office to collect the payment made on the basis of the number of handpumps in order.

The mistry has brought down the cost of pump maintenance for the Rajasthan government to Rs. 250 per annum (US $10). Two years ago a policy decision was taken to replace the three-tier system with the one tier system all over the state. The handpump mistry, it was found, could do 90 per cent of the repair work and there was no need for a government block-level mechanic or a district maintenance unit.

From: Bunker Roy, (India)

## 1.5 Cost Recovery and Financial Viability

Even when the community is willing to pay for and manage the upkeep of its water supply, the scheme may flounder unless a suitable mechanism is found for collecting money, arranging repairs and paying caretakers or mechanics. Initial training of selected water committee members in simple accounting and financial management has been effective in a number of countries. Financial viability of water and sanitation systems involves four major issues:

a) Financial autonomy: in developing countries, there is a growing thinking that water supply and sanitation must move rapidly toward self-financing and independence. It may not be possible to cover all costs with user fees, but even in low-income areas, users must pay something for what they use, even if the rate is set low. (See Table 1)

Table 1: Summary of Community Contributions to Capital and Recurrent Costs in Workshop Case Studies

| LOCATION AND TYPE OF SCHEME | CAPITAL COSTS | RECURRENT COSTS |
|---|---|---|
| CAMEROUN<br>Gravity-fed piped scheme from protected spring | Capital and labour contribution equal to 20% of total capital cost<br>Trench and pit digging<br>Carrying local materials (sand and stones)<br>Cash contributions: CFA 500 per man and CFA 200 per woman | All recurrent costs paid by community, in accordance with service level: CFA 500 per taxpayer per year for standpost; CFA 5000 per year per house connection; CFA 100,000 per year per institution.<br>Community contributions cover full costs of village plumber, spare parts and operating costs, at less than cost of service from state water corporation. |
| GUATEMALA<br>Piped schemes with gravity feed or hydraulic ram, handpump schemes, and rainwater harvesting | Cash contributions for initial downpayment<br>Repayment of community loan supplemented by agency donation<br>Trench and pit digging<br>Carrying local materials (sand and stones) | Users make monthly payments which cover all operation and maintenance costs, including employment of a local plumber.<br>Community water boards form local associations to provide mutual assistance in solving problems of operation and maintenance, and local management. |
| HONDURAS<br>Borehole wells, communal tank networks, independent [illegible] served by tankers | Payment of a cash contribution (30% of development costs)<br>Repayment of a loan into a revolving fund for remainder (70%)<br>Provision of unskilled and semi-skilled labour for construction<br>Provision and carrying of local materials<br>[illegible] paid unskilled labour as substitute for own labour | Payment of a monthly fee in accordance with service level: US$1.75 for use of a standpost; US$3.00 for a yardtap.<br>Monthly payments include costs of water board staff and hiring of a plumber. |
| INDONESIA<br>Piped schemes and rainwater harvesting, public bathing facilities | Full cost met by most communities in most cases<br>Combination of cash and in-kind payments + loans and credit<br>Individuals contribute according to socio-economic status<br>Poorest members often exempt from payments<br>Grant assistance may be arranged if communities have difficulties<br>Provision of local materials + skilled and unskilled labour | Full costs met through user fees, depending on service level and system costs: range from US$5.00 to US$50.00 per household per year.<br>Funds also raised through local revolving funds, lotteries, credit systems, entertainments, etc. |
| PAKISTAN<br>Gravity-fed piped scheme from protected spring, with yardtaps | Villagers contribute to a common fund to support the work of the Village Organization (VO) as a precondition for support<br>Aga Khan Rural Support Programme secures loans or grants<br>Provision of local materials and labour<br>Additional funds raised by fining those who don't meet communal labour obligations<br>Village funds hire local plumbers to help in scheme construction | Users meet costs of operation and maintenance through continuing contributions to the village fund.<br>Additional funds raised through the imposition of fines for improper use or wastage of drinking water.<br>Village funds used to hire local plumber for repairs as necessary<br>Individuals are personally responsible for maintaining pipes and taps for their own yard connections. |
| UGANDA<br>Borehole wells with handpumps, protected springs, gravity-fed piped schemes | Community contribution based on negotiation with no set formula<br>Cash contributions usually cover only a small part of costs<br>Provision of local materials and labour<br>Funds may come from cash collections, donations from prominent individuals, auctions, lotteries, raffles, or local taxes | Users pay fees to cover costs of spares and payment of pump mechanic.<br>Volunteer caretakers "paid" by being exempted from communal labour obligations.<br>Additional funds raised through the imposition of fines. |
| YEMEN<br>Piped schemes based on boreholes with motorized pumps | Communities must have a reliable water source, usually a borehole, before the project begins. This is secured either by the community's own efforts or by requesting assistance from the government or a donor<br>Communities meet about 30% of scheme development costs through labour and other in-kind contributions | Users pay a monthly metered charge, which is enough to cover the costs of fuel, oil, spare parts, and the salaries of scheme operators.<br>When a major breakdown occurs, special collections are made to pay for the repairs. |

b) Subsidies, equity and efficiency: in many countries, it is only the relatively better off people who benefit from subsidized services since they are more accessible to service institutions than the poor. The system connection fees may be too high for the poorest, who then are forced to buy water from vendors, often at rates much higher per unit than those the utility charges. Providing cheap water as an income-distribution mechanism may have discouraged conservation and lower the perceived value of a resource that people should be learning to value more highly.

c) Cost recovery and willingness to pay: from currently available experience, it appears that price, convenience, reliability, and quality of water supply and sanitation services, along with a sense of community ownership (labour; management; maintenance provided in cash and in kind) are key ingredients for financial viability. Potential savings include not just monetary savings but also the level of effort and the amount of time it takes for the household's women to fetch water from sources outside the home. (See Box 6)

d) The level of water and sanitation service offered needs to be geared to what users want and are willing to pay for.

Box 6

**Womens' Contribution to Community-Based Initiatives**

In West Africa (Mali, Burkina Faso, Ghana), women often are involved as key players to manage and operate wells, dams and latrines; because they are the primary users and promoters of domestic and community hygiene. Womens' contribution has been enhanced through the following arrangements:

a) involvement in women's associations and self-help groups dealing with health, livelihood and credit and providing education and training upgrading their skills;

b) election of women to management positions in the local user association;

c) selection of women to devise community-appropriate sanitation services (latrines; waste treatment) and hygiene education programs;

d) training women to be trainees and agents of change in the community;

e) involving women in the design of water and sanitation systems, water fee collection and management system.

From: Abdel Kader Sanogo (Mali); Lompo Justin (Burkina Faso), A-Y. Moduc (Ghana)

# 2. Community Management

The participation of users in water supply and sanitation systems, whether in rural, peri-urban or urban communities, is critical to long-term sustainability. While much has been learnt about how to foster community participation in rural areas, it is only beginning to be understood in urban and peri-urban areas: there, a growing proportion of the world's disenfranchised live in marginal settlements with questionable legal status, poor-quality shelters, little or no infrastructure, and few if any water and sanitation services. True involvement means decision-making and hands-on management; the capacity to become effectively involved must be built over time in a community.

## 2.1 Preconditions For Community Management

Why is community management acknowledged as an effective and sustainable solution to water supply and sanitation services?

- ◊ To maximize health benefits;
- ◊ To ensure sustainability of the system through appropriate design and technology, and effective operation and maintenance;
- ◊ To ensure use of local resources, knowledge and skills so as to minimize costs;
- ◊ To build up community confidence and sense of ownership so as to enable further community development in other sectors.

Which are the preconditions that create the enabling environment in which community management can occur?

- ◊ 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.).

## 2.2 Strengthening Community Organizations and Leaders

Without strong institutions and leaders experienced in the management of water systems and in the process of social change, communities have no means of translating their needs into effective decision-making. This is why community management has become important to the development of the poorest communities: it represents an attempt to mobilize and channel the will of the people to undertake and sustain water and sanitation systems. The strengthening of community organizations, groups and leaders involves the following capacity-building activities:

a) devising an acceptable management structure appropriate to the larger social structure of the community.

The institutional structure of a community is but one dimension of its larger social structure: its value systems, religious beliefs, and subsistence strategies. The nature of these components depends on the way community members adapt to the local environment. At least four types of governing/managing institutions can be found in communities today: (1) traditional (authority is exercised by hereditary chiefs, ruling families, or leaders elected by traditional methods); (2) appointed (authority is exercised by local representatives elected or selected by the community); (3) elected (authority is exercised by local representatives elected or selected by the community); and (4) informal (authority is exercised indirectly by women and leaders of influential community organizations such as health committees, churches, special-interest groups, private businesses, etc.).

Community decisions based on village consensus may be reached in many ways: through the authoritarian leadership of individuals or dominant elites, the vote of open assemblies of community residents, or the agreements of representative bodies. Such arrangements are well adapted to the resource constraints facing villagers and community groups in

developing countries (See box 7). The provision of new water resources may disrupt long-held traditions by altering the existing balance of power over the control of water rights. In some cases, this may manifest itself in a plural management structure, wherein leaders or the local elite may hold power over appointed or elected committees and groups. Some of these patterns pertain to the role of women. As the principal users of water, women have played an important role in managing traditional water points and have a vested interest in the provision of new supplies.

b) involving youth and women in water management.

Young people and women are now, important actors in the context of social change. This is so because they have more adaptative capacities, are oriented toward the future, are motivated and concerned with daily survival and family maintenance, all basic conditions to mobilize for action. Water users' associations led by women are the most effective to sustain water systems over long term. It is the role of community-based organizations to facilitate this change in attitudes to youth and women.

c) sustaining community management through government support.

Today it is recognized that for decentralization to work and community management to be effective, some government influence is necessary. Donor agencies cannot plan to have this role in perpetuity; nongovernmental organizations, which can be outstandingly successful at working with a limited number of communities, do not have the breadth or scope to provide such support on a national level. National governments must, therefore, remain important actors in sustaining community management. This requires helping communities gain the skills they need to participate more actively in governmental decisions regarding their lives.

Public sector agencies must take a number of operational steps to ensure effective community management. These include developing a shared understanding among all donors and the government of what community management is and what it is meant to accomplish; clarifying the role of donors, various levels of government, and nongovernmental organizations and developing strong collaborative relationships among them; developing a legal and policy framework and a financial management system that promote community management and control; determining staff, training, and logistical needs; creating ongoing awareness of, and demand for community management; and developing a management information system that collects the kind of data communities will find helpful.

Box 7

## Devising the Appropriate Management Structure

There is not one single approach to devise an appropriate management structure. Examples taken from Mexico and Tanzania show that both traditional and modern structure can fit as long as they reflect the needs of the larger social structure. In Mexico, the traditional models of community organization are still in operation. Communality is the attitude of the people which allows them to maintain their cultural integrity and strengthen the community work. Communality rests on three basic principles: the Assembly, Office bearers, Tequio.

1- The Assembly is the forum where planning takes place and decisions on the future of the community are taken. Everybody has equal status and all have the right to be heard and the right to vote whether they be youth, adults, women or elders.

2- Office bearers: people represented are elected in the Assembly. All citizens are people of the commune, have equal rights and duties to assume responsibilities ensuing from the Assembly. These responsibilities must be carried out strictly respecting the local customs. It is a voluntary service. The administration and maintenance of drinking water systems is also looked after by a commission.

3- Tequio: defined as "work of the people", a tradition which predates the hispanic times strengthens the development of the community. Everyone men and women are obliged to participate in the voluntary work in the projects as decided by the Assembly.

When the authorities (representatives of the people) finishes their work, they have the obligation to clean the entire system of potable water, the water of storage tanks, canals and catchment tanks. For all this exists the Tequio.

The authorities have the responsibilities of calling meetings to plan projects to be taken up during its tenure as authorities of the people.

In community planning all the inhabitants, such as the diverse organizations that exist, have the obligation to participate. In these sessions, water supply has always been a reason for worry and invariably occupies the centre-stage in its workplan. Therefore it becomes mandatory to consider the problem of water, be it maintenance of distribution network, of the tanks, or widening the network and the need to take up new projects.

In all cases, local authorities have the power of assigning the people to the required Tequio and to see that water supply is assured.

When the problem of water supply becomes critical, all the other community projects are relegated to the background. The Assembly has determined what is of priority for the survival of the people: through community planning, the best alternative solution will be found. The authorities will be responsible for coordinating the works and the community will provide the necessary Tequio.

This model of work organization has been going on for a long time and at present it has strengthened a lot. The mexican government has considered using the system of community organization for implementing development programmes at the national level.

In Tanzania, the cornerstones of the HESAWA programme (Health through Sanitation and Water) are active community participation in decision making, planning and implementation,and human resource development. Developmental priorities are to be set by villages, with

planning assistance from the respective district. District technical departments (Water, Health and Community Development) are to advise and support the villages in making their development goals achievable as well as sustainable.

The pillars or principles on which HESAWA activities are founded include: affordability, sustainability, replicability, credibility and cost efficiency. A basic goal is that the water, sanitation and health facilities constructed through the programme should be operated and maintained to the fullest possible extent by the villagers themselves, making maximum use of local financial, manpower and material resources and capacities. The programme operates at four tiers or levels within the government administrative framework: the zone, the region, the district and the village. Each has an important role to play as follows...

The Village: -is responsible for planning and implementation of activities.
-as owners of activities, it is also responsible for operation and maintenance.

The District: -offers technical and sometimes financial support to the villages.
-trains the implementation cadet at the village level.
-monitors the village activities.

The Region: -provides technical advisory services to the district as far as design implementation and follow-up is concerned.

The Zone: -the zonal office has the responsibility for overall operation of the programme, coordinating the districts and regional plans and ensuring that the necessary resources are made available in timely and efficient manner.

From: Alejandro Ruiz Garcia (Mexico), Chris Alonso Lushiku (Tanzania)

## 2.3 Development of People's Skills and Competence

a) Use of participatory, experiential training methods is consistent with the concept that sustainable water supply and sanitation system involves to empower people to take charge of their own development process and to foster a spirit of self-reliance based on self-respect. It puts the responsibility for learning directly on the shoulders of the trainees, telling them that learning will not occur unless they accept that responsibility. Such methods include traditional media such as puppet theatre and other creative art expressions, role games, social animation, group building.

b) In much of the developing world and among poor communities, people learn by doing, not by being taught in formal settings. Experiential learning responds directly to this tradition by placing a heavy emphasis on doing, for instance involving community people in ground water survey using sophisticated equipment, and drilling rigs for boring holes, handpump repair, latrine construction, water testing and leadership training in the field.

This kind of learning calls for the active contribution of trainees to solution and apprenticeship.

c) At the community level, training needs include not just the local caretaker but also the local water users' organization, the people and committees responsible for financial record keeping, fee collection, maintenance of water system and hygiene education.

d) Training is most successful when it is designed as a series of events building on each other. In Tilonia, training is conceived as a series of informal meetings and formal training sessions dealing with social struggles, soil and water management and conservation activities, handpump implementation, operation and repair, story telling about what earlier times of plenty were like.

e) Training materials will fit cultural and social context of local communities. Among the best approaches, combining the skills of a training specialist, a technical specialist and a community worker has proved to be effective, for instance on latrine and well construction, spring capping, hygiene education.

f) In order to provide effective training in the long run, the community must develop a training capability or be linked to an institution providing it. To be effective, training must be based on an accurate needs assessment designed according to the principles of adult learning; targeted to the right audience; designed to improve performance; conducted by skilled trainers; well managed; and continually monitored and evaluated.

Developing a training capability starts with creating a vision for training within the organization. Key community managers and water/sanitation supervisors should contribute to that vision and participate in decisions on the structure and size of the training unit, the cost of training, and recruiting and developing trainers. It is essential to link the training unit's activities to the organization as a whole and to make an effort to elicit the commitment and support of leaders and management. Only then will a training program receive the necessary human and financial recources and be able to serve the needs of the organization.

In Bolivia, the UNDP/World Bank Water and Sanitation Program upgrades skills and competence of indigenous people of the Department of Potosi by using participatory approaches such as SARAR built on the development of people's ability and creativity. It

strives to get conscious and lasting changes of behaviour, attitudes within the frame of cultural values. (See Box 8)

Box 8

## The SARAR Process in Bolivia

The participatory approach, often known as learner-centred, has evolved over the past decade as a means of helping learners take greater control of their lives and their environment by developing their skills in problem-solving and resource management. Unlike traditional teaching methods which have emphasized the transfer of knowledge, messages or content pre-selected by outside specialists, participatory training such as SARAR focuses more on the development of human capacities to assess, choose, plan, create, organize and take initiatives. These skills can then spill over to many other aspects of the person's life and community.

The term SARAR stands for five desirable personal qualities which the participants discover and develop in themselves through the methodology

| | | |
|---|---|---|
| S | stands for Self-Esteem: | When people come to realize that they have far greater creative and analytic capacities than they believed they had before, their confidence increases and they can place higher value on their personal contributions. Thus self-esteem increases. |
| A | stands for Associative Strengths: | When people share ideas as peers in a group and when they work closely together in solving problems, their feelings of being effective, as a group, increases. Team work is strengthened. |
| R | stands for Resourcefulness: | This is another name for creativity. A creative resourceful person looks at the environment and sees many possible ways of solving problems and coping with needs. Resourceful individuals and groups can do wonders where others fail; they are therefore an asset to the community. |
| A | stands for Action Planning: | Planning for action to solve problems is central to the SARAR method. Major changes can be achieved when groups plan and carry out appropriate actions. |
| R | stands for Responsibility: | Members of a group who plan and undertake some action must be willing to take responsibility to complete it and to make it work. It is only when individuals and groups take their share of responsibility for follow-up, that lasting benefits can be expected. |

From: Betty Soto, Bolivia

In Oaxaca's Sierra Juarez (Mexico), indigenous communities integrate training and awareness on water problems and management through community work (Tequio), medias (radio program; videos; graphic arts), hands-on participation to reforestation and water conservation, and a team of community technicians providing assessment and training.

## 2.4 Community Management and Decision-Making

a) Elements of community decision-making.

The distinctive feature of community management is the nature of decision-making and the locus of responsibility for executing those decisions. Community management refers to the capability of a community to control, or at least strongly influence, the development and proper use of its water and sanitation system. Community management consists of three basic components:

- ◊ Responsibility. The community takes on the ownership of, and attendant obligations to, the system.
- ◊ Authority. The community has the legitimate right to make decisions regarding the system on behalf of the users.
- ◊ Control. The community is able to carry out and determine the outcome of its decisions.

Community management, as defined above, is concerned with all issues pertaining to responsibility (ownership), decision-making authority, and control over project development and systems operations. Community activities in this regard all help to ensure that water and sanitation improvements will be sustained. Community participation, in contrast, stresses community involvement and contributions. Admittedly, effective community participation does include some decision-making by beneficiaries, but they do not necessarily have the authority to initiate discussion in this area or to enforce decisions. Community management may imply a variety of management systems, from extensive contributions of self-help labor at lower levels of service to specialized managers at higher level of service. Participation and management can also be distinguished on the basis of fee-collecting activities. Participation implies that the community performs routine operational duties such as record keeping, accounting, and payment collecting under a system predefined by an external agency, whereas management implies that in addition, the community establishes tariff schedules and institutionalizes its own form of

fee collection. The distinction hinges on whether the community is willing and able to make decisions affecting the system.

b) The role of community in water and sanitation management.

The field examples demonstrate the variety of management functions performed by community organizations. During the preparation phase, management functions can occur in any of the following activities: identifying a common problem, organizing a community response and possibly requesting outside assistance, negotiating with external agencies, and participating in project planning and design. During the implementation phase, management functions may consist of decision-making in the mobilization of local resources, collaborating with external agencies, supervizing project activities, and monitoring and controlling construction. During the operational phase, the community takes on the dominant functions of system manager and operator. Decision-making activities in this phase include supervizing operation and maintenance, monitoring and evaluating the system, overseeing financial administration and cost recovery, planning for system improvements and expansion, and collaborating with external agencies.

To be effective, the community must be able to carry out its decisions without undue external restraint or support. Note that the degree of involvement may change as community capacity for management increases. Thus, a community that may not have been involved in the planning and design of a government-sponsored water system because it was not ready for that activity may be ready to handle O & M responsibilities. This is often the case when government regulations apply to the choice of technology, but do not extend to decision-making in other important areas of operation. It may also be that by the time of project construction or subsequent system operation, conditions may have changed and allow (or even encourage) the community to take over certain important responsibilities. This has happened in the Philippines, where the maintenance of improved sanitation facilities became a household responsibility. In this case, daily community management of individual point services was not necessary. Instead, village-elected councils and other local organizations played a role in promoting the project, negotiating with external agencies, and ensuring effective hygiene and user campaigns to sustain the benefits realized through improved sanitation. (See Box 9)

Although community authority, responsibility, and control over decision-making are essential components of community-managed systems, this does not mean that all decisions must be made by the community, leaving the government or external agency with little or

no role in project development and system operation. As mentioned earlier, government institutions generally have regulatory powers, some of which are likely to have been delegated to the agency dealing with the community. From a decision-making standpoint, a community may be active in one area of project development, but not in others. Similarly, it may make decisions on some aspects of its system where conditions are appropriate for community initiatives, but not on others where community resources or experience are lacking.

Box 9

### Popular Management of Water and Sanitation in Quito

For the execution of the Plan of Neighborhood Development (PDV) a network of management councils have been formed. These councils do not replace the existing popular organizations; on the contrary they strengthen them because they will serve as meeting ground of the popular organizations and other urban agents (private development organizations, public institutions, the church, etc.) for the coordination and formulation of policies and proposals that will reflect the feelings and concerns of the dwellers.

To guarantee that the management councils will really represent the neighbourhood interest and that they will defend the autonomy of the dwellers organizations, it should respond to the following principles;

a) should be ample and pluralistic, i e without excluding any existing popular organization, b) should have a majority of representatives of the dwellers of the area. The representatives of the external institutions must play an advisory role and not one of decision-making.

The decisions of the forms and mechanisms of these councils are the fruits of a previous debate.

The management councils act at a sectoral and territorial level. These sectoral components refer to the field of action proposed in the PDV; they appear as specific problems and projects within the areas of economy, territory, culture and training At the territorial level we have to distinguish between the field of action of the neighbourhood sectors and zones.

The management councils play several roles as :

a) Forums for unity and coordination of the dwellers and their organizations.
b) They discuss, elaborate and approve the proposals of water and sanitation development for the area.
c) Negotiate with public and private institutions the implementation of the proposals.
d) They control, evaluate and monitor the construction and projects to be carried out in this sector.
e) Sometimes, they assume the administration of definite projects as in this case.

From: Rodrigo Baretto Vaquero, Ecuador

c) Benefits of Community Management

The concept of community management has received increasingly favorable attention in recent years because the systems based on this principle appear to be more sustainable than those managed externally. If this is the case, such systems should produce even greater benefits than improved water supplies: better health and an increase in the time available for other activities. These benefits appear to accrue in four stages:

- ◊ Immediate behavioral changes: short-term improvements in system performance such as greater use of water and sanitation facilities, adoption of improved hygienic practices, and greater community support for system maintenance.
- ◊ Self esteem, confidence leading to self-help and self-reliance.
- ◊ Changes in support conditions: long-term improvements in available resources and complementary investments.
- ◊ Long-term impacts: anticipated health, social well-being, economic, and environmental quality changes.

Another critical factor to consider here are the perceived benefits central to the concept of community-managed systems. Experience has shown that community willingness to pay for, and use improved water systems is based on the perception that the new services are marked improvements over the current situation (a combination of using traditional sources such as well, river and supplying safe drinking water from this source after decontaminating it, can be an improved system). Most often this attitude is present when communities are involved from the very start in identifying the problem they wish to address and the level of services and technology they want and can afford. The authority to make those decisions is at the heart of the community-management concept.

Furthermore, when the community participates in all stages of a project, the opportunity to consider the financial consequences of various service levels is presented early on. This enables users to debate the pros and cons of various options and to select the system most appropriate for what they need. By assuming a leading role in the planning, construction, financing, and management of new supplies, communities obtain the system they want and will support. This may allow communities to extend their own service coverage at a faster pace and beyond the level of services that the government could realistically provide. In Ghana, for example, some villages are considering financing additional handpumps locally, while other are planning to upgrade their service levels to piped systems.

Because community-managed systems place the responsibility and authority for operations and maintenance in the hands of the users, maintenance is usually more efficient and effective, and overall performance is better. As consumers *and* owners of improved supplies, the community users will be motivated to keep the system performing efficiently. They will therefore want to establish and enforce timely revenue collection systems and schedules for preventive maintenance and routine repairs. In centrally managed schemes, the completed systems often are in disrepair, operate below capacity, or lie abandoned.

Three important long-term benefits that may accrue at the micro-level are the potential spinoff effects on other development sectors within the community, improved health, and potential financial savings. With the steady strengthening of its capacity to handle simple systems, community may develop the capacity to manage more complex services. This experience could prepare the community for involvement in other sectoral development activities and increase its power over local issues. Projects can be instruments for encouraging change.

## 2.5 Relationships Between Community and External Agencies

The realization that life, health, and hygiene depend on an adequate water supply has led governments throughout the developing world to try to meet this basic need through public services. Usually the government has assumed the primary role in meeting these needs. If this role is to shift and communities are to assume managerial responsibilities, the activities of the government must be redirected and those of the community and private sector redefined.

A basic assumption of this guide is that the community management approach cannot succeed unless the relationship between the community and the external agencies it must deal with, is well defined. The areas in which the community operates as an autonomous management unit with full responsibility, authority and control must be clearly spelled out. Otherwise, the resulting void will be filled by those with the most power, normally the external agency.

Detailed outlines of responsibilities are useful because they reveal the complex network of relationships that exists within the community, public sector, donor agency, private sector, and community-based organisations. In order to reflect these partnerships, and to sustain a long-term relationship, the french NGO, Eau Vive has evolved (i) a development contract which sets up a framework of cooperation over 10 years with an African partner and (ii) action contracts which provide details on specific actions to be achieved by this partner.

Based on the International Practitioners'-Workshop experience, the following operative indications for a water supply program include:

- Technical support should be provided for the community to improve and maintain its water sources. Intake works should be diversified, respecting the physical, environmental and cultural context. The overall aim should be conserving and improving all available resources. Priority should be given to the rehabilitation of traditional water-points (seasonal streams, ground hollows, small reservoirs, etc.) and improving existing rain-water harvesting structures.

- The project should contain measures (e.g. soil reclamation and water conservation) that foresee and mitigate the environmental impact of using water resources.

- The whole water system should be protected from pollution (integration of water supply and sanitation works).

- Technical assistance should be provided to support multiple uses of water resources, capable of meeting the many needs of the community. For instance, assistance should be provided to determine the potential of the surface and ground water in the area, with a view to long-term water conservation.

- Technologies appropriate to the context and suitable to wide application should be used, avoiding solutions that are in contrast with the local culture and customs. Technology training should be demystified and widely accessible.

Finally, the important role that CBOs play in facilitating community participation suggests they can play a similar role in promoting community management. Not only can they

provide the intensive attention required to promote community management, but they can also do so over a long period of time. They are also in a good position to help coordinate and integrate water and sanitation activities that fall under the responsibility of different ministries. (See Box 10)

Box 10

## The Assistance Role of NGOs in Water and Sanitation

The Natural Resources Management Support Program in Uganda is an umbrella organization designed to promote Private Voluntary Organizations (PVOs), Non-Governmental Organizations (NGOs) and Community-Based Organizations (CBOs) involvement in natural resources management activities in the country.

The primary goal of the programme is to enhance the capabilities and capacities of international and indigenous PVOs, NGOs, and CBOs to develop policies and programmes aimed at restoring and/or maintaining environmental stability and the natural resources base.

The project has three broad objectives namely:

(i) Create broader awareness of Natural Resources Management needs and opportunities among PVOs, NGOs and CBOs and increase their commitment to effective natural resources management.

(ii) Enhance the technical capabilities of PVOs, NGOs and CBOs in natural resources technologies such as soil conservation, water conservation and supply, agroforestry, conservation of biological diversity, etc.

(iii) Strengthen the organizational capabilities of PVOs, CBOs and NGOs involved in Natural Resources Management activities in such areas as programme management, design, monitoring and evaluation, financial management and accounting.

The program has an open collaborative style of operation through a forum comprising PVOs, NGOs and CBOs having programmes in Natural Resource Management NARM - Forum with a voluntary membership of 135 organizations countrywide.

The forum discusses issues and generates programmes in natural resources management to which support can be directed.

Being a field-based project, funding is allocated for in-country training, technical assistance, information support and direct project funding.

The NGOs propose the project and the program works with them to secure funding and implementation.

The guiding principles in implementing community projects emphasized by the programme are:

(i) The projects must be demand-driven and have to be identified by the beneficiaries.

(ii) The community must contribute towards the cost of the project.

(iii) The project have to be managed by the community through a project implementation team elected by the beneficiary community members.

From: David Mununuzi, Uganda

# 3. Community Empowerment Through Learning and Information

Access to information, learning approaches and tools, networking with other grassroots will contribute to build sustainable and empowered communities managing water and sanitation systems.

## 3.1 Information Management

Information is a crucial resource for effective water resources management and is essential to any community-based activities. Communities require information in local languages and idioms, and need to be involved in the assembly and analysis of environmental data. The provision of information and advice should be based on a dialogue with the community. Using local knowledge and integrating it with the results of scientific studies is essential. This, however, is likely to occur only when the communities see the research as useful, and are fully involved in setting research priorities and testing the methods and technologies that research recommends. In addition, more information needs to go from the local level to national and international levels, about local perceptions, experiences, needs and capacities.

The International Reference Centre on Water and Sanitation (IRC) in The Hague is instrumental in helping promote information management systems with a focus on community. Such systems foster interaction between interconnected elements: assessment of needs and resources; product development; capacity building; promotion. The Tilonia-based Social Work and Research Centre documents and disseminates village knowledge, skills and wisdom which can make communities sustainable and independent. Such knowledge and lessons are used to replicate the Tilonia concept on other states of India and South East Asia. Tilonia evolved a particular leadership in documenting community-based approaches to water and sanitation systems using traditional and local knowledge, skills, materials and technologies.

## 3.2 Awareness Raising, Education and Training

a) In addition to section 2.3, empowerment of local communities usually begins with communications, awareness raising and social mobilization.

The efficacy of this communication depends on the quality and intensity of contact with local people. Such contact necessarily implies sustained presence on the part of an organization in a given area, living and sharing with people.

Community organizations, as a part of the local context, use effective ways and means of communicating the same message, to make the interaction more lively, enjoyable and human. The messages imparted through these actions can be simple ones about elementary hygiene or more militant and struggle-oriented ones about securing people's rights.

The rich folk tradition that exist in the form of songs, puppetry, region-specific dramas and dances, as well as folklore, along with certain traditional rituals, are an indispensable source to draw upon. (See Box 11)

Box 11

**Puppets for Awareness Raising**

One way in which the message is spread is through plays and puppet shows. A description from Sampark, Jhabua, will illustrate what is involved in mobilizing the community through such means. In the wake of the recent drought, Sampark organized 60 awareness camps in its area. The theatre group of the organization performed plays and puppet shows before innumerable village audiences. Since the district of Jhabua is nearly totally tribal in its composition, these plays were in the local dialect of the Bhil tribals. The songs, plays and puppet shows outlined the organization's understanding of the crisis facing the villages as well as the grave nature and dimensions of the problem itself. The plays also presented possible remedies whereby the local people could alleviate their own condition. As a result of such activities, environmental committees were set up in 20 villages to undertake the task of afforestation, soil and water conservation, pollution control and conservation of tree cover. These committees are in turn engaged in the task of awareness building.

In Tilonia, recognizing the need for basic literacy for all, village night schools have been set up for children and adult who have little or no possibility of studying in the formal establishments. Through these non-formal schools, the message of a greener environment is imparted. The children are encouraged to plant trees and raise nurseries: as many as 140 000 samplings were planted in 65 such schools in 1989.

From: Bunker Roy (India)

b) Any action programme for a water and sanitation system must not only incorporate strategies to improve the know-how and life conditions of women, but also give them a say in local decision-making. Training in natural resources management may represent a key ingredient of women's empowerment.

c) Other actions for empowering women and youth include:
- ensuring an equitable and secure land tenure and water rights.
- establishing women's and youth's groups geared to mutual help and cooperation for water and sanitation management. Participatory and group-based methods have proved particularly effective in improving the productivity of women by giving them access to credit, inputs, markets and improved technologies. Gender-specific information at the family and community level is important to improve the status and livelihoods of women.
- supporting water and sanitation schemes fostering the subsistence economy, traditional medecine and other sustainable livelihoods for the extended family and kin-based systems.
- entrusting youth groups certain water maintenance and service fonctions. Youth groups are propitious for certain collective actions: they form a homogeneous age group; they are concentrated, organized by virtue of their main activity, education, and with a built-in leadership system; hands-on training and participation to water management may be promoted through institutional arrangements between schools, community and government agencies.

## 3.3 The Role of Hygiene Education

a) To evaluate how successful are water supply and sanitation improvements, and the likelihood of achieving health benefits, it is not enough to know whether facilities are working. We also need to know whether they are used, and if so, by whom, to what extent, for what purpose, and how. This poses further questions about the kind of changes in human behaviour which may have a positive impact on health.

To be successful in hygiene education programmes, one has to spotlight human behaviour. At the beginning of a programme, the community need to investigate what behaviours are posing health risk and so should be addressed by hygiene education activities. At the end, it needs to assess what changes in behaviour have occured that are beneficial to health.

Before starting new water supply, sanitation and hygiene education activities, each community needs to understand present human behaviours in their social, economic and cultural setting. These are the foundations to build on for successful water supply, sanitation and health improvements.

If it can increase its understanding about the links between human behaviour and the transmission of water and sanitation-related diseases, it can develop better programmes with more impact on health.

b) Some lessons drawn from past experience include: studies conducted by WASH and reinforced by projects in Africa and Asia show that locally produced hygiene education materials can be at least as effective as high-cost, externally produced materials. It is more important for materials to reflect an understanding of the crucial role of hygiene education and community participation in changing behavior than for them to be costly or sophisticated. The materials need to demonstrate potential health improvements, encourage changes in user behaviors, and promote full participation of the affected group. They should be simple, direct, and designed to support a limited number of teaching points.

WASH experience also suggest that hygiene education materials should be based on careful studies of the target audience's attitudes, beliefs, practices, and past experiences with water supply and sanitation. Materials, in other words, should be tailored to the context in which they will be used. The choice of medium should be based on audience and available funds, production materials, and equipment; possibilities include flash cards, games, posters, pamphlets, puppets, and radio and television messages.

The educators involved in developing , making, and using materials, as well as those in direct contact with the community, are more acceptable and more credible if they come from the local community or surrounding areas. If this is not possible, the educators should at least deliver their message through or with the assistance of local people. A hygiene education program in Sri Lanka, for example, was successful in part because the hygiene educators came from the communities being served. Targetting schools for health/hygiene education will improve children's health and awareness. Objectives of such activities include:

- ◊ To increase the awareness of pupils about the value of water management and other associated factors.
- ◊ To educate them about how to use and safely handle drinking-water.
- ◊ To educate them about the hazard of gastro-enteritis and other water-borne diseases, and about the need to use sanitary latrines.
- ◊ To make them aware of the fact that the health of a person is the health and wealth of the family and society.

## 3.4 Networking for Mutual Learning

a) Multiple, on-going interactions between communities dealing with water and sanitation reflect their ways of dialoguing and learning from each other. Such exchanges are valuable means to improving knowledge, fostering skills, sharing experience and expanding such initiatives.

b) Appropriate means fostering mutual learning include:

- direct interaction of people through training, hands-on activities, art performance and other expressions of community's culture;
- reporting on water and sanitation initiatives by video, audiotape,and written document;
- meeting targetted for the whole network or focussing on some topics;
- information exchange on water and sanitation approaches and techniques;
- mutual support through legal assistance on settlement and water rights and urgent intervention in case of conflict or natural disaster.

c) Mutual learning involving sharing of knowledge and experience may be organized around three sets of activities:

◊ Exchange and dissemination of information on operation experience, practical knowledge at the community level (technologies; operation; maintenance; financial viability) and successful approaches and cases. Before an exchange of people takes place, participants to such activity must be thoroughly informed and understand what will be achieved in the host group.

◊ Exchange of people and their involvement in hands-on activities, aimed to foster learning of skills and knowledge and expose people to other approaches.

◊ Twinning between community water associations can be an option for sharing know-how if both organizations are comparable in size and structure, and have to deal with problems of a similar nature.

d) Networking for mutual learning needs to be supported by enabling agencies. Existing programs such as the Technical Cooperation for Developing Countries (TCDC) of UNDP, the International Training Network for Water and Waste Management (ITN) along with its

national and regional network Centres, the United Nations Volunteer Programme might facilitate such mutual learning between community organizations in order to have a multiplier effect on the dissemination of their know-how and other replication of community-based initiatives for water and sanitation on a wider scale. Given the growing problems faced by water-impoverished communities not only in the South but also in the West and East, there is a need to remove restrictions on personnel capacity-building and twinning experience between communities of the West, East and South. International professional community-based initiatives need to generate and support such exchanges of information and people.

## Concludings Remarks:
## How to increase long-term sustainability of community-based water and sanitation initiatives?

1- Long-term sustainability of such initiatives will be tested both at the water and sanitation services provided to the community and at the organization delivering such services. The key variables affecting long-term sustainability are (i) the strength and self-sustaining capabilities of the community organization, (ii) the skill levels of those in charge of implementation; (iii) the operation and maintenance plan, (iv) choice of technologies used and (v) financial viability.

2- Capacity-building for community-based water and sanitation initiatives refers to an integrated approach (i) strengthening the organizational capacity of the community, (ii) developing people's skills and abilities to plan, implement, operate, maintain water and sanitation systems, (iii) providing the financial resources to ensure cost recovery.

3- Community management of water and sanitation services as distinguished from community participation is proposed as a viable strategy in view of the increasing evidence that systems are sustainable when designed, established and operated by the community. Community management means that the community organization has responsibility, authority, and control over the development of water and sanitation services.

4- Community management capacity can be built only through an institutional arrangement between the community and external agencies, so that agencies enable rather than provide. Management capacity cannot be built quickly. The process consists of several stages of maturation, and the level of management capacity differs in each. Advancement in level of management depends on involvement of the community at each stage of implementation and its capacity to build increased awareness, social negotiations between its members and outside forces, control over the process, and financial and technical resources.

5- In rural and poor urban areas, women are the primary users of water supply and sanitation facilities, and often provide most of the construction labour for them as well. Such systems are more sustainable when women have significant on-going responsibility for them. As men go to the cities in search of paid employment, women are more likely to

live in the community year-round, making them more reliable water system caretakers and repair technicians.

6- The financial viability of community-based water and sanitation systems calls for (i) community contributions through cash payments and in-kind donations of time, labour, skills, land and local materials, (ii) cost recovery of capital and recurrent costs through water fee collection, (iii) low-cost service options and technologies, (iv) sound operation and maintenance of those systems. Financing schemes to build and operate such systems include subsidies, revolving loan funds, grants-in aid, credit and savings plans.

7- Sustainable water and sanitation systems require an integrated approach linking drinking water, sanitation, waste treatment and health/hygiene promotion and education. Sanitation needs to give the same priority as water supply, because it reduces the use of water, improves health and water quality conditions. Improvements in hygiene-related behaviour are an indispensable measure of success for water and sanitation services. Since latrines in general seem to raise some resistance in many places, it is useful to assess and test their cultural appropriateness.

8- The design of a water and sanitation system is built upon local know-how, practices and technologies as well as on the community power structure and capacity to organize.

9- Community awareness and education are prerequisites to projects and activities related to drinking water and sanitation; this means:

(i) people involved in such activities must be knowledgeable on training and education. The trainers must be practical and have hands-on experience.

(ii) local community must be made aware and trained in the interrelated aspects of water, sanitation and health, before implementation;

(iii) The selection of local people in charge of the water-related initiative must be made with care, responsibility and a transparent process;

(iv) Local education and training will empower people to develop a sense of ownership and responsibility over infrastructures and services, to develop their own expertise and different technical options on the safe and sustainable use of water.

(v) Local training, awareness and education must be done in-house. There is no need to bring in urban-based experts from outside to conduct such training programmes.

10- The collection, management and maintenance of information about the water and sanitation experiences and accomplishments of a community permit to build on its past success and avoid repeating past mistakes. Access to information and exchanges of informations and people facilitate a better understanding of approaches, know-how and practices useful to design and operate water and sanitation systems. They too may facilitate replication of such community-based initiatives.

11- Technical assistance provided by external agencies (multilateral, bilateral agencies; government; NGOs) to communities is most successful when it helps people learn to do things for themselves in the long term. Conceived as an enabling role, technical assistance will help build local water and sanitation organizations, foster sustainable skills, promote integrated approaches and community management, support community's access to financial resources and appropriate, affordable, efficient technologies, facilitate information exchange and networking activities. Technical assistance has been proved more effective when appropriate time frame and adaptive planning for communities are adopted: a sense of permanence and continuity is essential for community-based initiative.

# References

References are drawn from the presentation papers of participants of the Tilonia Workshop. They are available at the International Secretariat For Water.


Adly, Emad: The Role of Drinking Water and Sanitation in Poor Urban Areas of Cairo; Egypt

Bandaranayake, Ganthihe M. : Water Utilization Problems and People's Involvement in Water Resource Development Projects in the Dry Zone Villages of Sri Lanka

Belbase, Prem N. : Water Users Association in Lalitpur District of Nepal

Barreto, Rodrigo V. : Environmental Control with Community Participation in the North-Western Popular Settlements of Quito

Boot, M.T., Cairncross, S. 1993. Actions Speaks. The Study of Hygien Behaviour in Water and Sanitation Projects. IRC/LSHMT, The Hague

Cantos, Nolindo : Water Supply Project - Pesa, Bongabon, Nueva Ecija, Philippines

Carothers, Richard : Winds of the Sahel; Wind Pumps for water in Niger

Justin, Lompo: Involvement of Local Community in Decision-Making on Drinking Water and Sanitation in Burkina Faso

Lushiku, Chris A. : Implementing a Community-Participatory Development Programme: the Experience from the HESAWA Programme in Tanzania

Manunuzi, David: Natural Resources Management Support Program. Case Study on Pilot Dam and Valley Tanks Water Supply in Nyabushozi County, Uganda

Moduc, A.Y. : The Role of Community in Water Supply, Latrines and Sanitation in Ghana

Moumane, Driss: The Water and Health Programme Project in the province of Tiznit, Morocco

Peres, Maria: Community Involvement, Training and Organization to Use UNIMADE Handpump in Alluvial Areas of Costa Rica

Roy, Bunker: India: The Agenda for Action-SWRC

Ruiz, Alejandro G. : Water and Life of Indigenous Peoples of the Juarez Highlands-Oaxaca, Mexico

Ryzak, Zbigniew: The role of Poland's Local Governments in Water Supply and Sanitation

Sanogo, Abdel Kader: Community Participation in Water and Sanitation in Mali

Soto, Betty: The Yacupaj Project for Sanitation in the Department of Potosi, Bolivia

Sy, Bui Thi: The Provincial Master Plan on Rural Drinking Water Supply and Sanitation, Vietnam

Ugwu, Chris: Maintenance of Water Supply Systems at Grassroots level; the Case of Edem in Nsukka local Government Area of Enugu State of Nigeria

Vannalerd, Soulinphoumy: Community Involvement in Water Supply and Sanitation in Laos