The Challenge of Sustained Water and Sanitation Services

Obudu Ranch, Nigeria

June 16-20, 2008

Water Supply and Sanitation Sector Reform Programme (WSSSRP)

IRC International Water & Sanitation Centre

THE CHALLENGE OF SUSTAINED WATER AND SANITATION SERVICES TRAINING COURSE

OBUDU RANCH, NIGERIA,
June 16-20, 2008

Developed by:

Dr. Jan Teun Visscher and Ms Petra Brussee

For the
Water Supply and Sanitation Sector Reform Programme (WSSSRP)

Content

Introduction

This training package was developed for the Water Supply and Sanitation Sector Reform Programme (WSSSRP) in Nigeria. This programme which was initiated in December 2004 aims to contribute to poverty eradication, sustainable development, and to achieve the MDGs. The specific objective of the WSSSRP is to increase access to safe, adequate and sustainable water and sanitation services in six focal states: Anambra, Cross River, Jigawa, Kano, Osun and Yobe. WSSSRP receives support from the European Commission and the Federal Government of Nigeria.

The proposed training was developed by a team of the IRC International Water and Sanitation Centre. The team consisted of Dr. Jan Teun Visscher (team leader) and Ms. Petra Brussee. The training on sustainability water supply and sanitation is set out to increase the capacity of water managers, engineers and community development specialists to analyze sector information, identify key issues for the management and sustainability of water supply and sanitation services, and increase their skills in addressing sector challenges and improving sector performance. The knowledge and skills gained during this training will be used in particular to improve the sustainability of planned water supply and sanitation services under the WSSSRP.

This training package is based on a five days training programme as outlined in the training schedule (Annex 1). The training materials include power point presentations and brief fact sheets (resource notes) for main topics which include references for further reading. These references include several IRC publications that can be downloaded free of charge from the Internet. The whole including the documents for further reading are included on a CD Rom that will be made available to all participants.

The training package builds on the long term experience of IRC in the sector and in facilitating training of water and sanitation sector staff. Implementation of the training will be done by the IRC lead facilitator with support from the IRC co-facilitator and possible co-facilitation of specific sessions by participants as part of the training.

The training approach combines theory and practice. It includes interactive presentations on key topics combined with sessions where trainees will reflect on these topics and link it to their own experience. Practical exercises and field work will be included to enhance learning. Each participant will develop a brief plan during the course on how he or she will use the experience obtained during the course in his or her work.

We look forward to a good learning experience

Dr. Jan Teun Visscher and Ms Petra Brussee

Detailed Programme

	Timing	Item	Objective	Materials
Day 1	8.30 – 10.00	Welcome Pair wise introduction Expectations	Participants get an overview of the programme and get to know each other	Programme Checklist
	10.00-10.40	Sustainable water supply and sanitation	Getting views of participants Showing broader picture	(show 7th video)
	10.40-11.00	Coffee		
	11.00 – 12.45	Sustainable water supply	Exploring theory and practice	Power point 1[1] RN 1[2]
	12.45 – 14.00	Lunch		
	14.00 – 15.40	Sustainable sanitation	Exploring theory and practice	Power point 2 RN 2
	15.40 – 16.00	Coffee/thee		
	16.00 – 18.00	Actor analysis including gender perspective	Understanding roles of different actors	Power point 3 Resource Note 3
Day 2	8.30 – 10.40	Community management	Enhancing understanding and gaining insight in new developments	Power point 4 Resource Note 4
	10.40 -11.00	Coffee		
	11.00 – 12.45	Enabling environment for community management and private sector involvement	Explore what support is needed for community management and private sector involvement	Power point 5 Resource Note 4
	12.45 – 14.00	Lunch		
	14.00 – 15.40	Introduction to action monitoring	Sharing experience on monitoring	Power point 6 Resource Note 5
	15.40 – 16.00	Coffee/thee		
	16.00 – 18.00	Monitoring community water supply and preparing for field visit)	Developing a systematic approach to look at the performance and sustainability of water supply and sanitation systems	Power point 6 Resource Note 5 (field visit)
Day 3	7.30 – 13.00	Field visit		
	13.00 – 14.00	Lunch		
	14.00 – 15.40	Reporting on field visit		
	15.40 – 16.00	Coffee/thee		
	16.00 – 17.30	Reporting in field visit continued		
	17.30 – 18.00	Learning highlights Initiation of action plans	Getting feedback from participants Stimulate thinking on possibilities to incorporate learning results in daily work	

[1] Printed version of powerpoint will be included in the training package

[2] Resource notes will be included in the training package. This are two to four page notes with key information on the topic and suggestions for further reading

Day 4	8.30 – 10.40	Poverty and sustained financing	Exploring theory and practice	Power point 7 Resource Note 6
	10.40 -11.00	Coffee		
	11.00 – 12.45	Sustained financing	Exploring practical possibilities to sustainable financing	Power point 8 Resource Note 6
	12.45 – 14.00	Lunch		
	14.00 – 15.40	Water safety plans including group assignments	Enhancing understanding of WSPs, that look at the long term sustained performance *of water supply systems*	Power point 9 Resource Note 7
	15.40 – 16.00	Coffee/thee		
	16.00 – 18.00	Water safety plans (continued)	Gaining experience with making WSPs	
Day 5	8.30 – 10.40	Governance and intermediate level intervention	Exploring theory and practice	Power point 10 Resource Note 8
	10.40 -11.00	Coffee		
	11.00 – 12.45	Good governance, accountability and transparency	Create awareness of tools to improve transparency	Power point 11
	12.45 – 14.00	Lunch		
	14.00 – 15.00	Links between water supply and sanitation including school sanitation	Exploring theory and practice	Power point 12 Resource Note 9
	15.00 – 15.40	Evaluation	Getting feedback from participants	
	15.40 – 16.00	Coffee/thee		
	16.00 – 18.00	Finalization of action plans Finalization of action plans	Assisting the participants to incorporate learning results in their daily work	Checklist
	18.00	Closing of Programme		

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Day 1

The context

June 2008

A huge problem

Many people lack adequate WSS services

Many have poor access to relevant information

International response

Millennium development goals

- Goal 7 is on WSS specifically (50% reduction in coverage deficit by 2015)
- Many other goals indirectly related to WSS
  - Secure primary education
  - 67% reduction in child mortality
  - 50% reduction population with hunger
  - Improve conditions of 100 million people in slums

Critical observations

Working with average figures is not adequate (rural/urban, priority groups etc.)

Different definitions of coverage

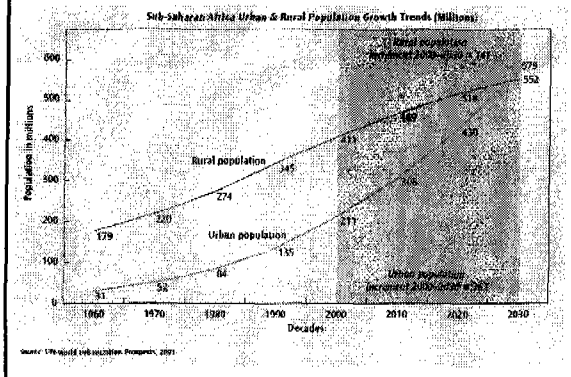
Reference for data decade figures 1990

MDGs are not sufficient guidance (it is not only about access, but also efficiency, use, etc.)

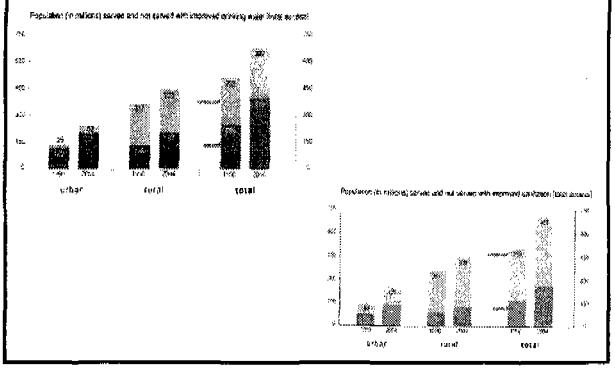
But they are agreed by many governments and therefore we can benefit from them.

The reality:

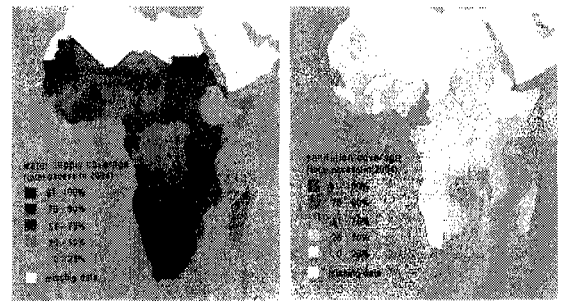
- 2.4 billion without basic sanitation and
- 1.2 billion without safe water supply



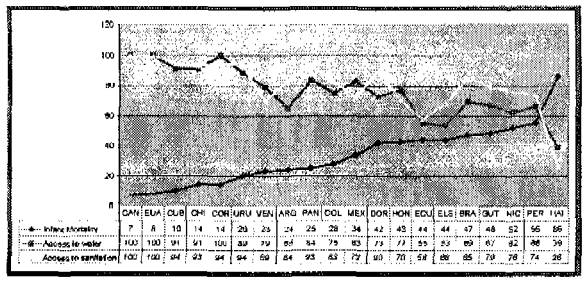
Improved water supply and sanitation coverage in Sub Saharan Africa



Water and sanitation coverage 2004 Sub Saharan Africa



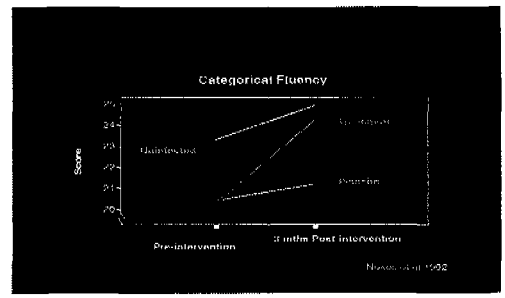
Child Mortality (per 1,000 live birth) and Access to Water and Sanitation (% of population) (in Latin en Central America)



	CAN	ELS	CUB	GHI	CON	URU	VEN	ARG	PAN	COL	MEX	DOR	HON	ECU	ELS	BRA	GUT	NIC	PER	HAI
Infant mortality	7	8	10	14	14	20	23	24	25	28	34	42	45	44	44	47	48	52	56	86
Access to water	100	100	91	91	91	100	89	79	84	94	79	85	73	77	55	83	89	87	82	46	59
Access to sanitation	100	100	94	93	94	94	89	84	93	83	72	90	70	58	89	85	79	76	74	26

Source: Informe Regional sobre la Evaluación 2000 en la Región de las Américas y Salud en las Américas

Link between water, sanitation and knowledge (cognitive development, Jamaica)



Knowledge can make a difference

- Would children die from water borne diseases if they and their parents knew about Oral Re-hydration Therapy or that hand washing can reduce diarrhoeal disease by 43%

  Would a community accept a poor deal from a local contractor if they would know the *real cost of a water supply*?

Water supply can connect people and the environment

People can understand the importance of protecting the source of their water supply

Water source protection is crucial for a good and sustainable water supply (50% of systems in Ecuador at risk)

School sanitation can make the link

IRC

Sustainable water supply

Jan Teun Visscher June, 2008

Water supply coverage in Africa

How many lacked adequate WS in 2000?

An estimated 300 million (38%)

How many will this be in 2020?

An estimated 400 million (28%)

How many countries with less than 50% coverage in 2000?

10 countries

What do we mean with sustainable systems?

A WS system is sustainable when it:

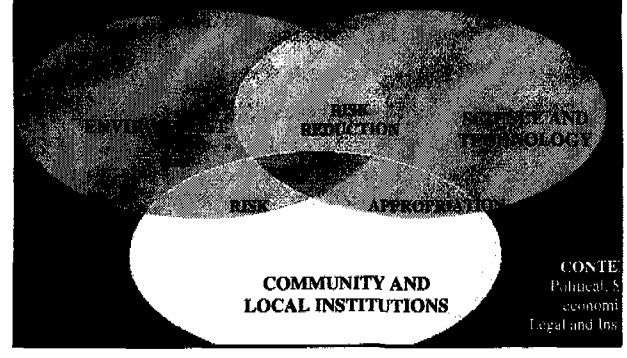
Provides an efficient and reliable service at a level which is desired;

Can be financed or co-financed by the users

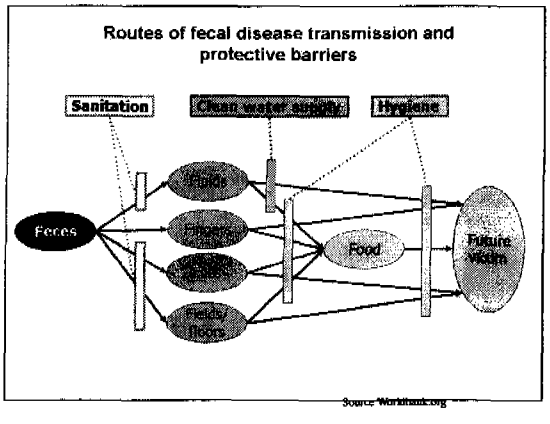
Requires limited but feasible external support and technical assistance;

Is being used in an efficient way, without negatively affecting the environment.

Conceptual framework sustainable interventions



Routes of fecal disease transmission and protective barriers



What is a community water supply system?

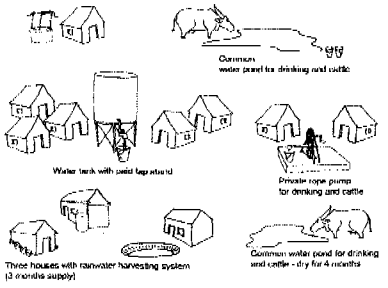
A WS system of a community includes all their different water sources/systems

Point sources

- Rainwater
- Groundwater (springs, wells, handpumps)
- Surface water (rivers, lakes and ponds)

Piped water supply systems

A community water supply system



Key themes to look at

Coverage - equal distribution of benefits

Quantity - satisfying demand within reason - to obtain health benefits

Continuity - access at required time/place

Quality - needed to obtain health benefits.

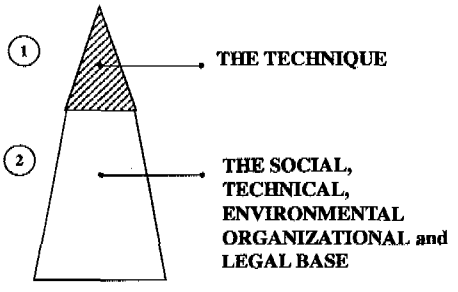
Cost - communities' willingness/ability to pay

Capacity to manage

Culture (water use practice, hygiene)

Water supply technology is often associated with the technique, the tip of the iceberg

THE BASE OF THE ICEBERG IS THE SOCIETY



Technology Transfer started as a one way process handing over tools and equipment

•Handpumps in Africa

•Slow Sand Filters in Brazil and Peru

It is like transferring trees without roots

Critical Factors in Technology Transfer

• ***Level of innovation***	**Can it be easily adapted to local conditions**
• ***Level of uncertainty***	**What is the risk for the users and providers**
• ***Who benefits***	***Who benefits and at what cost***

WHAT TECHNOLOGIES AND METHODOLOGIES ARE WE TRANSFERRING?

- THE ONES WE KNOW and
- THAT SOLVE OUR PERCEPTION OF THE PROBLEM



But problems and solutions have many faces

Key elements of interventions

TECHNOLOGY SELECTION (O&M, SUSTAINABILITY)

PARTICIPATORY DESIGN (WHO ARE YOUR PARTNERS)

CONSTRUCTION (LICITATION AND CONTROL)

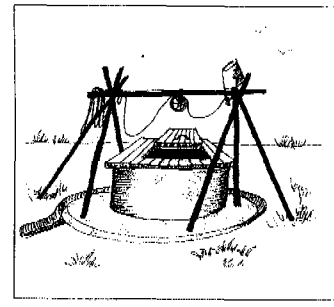
CAPACITY BUILDING AND LEARNING

INFORMED DECISIONS

REVIEW OF THE REQUIREMENTS AND THE IMPACT IN DIFFERENT AREAS

- **TECHNICAL**
- **ORGANIZATIONAL (LEGAL)**
- **ENVIRONMENTAL**
- **FINANTIAL**
- **SOCIAL (GENDER AND EQUITY)**

protected bucket well

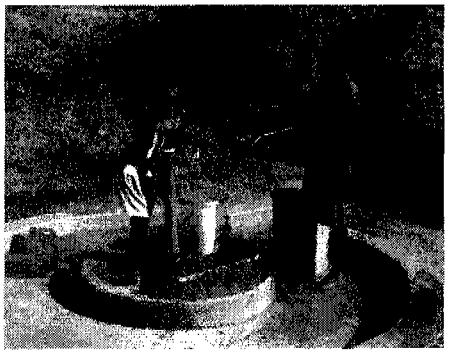


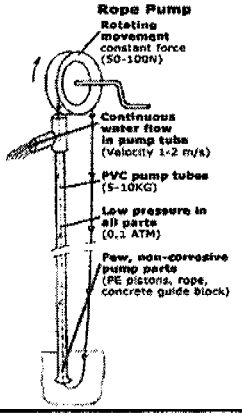
Suction pump

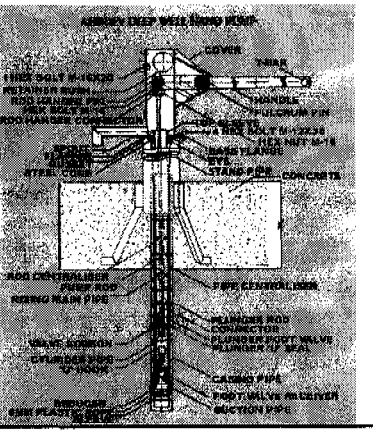
Well ring construction

Maintenance

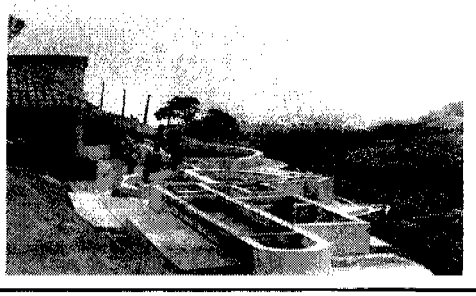
Direct action pump







A Multi Stage Filtration plant in Paispamba, developed by an inter-disciplinary team



Adapt, innovate and transfer

MSF pilot plant units in Puerto Mallarino, Cali

Resource Note on Sustainable Water Supply[1]

By J.T. Visscher, 2008

1. Searching for Sustainable Solutions

The main trust of the concept of Sustainable Development as discussed in the 1987 report of the World Commission for Environment and Development is that activities by the present generation should not compromise the resources, nor the environmental conditions of future generations.

The Development Assistance Committee (DAC) of the Organization for Economic Co-operation and Development (OECD), give a somewhat different interpretation. In 1988 they suggest that a development programme is sustainable when it can provide an appropriate level of benefits over an extensive period of time after the financial, administrative or technical support of an external agency has ended (OECD/DAC, 1988, cited by MDF, 1992). This definition includes a clear donor perspective reflecting the approach OECD member countries use in handing over completed projects to the recipient governments or communities. Warner (1990) presents the same concept, orienting it more to the community level by stating that 'the success or sustainability of a project is achieved when it meets its objectives and is maintained by its users over a significant period of time'.

The definitions of the DAC and of Warner however are too narrow as they do not make a clear reference to the environment, which is becoming more and more the bottleneck in many water supply and sanitation systems. A system may be maintained by the community for many years, producing benefits for the present generation, but its side effects may compromise the environment and so the well-being of future generations.

In the 1990s the sector started a process of change in which governments adapt their role from being a provider to becoming a facilitator (IRC, 1995). This implies increasingly they no longer implement projects but create the conditions for others including organizations operating at community level, without taking over their role. Some governments also promote teamwork to strengthen the capacity of community organizations. This allows the local level, men, women and children, to protect their water supply and their interests in a better way.

Increasingly the political context provides the scope for local level decision making, without putting in jeopardy the right of communities to seek support from specialized sector agencies. In turn, the local level has to understand that the sector institutions are struggling with the changing conditions and are searching for efficient ways to play their role in the new political and juridical context. These developments require adopting learning processes to find appropriate answers.

The obvious limitations for the local level include problems related to funding, training and technical assistance. But also less obvious limitations such as lack of opportunities to

[1] The main resources used for this note are the IRC publications: Multi-Stage Filtration: an innovative water treatment technology by Galvis, G., Latorre, J., and Visscher, J.T. (1998) and Facilitating Community Water Supply, from technology transfer to multi stakeholder learning by J.T. Visscher (2006).

implement research and development activities and poorly developed water surveillance and control activities need to be overcome. The latter problems stress the need for strategic alliances between local level and institutions working at regional or national level including universities to solve problems in an efficient way.

This resource note reviews the concept of sustainability in relation to the sector and helps to orient the search for better solutions at the local level. It clarifies that a good link between sector institutions and communities is needed to safeguard the investments in the sector. It also includes a discussion on the main themes related to the management, functioning and efficient use of water supply and sanitation systems.

2. Sustainable Water Supply and Sanitation Services

Following the new developments in the sector, and taking into account the experience of CINARA and IRC, the following approximation of sustainable water supply and sanitation systems emerges*: A water supply or sanitation system is sustainable when it*

- provides an efficient and reliable service at a level which is desired;
- can be financed or co-financed by the users with limited but feasible external support and technical assistance;
- is being used in an efficient way, without negatively affecting the environment.

The management of the system is a crucial aspect that more and more will be placed in the hands of community or district based organizations. Projects that enhance the management capacity and the self-esteem of communities and make sure that jointly, solutions are adopted that take into account the local conditions and culture and particularly the prevailing sanitary problems, stand a better chance to develop sustainable systems.

The definition indicates that sustainability implies a match between the political, socio-economic, legal and institutional frameworks in which the systems need to operate, and that it involves three strategic inter-linking dimensions as indicated in Figure1 (Galvis et al, 1994).

The community and the local institutions. This dimension concerns different groups of people with some common but often also some conflicting interests and ideas and different socio-economic and cultural backgrounds. The water supply system may be one such common interest, but at the same time can be a major source of conflict. The identity of the people in the communities is shaped by their history and their socio-economic and environmental conditions. Viewing their parents and grand parents drinking (polluted) water from a river or pond may encourage them to do the same. It is also important to realise that a community is not homogeneous. It is made up of different people with different interest and some of them, often the economically better off, may be better informed and may know more of the world. They may also have certain interests in keeping the status quo and therefore may not be willing to solve certain problems. Women may have interests different from those of men and may not have been heard in the past, or their position may make it difficult to achieve changes on their own.

The community dimension includes the roles of men and women, the poor and the rich as well as issues such as the capacity and willingness to pay for the required service level,

possibilities of national or international institutions to finance or co-finance the initial investment and the management capacity at local level. It also includes the possible existence of resources and of institutions that can provide support and assistance. This may concern issues such as technology development, water surveillance and control, environmental, conflict management, hygiene promotion and environmental education.

The environment, the boundary that shapes the community and dictates the risks it faces and the local resources it can draw from to meet its needs. What are the water sources community members can access; what is their behaviour over the year; what is their level of pollution; what are the sanitation practices of the community, do they pollute their own or their neighbours water sources; what are the land and water use patterns. The possible effect a water supply system may have on the environment, for example, by taking away water from nature or by producing wastewater and chemical sludge, also needs to be reviewed. A main issue is to get good insight in the level of contamination of the water supply and the sanitary risks involved. The interface between the environment and the community represents the risk the community has to overcome in relation to, for example, its water supply. The risk-analysis helps to establish for example if the water source is polluted and if this can be prevented or if the water needs to be treated, but also if community members treat the water with care to avoid pollution etc. This analysis thus may help to prioritize actions to reduce the risks.

The technology, reflected in the knowledge, the culture, the infrastructure and the tools actors can use to reduce the environmental risks the community is facing.

The interface between environment and technology represents actions that can be taken to reduce the contamination in the water sources or reduce or eliminate them by treatment preferably applying a multi-barrier concept in which different barriers are being included to reduce the risk of contamination. This may be technical interventions, but also may have to do with changing behaviour to reduce the risks. Better management of catchment areas may for example reduce the contamination hazard, but promoting hand washing may also be a key issue to reduce water related disease in a community. It encompasses discussions with the community concerning the best possible water sources (rain water, surface water or ground water) possibly combining them to ensure an effective use. The interface between technology and community deals with the type of solutions the community desires and is willing and able to manage and sustain. Not every solution is feasible however as solutions need to be in line with the technical, socio-economical and environmental conditions and capacities of the community. The activities related to risk reduction can only be sustainable if the community adopts the solution and gains ownership of it by making it their own.

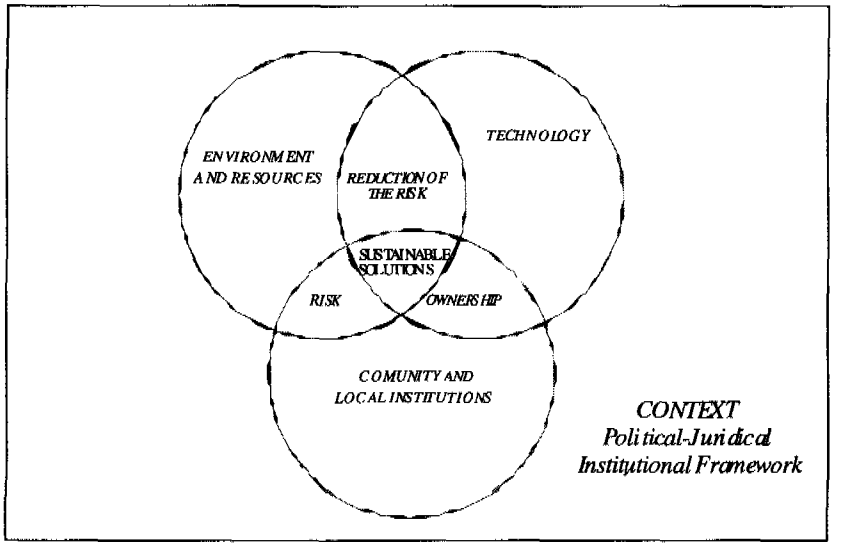


Figure 1: Conceptual framework underpinning the search for sustainability

Solutions that match the three interfaces and the overall political, legal and institutional framework are most promising in terms of sustainability. This requires joint problem solving with the different actors involved and a clear role of the community and the local level in decision making. The conceptual framework presented in Figure 1 is a simplification of the elements involved in the process and serves to illustrate the diversity of the variables. The complexity of reaching sustainable solutions is often underestimated because of lack of dialogue, poor access to information, lack of interdisciplinary in the approach and inadequate research and development activities. Although science may not be able to provide immediate solutions in a specific project environment, it does provide the tools and techniques to initiate the search for them and ensure quality results. The resulting benefits of such research activities, if properly shared with sector agencies and communities, often outweigh by far the investment required to undertake them.

Development programmes in the Sector thus need to enhance the research and development capacity of the institutions involved, and strengthen the network of organizations in search of sustainable solutions. Some of the answers may already exist in the communities or local institutions. This calls for good communication between the actors involved and stimulation of their creativity and initiative. Technologies that are traditionally used in a region often are an important part of the solution, calling for a participatory review of local experience. If 'new' technology has to be introduced, testing is needed to allow for the necessary adaptation to the local conditions and to ensure that adequate operation and maintenance can be taken care of, before promoting large scale application. This also includes a review and adaptation of training materials for the different levels of education involved in the use of the technology.

Just focusing on water supply is not sufficient to reach an adequate health impact and truly contribute to development (Esrey, 1990). It is essential to combine water sector interventions with activities to improve basic sanitation, hygiene behaviour and environmental education.

3 Sustainability Aspects

Advance in construction and the depletion of budgets are important monitoring indicators, but do not say much about the sustainability of project's achievements. It should be recognised that good water supply and sanitation services are a pre-condition for better public health, a higher productivity and a better quality of life. To ensure that the systems contribute to these objectives, they need to function properly and be efficiently used. These two themes, functioning, and use, are the basis for the minimum evaluation procedures WHO already presented in 1983.

This implies that aiming for sustainable systems needs that the emphasis has to move away from construction targets and focus on other indicators that better show the medium and long term outcomes of projects. Three main groups of indicators have been identified that are presented under the following headings:

- the quality and level of service, clearly related to the functioning of the system
- the efficient use of water, related to the way the community is using the resource
- the management of the service.

Together they comprise the main aspects to use in the evaluation of water supply systems (Visscher et al, 1996). Having clear indicators facilitates decision making with the community and the funding agencies concerning the service level that a new system needs to provide to the users. For each theme, specific indicators are required to quantify the benefits a system is expected to provide and establish the implied management and support requirements.

3.1 The Quality and the Level of Service

To establish the quality and level of service of water supply systems, the following criteria and basic indicators can be used (adapted from Lloyd et al., 1987):

Coverage refers to the access that people in the community have to water supply systems. For many people, it seems to be the most important indicator, but, the conclusions from the Water Decade show that to obtain health and social benefits it is not enough to focus on coverage alone. Access to good quality water should be fairly distributed to the greatest number of users possible. This may, for example, require special design measures in mountainous areas to ensure that both people living on higher and lower grounds receive sufficient water. Also, if water availability is a problem, users from high and low income zones should receive identical quantities. If sufficient water is available, people who want to have more water can obtain this extra service, but at a higher price.

Coverage can be expressed as the percentage of households in a locality that are connected to a water supply system or that have fair access to potable water, thus also including households with access to other protected water sources. Coverage is also a management indicator, as its change over time can indicate if the community water agency has been able to maintain or increase the existing number of connections without affecting the service supply.

Continuity in service provision is needed in order to avoid risk of recontamination of water in the distribution network or in storage tanks in the households or the risk that people

revert to polluted sources if protected wells run dry. This has implications for water source selection but also for the design of treatment systems and distribution systems. It is important to guarantee, for example, that the service continues under if normal operation and maintenance tasks are carried out. In localities where water cannot be supplied continuously, the risk of recontamination in the distribution network should be investigated very carefully and prevented by making proper designs and identify protection actions with the community. In the case of intermittent water supply distribution hours need to be specified in consultation with the users to avoid unnecessary waiting times.

The continuity of the service can be reviewed by considering the hours of supply per day, the variation in supply over the year and by area, and the number of service suspensions lasting, for instance, longer than half a day per month. The latter can be related, for example, to intermittent electricity supply or lack of fuel in pumped systems, or with water source problems in the dry season, erosion problems or flooding. Continuity needs also to be reviewed within the community and particularly those living on higher ground may have more service interruptions as a result of design deficiencies, operational problems or high water wastage of their neighbours or in the system.

Quantity, is an important factor for health improvement. Enough water should be provided for drinking, cooking, food preparation and good personal and household hygiene. Bringing water close to the user reduces the time and efforts involved in water collection, a benefit which is particularly important for women and children. Also the inclusion of other demands, such as watering cattle and small scale irrigation, requires a full discussion with the community that includes an analysis of the environmental and socio-economic consequences. If the community is prepared to finance other types of use, and if the source and the existing sanitation conditions permit it, further demands can be considered at cost, provided the community understands the negative impact of excessive demands and water wastage. Making provision for such additional uses, although more expensive as it requires a larger system, may be very important to gain full acceptance by, and continuous support from the users. If fact multiple water use may raise their income just a little which may allow them to pay the water bill. Existing standards used for system designs assign global norms to water consumption. These may not be in line with the demands and capacities of the users and may not cater for multiple water use. Therefore it is essential to discuss the implications with the community and if needed to deviate from the existing norms.

An initial estimate of the quantity of water that is being supplied in a system can be defined from the daily production measured in the storage tank, and the number of users that it supplies. This value is greater than the per capita consumption, as it includes visible and invisible losses that occur within the system. The quantity supplied can only be analysed in detail if the reading of meters that register consumption is carried out. An alternative to estimate water consumption is to carry out a survey by installing a few water meters in randomly selected households, provided water quality permits the use of meters. Another option is to carry out a users survey asking about daily water consumption. This may not produce fully accurate results, however, as users may not inform properly about water use for activities such as irrigation or watering cattle.

Another key point for a sustainable service relates to the capacity of the water source. The supply volume should preferably be considerably less than the capacity of the source during

the critical dry period. The greater the difference the better, particularly if the source is also used for other purposes, such as irrigation.

Quality, key factor for public health, for the acceptance by the users and for operation and maintenance of the water supply system. Water quality will be discussed in more detail in one of the other resource notes. Here we just reiterate that the combination of systematic observations in sanitary inspections combined with water quality analysis provides the basis for identifying the risks and for prioritizing remedial action.

Cost of systems will be largely determined by the water quality risk associated with the source, and the geomorphologic and geographical conditions. Sometimes a combination of water sources may be feasible to reduce the cost. In Zaragoza, in the Pacific Coast of Colombia a piped water supply was provided to the lower part of the community whereas the higher part was served with rainwater harvesting systems to avoid costly pumping.

The implemented technology should, if possible, be in harmony with the socio-economic conditions and above all with the willingness of the users of the system to pay. As a minimum the tariff should cover aspects such as operation and maintenance, and, if agreed upon between the financing body and the users, recovery of the initial investment. Furthermore, if possible, it should be able to cover unforeseen costs and future expansions. At the international level, it is considered that monthly tariffs should preferably not exceed 3 to 5 percent of the average monthly income of the user (UNDP, 1990). This indication may help to establish national and regional guidelines for tariff setting and recuperation of investment cost. As an indicator of the willingness to pay, the percentage of the users that have not paid the tariff in the last two to four months can be utilized.

3.2 The efficient use of water

The attitudes of different stakeholders towards the environment in general and especially to the water resources, are essential aspects to review with them. The conservation of water resources and the efficient use of the water supply system are important issues to review. In the Andean region, water consumption in different communities varies from 20 to 1000 lcd. These communities have different 'water cultures', the forms in which they see and use their water resource. This is often related to history and local conditions. Understanding the beliefs, and local customs related to the utilization, protection, and care of the water supply sources is an important basis to help facilitate a reflection process in the communities. Through this process understanding of the importance of better source protection and efficient water use can grow, and can serve as a basis for changing attitudes and practices. This may include different approaches to, for example, watering animals, small plot irrigation and quicker repair of taps and leakage's.

It should be realized that a lot of the high 'consumption' levels stems from poor design of distribution networks allowing for excessive pressures leading to high use. Also water is wasted because of taps that are left open, toilets that keep running and high leakage in the distribution network.

The indicators that can be used to evaluate the efficient use of water include:

- the volume of water used per consumer;
- the percentage of people that use water from other sources with a high sanitary risk for human consumption;
- the percentage of households with taps and flush toilets that are leaking;
- the extent of unplanned and uncoordinated use for irrigation and watering of animals; and
- the number of users that boil the water even although it complies with the national norms for water quality.

3.3 The administration

To ensure that the level of service is sustained over time, it is necessary that the management capacity at the local level matches the operation and maintenance requirements of the system, requiring only a minimum of support from government or external institutions. The administrative entity should have knowledge of the staff and material required to maintain its system in optimal condition. It requires a good accounting system (register of income and expenditure) and adequate communication channels to share information with the community and supporting agencies. It is important that the community trusts the administration and the supporting agencies in technical, managerial and financial matters. This may require special efforts to gradually build this trust. The administration should be accountable and open, particularly concerning expenditures and contracts with third parties, having, for example, clear criteria for contract procedures.

The support institutions have to provide assistance while ensuring that they do not take over the role and function of the local or municipal administration. It is also important not to combine the support activities and the control function in the same support institution.

The capacity to manage the system can be analysed by making use of some indirect indicators such as:

- relevant years of experience of staff and the training received;
- effective participation of men and women and their roles in decision making in the administrative body;
- the number of meetings between the members of the administration and the community or their representatives (or communities in the case of one administration for different systems);
- the type and frequency of supervision that is carried out on the work of the operators;
- the number and type of problems resolved with the users;
- the existence of a monitoring system for system performance and user payments.

The management can also be reviewed using more direct indicators such as the number of inspection visits made, the compliance with the existing regulations such as water quality norms, availability of financial accounts, high degree of punctuality in payments, opportune calling upon external institutions and active search for training opportunities and advice.

4 Community participation

Communities play an essential role in the search for sustainable solutions. Continuous use and good management of the systems can be achieved more easily when the opportunity is given to the community to express their needs and their points of view, and to actively participate in the planning and execution of the project. In the conference of Ministers in Noordwijk in 1995, many of the lessons learnt during the 80's were reviewed and it was put forward that the greatest challenge is that of managing the human dimension of the problem (IRC, 1995). The new role of the Government is to stimulate and facilitate communities in problem solving. This implies an important political challenge to mobilise the people and communities to seek out a new future where they would be the driving force of their own development.

This challenge requires that the population is conscious of the growing crisis of the water resources, and that it is helped to identify and analyse its own problems and deciding about solutions. This requires that representatives of all the sectors of the population (man and women, different ethnic and religious groups, with different levels of income), would be informed and consulted, to enable them to participate in decision making, from the beginning of the project, on aspects such as:

- the conservation and protection of natural resources and particularly water resources. In fact community members are the first to be affected from poor protection, often are doing the damage themselves and as they may live close are also best placed to monitor the watershed;
- the benefits of the continuous supply and efficient use of good quality water;
- the rights and responsibilities of the development actors (community, government, financing organizations, technical agencies etc.) in the formulation and implementation of projects;
- the technical implications (particularly related to operation and maintenance) and financial consequences (tariff) of selection of water sources, service levels and the location of the different components of the technology option that they select;
- the roles of planners, designers, constructing firms, supervisors, civic monitoring committee during the development and construction of the water supply system.

5. Further reading

If you want to explore these issues in more detail you may wish to access a number of additional titles in the internet (or on your CD-Rom) including:

- Wijk-Sijbesma C. (1995). *Gender in Community Water Supply, Sanitation and Water Resource Protection, a guide to methods and techniques.* Occasional Paper Series No 23; IRC, International Water and Sanitation Centre, the Netherlands http://www.irc.nl/content/download/2562/26426/file/op23e.pdf'
- Visscher J.T. (2006) *Facilitating Community Water Supply, from technology transfer to multi stakeholder learning.* IRC, International Water and Sanitation Centre, the Netherlands http://www.irc.nl/content/download/25104/278851/file/TP46_FacilitatingCWS.pdf

- Bolt E., Fonseca C. *Keep It Working: a field manual to support community management of rural water supply.* IRC Technical Paper Series 36; IRC, International Water and Sanitation Centre, the Netherlands http://www.irc.nl/content/download/2602/27266/file/TP36_KeepItWorking.pdf
- Lockwood H. (2004) *Scaling up Community Management of Rural Water Supply;* Thematic Overview Paper; IRC, International Water and Sanitation Centre, the Netherlands; http://www.irc.nl/content/download/9525/141513/file/ScalingUp_CM.pdf
- Cardone R., Fonseca C. (2003) *Financing and Cost Recovery*; Thematic Overview Paper 7; IRC, International Water and Sanitation Centre, the Netherlands; http://www.irc.nl/content/download/8160/126955/file/TOP7_CostRec_03.pdf
- Smet J., Wijk-Sijbesma C. (2002) *Small community water supplies: technology, people and partnership*; Technical Paper Series 40; IRC, International Water and Sanitation Centre, the Netherlands; Only the introduction is available online: http://www.irc.nl/content/download/14611/195586/file/tp40e01.pdf

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Galvis G.; Visscher, J.T. and Fernandez, B. (1994). Overcoming water quality limitations with the multi-barrier concept: a case study from Colombia. In : Slow sand filtration. (pp. 47-60). Denver, CO: American Water Works Association.

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Lloyd, B., Pardon, M., and Bartram, J. (1987). The development and evaluation of a water surveillance and improvement programme for Peru. Paper presented at the American Society of Engineers International Conference on Resource Mobilization for Drinking Water in Developing Nations. San Juan, Puerto Rico.

OECD/DAC, 1988, cited by MDF, 1992). Sustainability of Projects. Ede, The Netherlands, Management for Development Foundation.

UNDP (1990). Global Consultation on safe water and sanitation for the 1990s, 10-14 September 1990, New Delhi, India : safe water 2000 : the New Delhi Statement. New York: UNDP.

Visscher, J.T., Quiroga, E., Garcia, M., Madera, C.A. and Benavides, A. (1996a). *En la búsqueda de un mejor nivel de servicio: evaluación participativa de 40 sistemas de agua y saneamiento en la Republica de Ecuador*, (Serie documentos técnicos ocasionales; no. 30). Cali: CINARA, Delft: IRC International Water and Sanitation Centre and Quito: CARE Ecuador.

Warner, D.B. (1990). *New roles for monitoring and evaluation in water supply and sanitation.* Geneva:World Health Organization.

WHO (1983). *Minimum evaluation procedure (MEP) for water supply and sanitation projects.* Geneva:World Health Organization.

Towards Sustainable Sanitation in Africa

June, 2008

Sanitation coverage in Africa

How many lacked adequate Sanitation in 2000?

- An estimated 400 million (50%)

How many will this be in 2020?

- An estimated 500 million (36%)

Progress not keeping up with population growth particularly in urban slums. In Africa some 60% of the urban population lives in slums and in Africa below the Sahara 71%.

Annual investment 1990-2000 US$ million

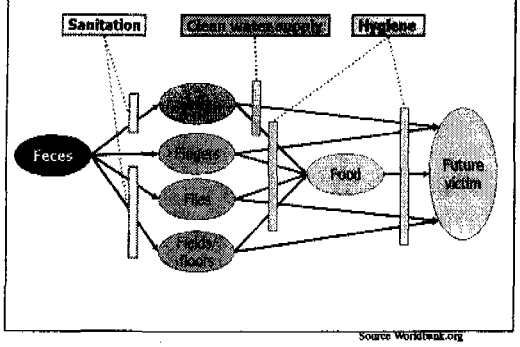
	National	External	Total
Urban WS	942	2100	3042
Rural WS	259	777	1036
Urban San	195	215	410
Rural San	63	68	131
Total	1459	3160	4619

Source JMP WHO-UNCEF

Building on experience

- Why promote sanitation (reasons, benefits)
- What are constraints and opportunities

Routes of fecal disease transmission and protective barriers



Source Worldbank.org

RELATIONSHIP BETWEEN INFECTIONS AND PREVENTIVE MEASURES

Infection	Water quality	Water quantity	Personal and Domestic hygiene	Excreta disposal	Food hygiene	Drainage
Diarrhoea, Dysentery Typhoid	+++	+++	+++	++	++	
Roundworm Hookworm	+	+	+	+++	++	
Pinworm, dwarf tapeworm		+++	+++	+++	+++	
Schistosomiasis	+	+		+++		
Skin infections		+++	+++			
Conjunctivitis Trachoma	+	+++	+++			
Malaria, Dengue Yellow fever						+

Importance intervention +++ = high, ++ = medium, + = low

Key themes to look at

- **Coverage** – Maximising impact to obtain health benefits
- **Convenience** - access at required time and place satisfying demand within reason
- **Quality** - to promote continued use and facilitate cleaning
- **Cost** - communities' willingness/ability to pay
- **Capacity to manage**
- **Culture** (habits, beliefs etc.)

What are key sanitation components

- Safe excreta disposal (feces, urine)
- Grey water disposal
- Solid waste management
- Drainage

- Other problems industrial and animal waste

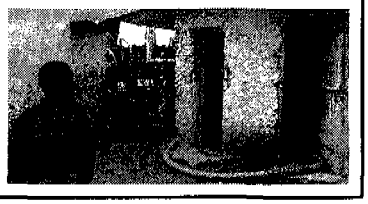
Safe excreta disposal ?

What are common solutions in Nigeria

- Urban – Rural
- Advantages and disadvantages

Safe excreta disposal

1. low-cost on-site, with safe pit emptying and disposal, or composting toilets, on site treatment
2. Low-cost off-site (small bore, condominial, pro-poor measures to access conventional sewerage)



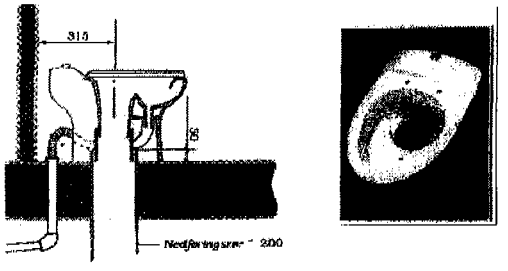
Urine separation

Reduces odour problems

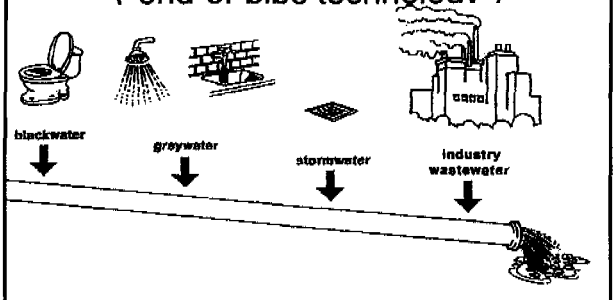
Permit to recycle nutrient (Urine contains 70% of the Phosphate (P) and 90% of the Nitrogen (N) and is low in heavy metals (Production 0.4 Kg of P and 9 Kg of N per year)

Urine can be used directly on the ground or in a 2-5 dilution directly on the plants

Latrine with urine separation



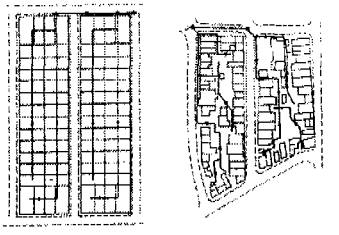
Conventional, "open" system ("end-of-pipe technology")



Trend in solutions

1. "Out of sight -- out of mind".
2. End of pipe treatment
3. Waste reduction and cleaner production
4. Closing the nutrient loop, facilitating the producer of pollution to take his/her responsibility

II. Sanitation Components: condominial sewerage



Planned Area Unplanned Area

- Runs directly through yards of people's houses
- Suitable in densely populated planned & unplanned settlements
- Shorter, more direct lines lowers investment costs
- Householders agree to maintain their own stretch (unblock through manholes) – improving functioning & saving recurrent costs

Transport and inactivation

- Dilution in water (surface water, groundwater)
- Closing the pit
- Digging the material out by hand
- Hand operated vacuum pump
- Small motor driven vacuum pump (Vacutug)
- Vacuum truck

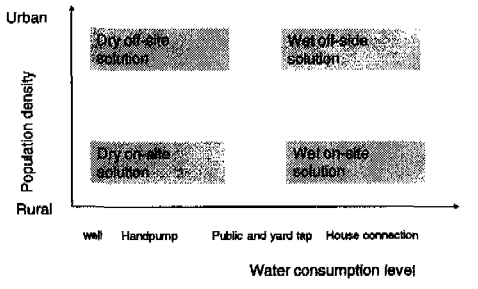
Final disposal

- Dilution in surface water
- Disposal in/on the ground (groundwater)
- Composting and reuse as fertilizer

Construction cost per person			
Type of system	Per capita construction costs (median) in US$		
	ASIA	AFRICA	Latin America and Caribbean
Septic tank	75	97	100
Sewer system	64	100	154 (rural) 196 (urban)
Small bore sewer	40	-	140 (rural) 130 (urban)
Poor flush latrine	30	42	73
Ventilated latrine	29	32	42
Pit latrine	8	16	56

Compost latrines US$ 20 – 2000 per person

Technology application



Sanitation technology / high water table

- Compost latrines
- Dehydration latrines
- Elevated poor flush latrine or sealed latrine
- Elevated dry latrine
- Public toilets
- Overhanging latrine (in case few people live in the area)

Sanitation solutions

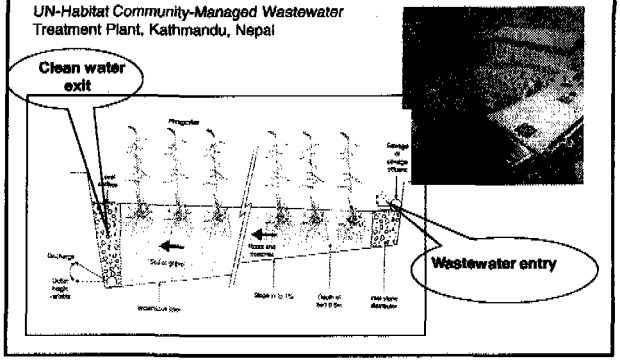
Safe organic waste disposal – human excreta + animal excreta + organic waste – for use in compost toilets, biogas

Recycling/reuse inorganic waste: plastic, paper, glass, metal

Community-managed black and grey waste water recycling

Sanitation Solutions

UN-Habitat Community-Managed Wastewater Treatment Plant, Kathmandu, Nepal

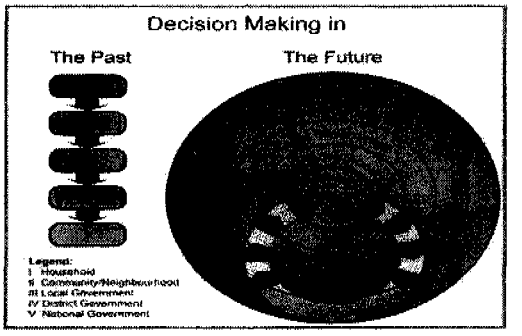


Solid waste and drainage

WHY DID PROBLEMS GROW ?

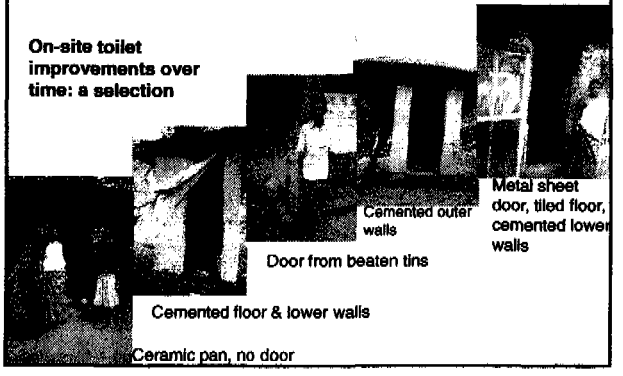
- Lack of money to do something about it?
- Not knowing what to do ?
- Lack of civil rights of slum dwellers ?
- Lack of interest of slum dwellers ?
- Resistance by slum-gangs, slum-lords ?
- Lack of interest of decision makers ?
- Will giving tenure to squatters encourage others to come..... ?

Household Centred Approach

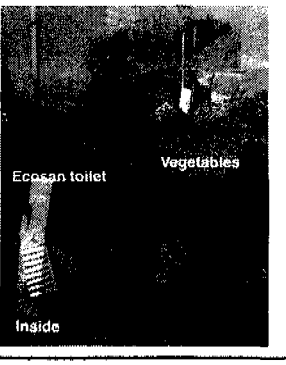


Sanitation solutions: the Toilet Ladder

On-site toilet improvements over time: a selection

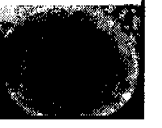


Sanitation Solutions: Compost Toilets

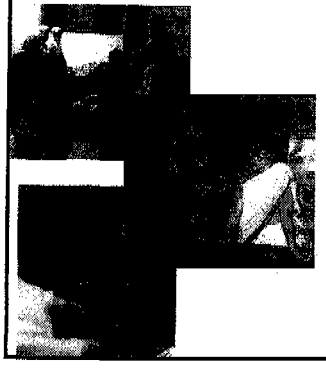


On-site toilets with safely re-useable human excreta:

- Double vault pour flush or VIP toilet. No separation of urine, reuse after 3 years
- Ecosan toilet: urine diversion (directly useable as fertiliser), and dry faeces, useable after 3 months



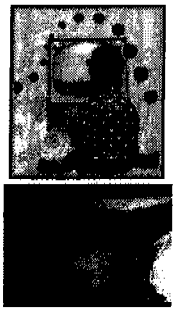
Approaches: Short term Intensive Campaigns



Short-term, intensive approach with 1-2 goals using household approach:

- Sanitation campaigns promoting toilet construction through mass media and personal contacts/small groups to create demand
- Meeting demand by training entrepreneurs to build low-cost toilets and to sell parts for households to build it themselves

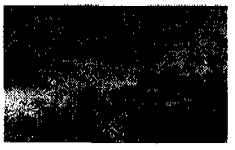
Approaches: Social Marketing



Special version of short term intensive promotion: Social Marketing - 4 P's

- Practice/Product: a single key practice or single product, e.g. toilet, hand washing with soap/ash
- Promotion: Targeting different target groups with a tailored strategy (selected messages, media)
- Place: Adjust places & settings to target groups access
- Price: different options at different price reflect different capacity/willingness to pay

Approaches: Community-Led Total Sanitation



Short term, intensive approach with 1-2 goals and community approach:

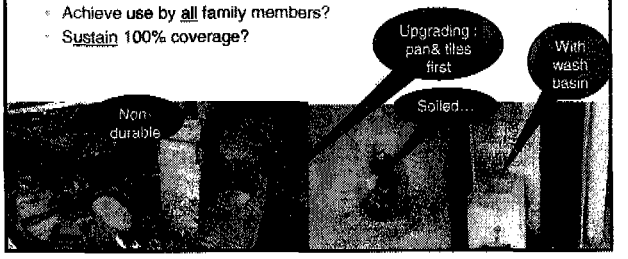
Community-Led Total Sanitation

- Community Transect Walk to visit local open defecation areas
- Calculation of excreta load – 'do we want this dirt & shame?'
- Decision that all households will build toilets and make community open defecation free
- Social pressure to ensure all comply

The challenge: long term effects

The challenge is not just to build but learn how to...

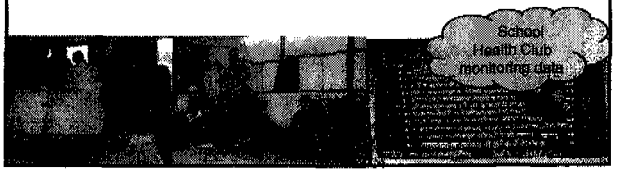
- Get durable toilets?
- Learn from one other, for better models & materials?
- Assist the poor?
- Sustain unsoiled toilets?
- Achieve use by all family members?
- Sustain 100% coverage?



Longer-term capacities

More comprehensive, longer term approaches, addressing sanitation + hygiene behaviour & other hygiene conditions

- Community Health Clubs: extension staff helps form club, trains leaders, provides materials, and does baseline and change/impact studies
- Community-managed Sanitation Programs: extension staff helps communities organise and set up committees to assess conditions with local government ...

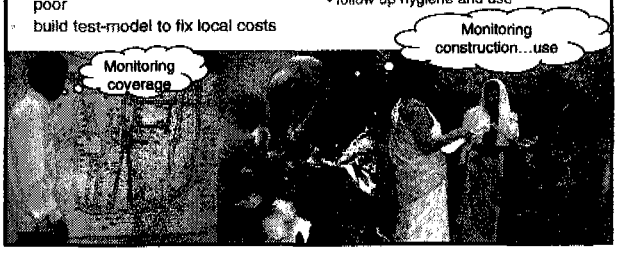


Longer term capacities

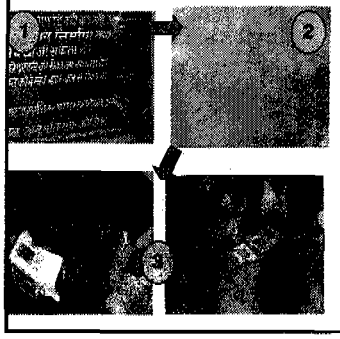
Community committees

- plan local sanitation programme
- promote construction
- allocate and account for subsidies to poor
- build test-model to fix local costs

- procure materials
- employ trained masons
- monitor construction
- follow up hygiene and use



Approaches: Informed Choice of Technology

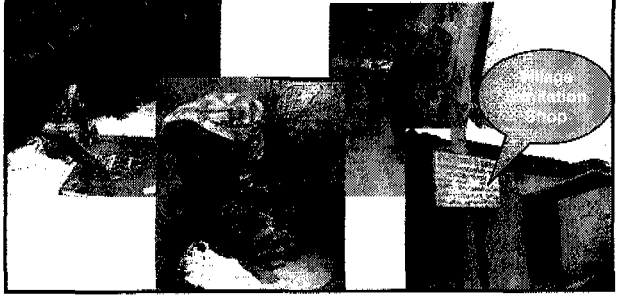


1. Information: Give target *groups data on options* and costs
2. Motivation: Draw out implications of installing toilet, with conclusions and action plan
3. Choice: Women and men make informed choices of technology & design
4. Construction
5. Follow-up

Local Toilet Production and Sales

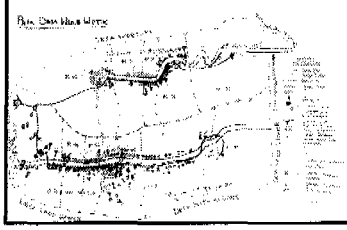
Examples from India

Trained women toilet masons/block makers
Establishing local production and sales centres



IV. Measuring Results: Surveys/PRA

- In large programmes, social surveys are generally used to assess coverage, use and hygiene (before and after)



- PRA is an alternative :
  - Welfare classification, social maps, and sanitation matrix show access by class
  - Participatory observations on use and hygiene
  - Self-scoring/voting on use within households
  - Tools give data and promote learning and action combined

Measuring Process Results

- Qualitative data can be quantified through scales:– this example is on gender equity

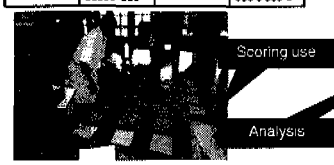
Descriptive scoring options	Scores	Score
Women come, speak and all decisions made jointly with men	100	Score can be between points e.g. 60 (women attend speak, and influence decisions rarely)
Women come, speak & influence 1-2 decisions	75	
Women come, speak but no influence	50	
Women come, but do not speak	25	
Women do not come to meetings	0	

Measuring Results: Outcomes

Access by class

Wotawuri, July 2006	No Toilet	Toilet	Total
Upper	●●●●● ●●	●●●●● ●●●●● ●●●●● ●●●●● ●	●●● ● ●●● ●●● ● ●●● ●●● ● ●●● ●●● ● ●●●
Middle	●●● ●● ●●●●	●●● ● ●●●● ● ●●●●●●	●●● ● ●●● ● ●●●● ●●● ●●●●●● ●●●
Lower	●●●●● ●● ●●●●● ●● ●●●●● ●●●	●● ●●	●●● ● ●●●●● ●●● ● ●●●●● ●●● ● ●●● ●

Transect walk

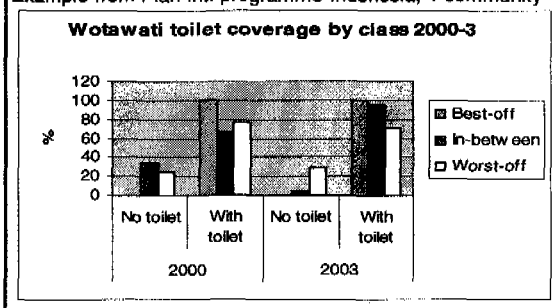


Scoring use

Analysis

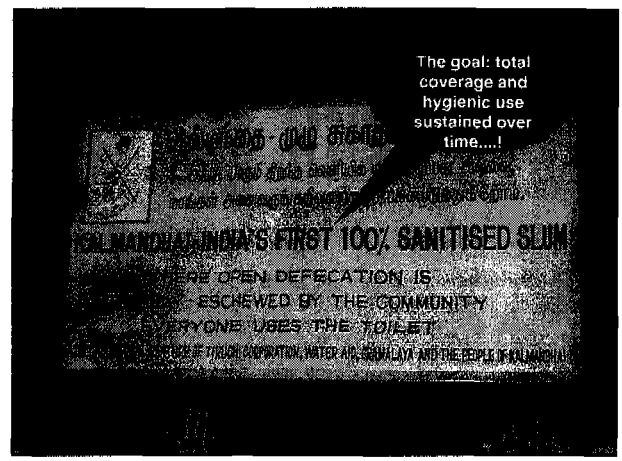
IV. Measuring Results: Progress over time

Example from Plan Int. programme Indonesia, 1 community



'Important questions'

- Do messages reflect different motivations and interests of women and men, better-off and poor?
- Do channels reach poor women and men? as well as the better off
- Do men and women contribute and benefit equitably? (work, training, jobs, income?)
- Does any subsidy reach the poor, and only the poor? Is allocation transparent? accounted for? Sustained after programme ends?
- What happens to toilets and toilet use? Upgrading? Pit emptying? Waste products?



Resource note 2 Sustainable sanitation[1]

By J.T. Visscher, 2008

1. Introduction

Sanitation coverage is still considerably behind water supply coverage in most parts of the world. The fact that over 2.4 billion people do not have adequate sanitation facilities is nothing but a big scandal. Whereas attention is increasing among national and local governments, development agencies, and communities the gap is huge. To meet the Millennium Development Goals every day some 700,000 people need to gain access to an improved facility and start to use it. The actors involved in sanitation are struggling to develop and implement programmes that lead to sustainable sanitation solutions. Their experiences are reflected in a large number of documents that present different technologies and approaches. For today's decision-makers and promoters, the choice of methodologies and technology options is bewildering. Case studies outlining success stories are counterbalanced by authoritative reports on construction and use that has failed to be sustained.

There is no magic bullet for solving sanitation problems. Nor is there universal consensus on the optimum way of involving communities. This note brings together some of these experiences but also includes references to a number of selected documents for those who want to enhance their understanding of this dynamic and challenging area.

2. What is sanitation about?

Improved environmental sanitation covers a broad range of aspects including:

- freedom from human and animal excreta which contain many pathogens
- freedom from solid waste that contains chemical and biological contaminants, attracts vermin and encourages insects to breed
- freedom from waste water and surface water runoff that contain chemical and bacteriological contaminants and cause flooding

The focus of this note is primarily on safe human excreta disposal, because this is the major transmitter of faecal oral infections which cause diarrhoeal disease, the third most common cause of death of children under five. Safe human excreta disposal is much more than building latrines or water borne sanitation systems, which in quite some cases in fact transfer the problem by polluting for example water sources downstream. It is about cutting the transmission route of disease, creating a sanitary environment and exploring options to reduce both energy cost and the loss of valuable resources.

[1] The main resources for this note are the IRC publications: Enhanced livelihoods through sanitation. By Borba et all (2007); Sanitation for all? by de Bruijne et all (2007); and School sanitation and hygiene education by Snel, M. (2003).

The Bellagio Principles[2] (SANDEC-WSSCC, 2000) indicate for example that waste needs to be managed as close as possible to its source and that waste should be considered as a resource, important in the nutrient flow and waste management process. In this context it is good to realise that particularly urine contains a lot of phosphates and nitrates that can be put to good use.

3. Why is sanitation lower on the agenda than water

Although more attention is gradually being given to sanitation at both policy and implementation levels, it is well known that a much higher concentration of efforts on water supply than on sanitation. Some of the reasons mentioned in Borba et all, (2007) include:

- A discrepancy between the actual demand for improved sanitation in many low-income rural and peri-urban communities and the urgent need to improve the quality of life;
- In many societies, addressing water issues in households is easier than addressing human waste. A conversation on issues related to excreta may be a difficult task, especially when project teams mainly consist of men, while in the household the most interested members may be women.
- The rate of return on water supply is less difficult as even poor communities will more readily pay for water than for sanitation.
- Politicians use water supply in their campaigns, but not sanitation
- Financial resources from governments and the private sector for sanitation and hygiene
- The responsibility for sanitation is not always clear due to institutional fragmentation.

4. Some approaches to sanitation

Conventional approach

Many sanitation systems have been installed through subsidized government, mainly focussing on expanding sewerage systems in urban areas and centres of rural towns and latrines in other areas. Donor and NGO programmes have focused more on large scale latrine programmes sometimes providing full facilities and in other cases just latrine slabs and promotional campaigns. Some programmes have also included a stronger emphasis on hygiene promotion and on school sanitation. The real success rate of many of these programmes seems to be rather limited as many facilities have deteriorated since or are not in use. As a result of this other options are being explored to become more effective. A lot of emphasis in new approaches is on advocacy including group advocacy approaches (e.g. radio listening groups, community health clubs) and social marketing but also on capacity building for community-managed sanitation programmes.

[2] SANDEC-WSSCC (2000) Summary Report of Bellagio Consultation, Dübendorf, Switzerland www.sandec.ch

Community-led Total Sanitation

An interesting approach to improve sanitation delivery is the Community-led Total Sanitation (CLTS) approach, pioneered in Bangladesh in 1999 and since spread to several other countries in Asia and Africa. It focuses on human excreta, although solid waste and drainage and water points are also somewhat addressed. CLTS involves facilitating a process to inspire and empower rural communities to stop open defecation and to build and use latrines, without offering external subsidies to purchase hardware such as pans and pipes. Through the use of PRA [Participatory Rural Appraisal] methods, community members analyse their own sanitation profile including the extent of open defecation and the spread of faecal-oral contamination that detrimentally affects every one of them. The CLTS approach ignites a sense of disgust and shame amongst the community. They collectively realise the terrible impact of open defecation: that they quite literally will be ingesting one another's 'shit' as long as open defecation continues. This realisation mobilises them into initiating collective local action to improve the sanitation situation in the community.

Ecological sanitation

A more contentious approach is ecological sanitation, generally shortened to eco-sanitation, or to ecosan. It is based on three fundamental principles: preventing pollution rather than attempting to control it afterwards, sanitising urine and faeces, and recycling the safe products that result from this for agricultural purposes.

This cycle is a sustainable, closed-loop system. It treats human excreta as a resource. Urine and faeces are stored and processed on site and then, if necessary, further processed off site until they are free of disease organisms.

In principle, eco-sanitation is highly attractive: the concept of treating household waste as a resource and so fulfil a significant proportion of agriculture's increasing demand for nutrients scores high on the environmental and economic fronts. Its practical application has less universal appeal: the human interventions needed in separating and handling urine, faeces and household wastewater ("greywater") give eco-sanitation's growing number of advocates a challenge to promote the concept and to find innovative solutions.

In China a very positive example of Ecosan exists. A small pilot project supported by Sida and UNICEF was initiated in a village in Guangxi province. Five years later, more than 100,000 households in the province have installed ecosan toilets.

School sanitation

School Sanitation and Hygiene Education (SSHE) is based on the premise that children have a right to basic facilities such as school toilets, safe drinking water, clean surroundings and information on hygiene. If these conditions are created, children come to school, enjoy learning, learn better and take back to their families concepts and practices on sanitation and hygiene. In this way, investment in education is more productive. Such conditions have an even greater positive outcome for girls who often stay way from or drop out of schools which do not have toilet facilities.

SSHE refers to the combination of hardware and software components that are necessary to produce a healthy school environment and to develop or support safe hygiene

behaviours. The hardware components include drinking water, hand washing and excreta disposal, plus solid waste disposal facilities in and around the school compound. The software components are the activities that promote conditions at school and practices of school staff and children that help to prevent water and sanitation-related diseases and parasites[3].

5. Important aspects of sanitation programmes

A range of sanitation programmes exist and each programme will have its specific objectives (see example in box 1).

Box 1. Example objectives for a sanitation programme:

- *Create/enhance awareness on the value of good sanitation*
- Achieve agreement on the possible components of sanitation improvement
- Identify major promoting and limiting factors for good sanitation at household, community and support levels
- Introduce a range of approaches to household and community sanitation improvement programmes
- Assess sustainability aspects of improved sanitation at technology, behaviour and programme levels
- Determine implications for capacity building and support

Whereas objectives may differ, a number of aspects need to be taken into account in creating more successful sanitation programmes: time frame, demand management, technology selection, cost, and follow-up.

- **Time frame**
  Developing sanitation programmes requires a considerable period of time. Particularly demand stimulation and organizing the workforce requires time before mass construction can take place. Also strengthening of the necessary sustained behavioural change needed to ensure health benefits, requires a longer time horizon.

- **Demand management**
  Sanitation is, to a large extent, a social phenomenon, rather than a technical one. Demand stimulation and its associated activities - mobilisation, marketing, education and participation - therefore are crucial issues.

  Demand may be latent and not fully expressed or may be constraint because facilities are not affordable. Women may be willing to develop new hygiene practices including reorganisation of domestic habits and routines, provided men are also informed and are supportive. Different ideas exist about ways to increase (expressed) demand for sanitation. Some focus on social marketing whereas others adopt a strategy of community development or health promotion. In practice, most

[3] UNICEF and IRC, 1998. Towards Better Programming- A manual on school sanitation and hygiene. Guidelines Series. New York. http:www.irc.nl/sshe/resources/ch_intro.html

interventions use several channels and approaches. They try to determine, for each particular situation, an effective mix of marketing, promotion and education strategies, including interpersonal communication.

- **Technology selection**
  A wide choice of technologies for low-cost sanitation exists including options such as simple pit latrines, sanplat with pit, Ventilated Improved Pits (VIP), double-pit, pour-flush, composting latrine, small bore systems, ecological toilets, mechanical flush and septic tanks. These technologies may be used in private facilities as well as in public (pay and use) systems and in schools. However even the so-called low-cost technologies still appear to be too costly for poor households (WHO/UNICEF Joint Monitoring Programme, 2000). Hence further innovation is important including exploring better technologies for high water table areas and mechanical pit-emptying.

- **Costs**
  Cost of sanitation programmes and facilities show considerable variation depending on the design, the material used and strategies to control costs. The latter refers to providing an adequate product at the lowest price. Few programmes seem to focus on keeping cost down. These may adopt competitive bidding, the use of local materials for construction (allocating part of the construction to the household), strong financial monitoring and auditing, and close attention to information, transparency and accountability to prevent and reduce corruption. A key issue is to assure that all sections of the public have free access of information about costs and prices (for materials, construction wages and piecework costs).

- **Subsidies**
  Many programmes offer subsidies to make sanitation more accessible to poor households. This may include providing support to contractors, subsidising latrine parts, direct subsidies to households, revolving loan schemes, cross subsidies, or simply free community mobilisation and hygiene education. The impact and efficiency of these approaches needs further review including an assessment if they really reach the poorest households, as the call to reduce subsidies is growing.

  Reducing the cost and stimulating demand may be more effective than providing support in cash or free parts for a wide audience. Yet there is the issue of real affordability. Subsidies can be better targeted and transparency increased by using participatory methods such as social mapping to locate better off, intermediate, poor and very poor households and allocating subsidised toilets only to the households in the last group.

- **Follow-up**
  Experience suggests education and hygiene promotion should continue beyond the construction period. This is sometimes overlooked, allowing the initial investment to be degraded through poor maintenance and use, or inconsistent practices and behaviour. Ideally, in the post-construction period, continuous and sustained institutional solutions should gradually develop.

7. Further Reading

If you want to explore these issues in more detail you may wish to access a number of additional titles in the internet (or on your CD-Rom) including:

- Borba, M.L., Smet, J. and Sybesma, C. (2007) *Enhancing livelihoods through sanitation.* IRC Thematic overview paper, IRC, International Water and Sanitation Centre, the Netherlands
  http://www.irc.nl/content/download/126399/338893/file/TOP19_SanLiv_07.pdf
- de Bruijne, G., Geurts, M., and Appleton, B. (2007) *Sanitation for all?* IRC Thematic overview paper. IRC, International Water and Sanitation Centre, the Netherlands
  http://www.irc.nl/content/download/127289/343819/file/TOP20_San_07.pdf
- Eawag (2005). *Household-Centred Environmental Sanitation; Implementing the Bellagio Principles in Urban Environmental Sanitation.* Provisional guideline for decision makers. Dübendorf, Switzerland: Eawag: Swiss Federal Institute of Aquatic Science and Technology. http://www.wsscc.org/pdf/publication/hces.pdf
- Snel, M. (2003) *School sanitation and hygiene education.* IRC Thematic overview paper. IRC, International Water and Sanitation Centre, Delft, the Netherlands
  http://www.irc.nl/content/download/4331/51919/file/sshe.pdf

- Winblad, U., Simpson-Hebert, M. (2004). *Ecological Sanitation-* revised and enlarged edition. Stockholm Environmental Institute.
  http://www.ecosanres.org/pdf_files/Ecological_Sanitation_2004.pdf

8. References

Borba, M.L., Smet, J. and Sybesma, C. (2007) Enhancing livelihoods through sanitation. IRC Thematic overview paper, IRC, International Water and Sanitation Centre, the Netherlands http://www.irc.nl/content/download/126399/338893/file/TOP19_SanLiv_07.pdf

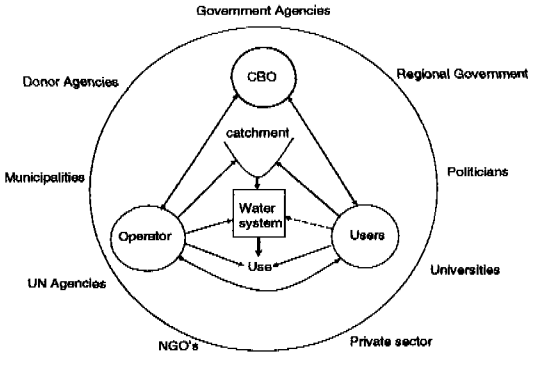
SANDEC-WSSCC (2000) Summary Report of Bellagio Consultation, Dübendorf, Switzerland www.sandec.ch

UNICEF and IRC, 1998. *Towards Better Programming- A manual on school sanitation and hygiene.* Guidelines Series. New York.
http://www.irc.nl/sshe/resources/ch_intro.html

WHO -Geneva, CH; WSSCC -Geneva, CH, Water Supply and Sanitation Collaborative Council; UNICEF -New York, NY, US and WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation -Geneva, CH, JMP (2000). *Global water supply and sanitation assessment 2000 report.* Geneva, Switzerland, World Health Organization (WHO)
http://www.who.int/water_sanitation_health/monitoring/jmp2000.pdf

Actor analysis, gender and equity for Strengthening Governance of WASH Services

Water supply is very complex

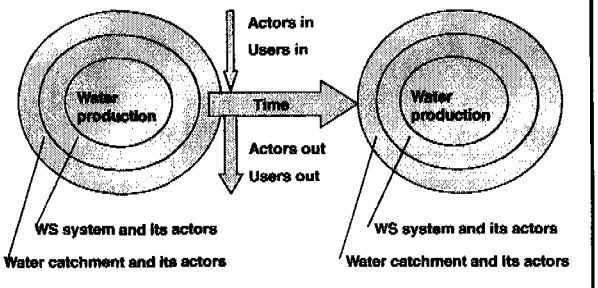


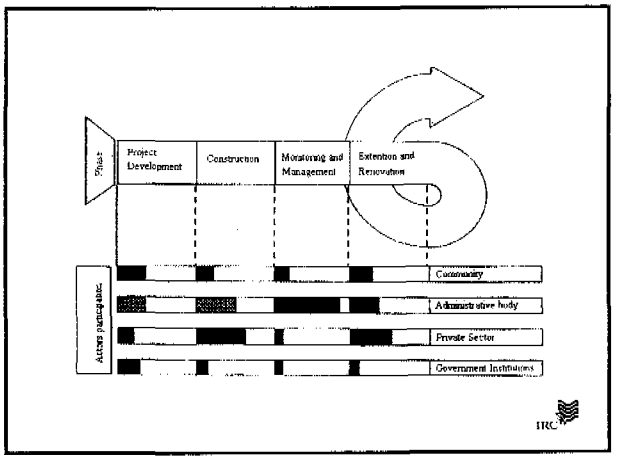
Adding sanitation

Is needed

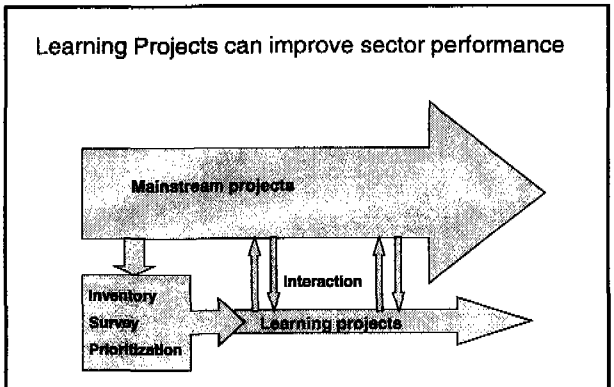
But adds to complexity

Actor network theory





Learning Projects can improve sector performance



Why should we bother about gender and equity?

Poverty, WASH and development (1)

Women have prime responsibility for family health

Women work twice the unpaid time of men

Millions of women spend 1-6 hours a day fetching water

Women lack equal access to water rights and to land

Poverty, WASH and development (2)

Women are principal food producers and providers with increasing role in water management

School attendance days gained due to less diarrhoeal disease if Sanitation MDG is met: 194 million school days

In 45+ countries, fewer than 1 in 4 girls are enrolled in secondary school

Education and literacy are linked to better family welfare, hygiene and health

Gender and men/boys

Difficult to find data on how men are disadvantaged in WASH

Disadvantaged in educational or employment spheres as is the case in some countries, e.g. Mongolia, Jamaica

Disadvantaged by missing out on hygiene education

Men also trapped by gender roles

- rarely given "gender" responsibility
- not expected to care for children

Do you know more examples or encouraging data...?

Poor pay more for water than the rich

A poor family in Manila pays 900 pesos/month for vended water

A family connected to the piped water pays 100 pesos/month

City	Poor pay
Manila	9X
Lagos	10X
Cairo	40X
Jakarta	60X
Karachi	83X

Gender differences in latrine demand (Kerala 1)

Reasons why men construct / not construct latrines	Reasons why women want / construct latrines
I felt the need for a latrine, but thought I could not afford one	*Men can go 'out' at any time to pass* urine or defecate – we have to wait for darkness
I was unaware of low-cost latrines – local masons always mention septic tank latrines which are not affordable	We have to go to the beach or canal for 'outside area defecation' – if one are ill this is a real problem
I always wanted a latrine for my family but suitable technology was not readily available	My grown-up daughter going to college started demanding a latrine

Gender differences in latrine demand (Kerala 2)

Reasons why men construct / not construct latrines	Reasons why women want / construct latrines
New houses have gone up – going in the 'open air' has become difficult	Water committee members insist on cleanliness and use of latrines to prevent diarrhoea and dysentery
I am concerned about the security of my wife and daughter	We went to our future daughter-in-law's house and saw a good latrine
Diarrhoeal disease can be controlled saving money for medicines	Our friends have proper latrines. We are forced to go outside
Having a good latrine increases the value of the property	As women we likely to be teased when we go outside for defecation

Source: Kurup et al., 1996

Myth about gender

Gender is about women and against men !

Reality

SEX

Biological, born with, cannot be changed

GENDER

Socially constructed, can be changed

Reality

Gender is about roles of men and women in society – all societies

Key concepts

Gender is about women and men

- Gender refers to the roles and responsibilities of women and men
- Roles are different
- Roles and expectations are culturally specific
- Roles are often unequal with regard of
  - power and control over decision-making
  - freedom of action

Gender equity

Gender **equity** is the process of being fair to women and men

Women's rights and roles need to be recognised along with those of men

Gender equality

Gender **equality** ensures that women and men enjoy the same status

They control contributions, assets and benefits fairly

Gender and equity

Gender equality is achieved by gender mainstreaming

Making gender concepts and approaches part of all development policies, programmes and processes

Why gender and equity?

A gender and poverty-sensitive approach to water and sanitation leads to greater efficiency, effectiveness and equity

What did we learn?

Gender **equity** is the process of being fair to women and men

Women's roles in water use need to be recognised along with those of men

Gender equity is the process, **gender equality** the result

Gender Mainstreaming

Gender Mainstreaming

Means assessing the implications of any planned action related to water and sanitation for both women and men

This includes

- legislation
- policies
- projects or programmes

How can you include gender and poverty into planning and budgeting?

Data disaggregated by sex

What data do you collect
for better strategies
to address
poverty and gender
in WASH?

Key data needed for planning

Data disaggregated by sex

Coverage of WASH services
Wealth indicators
Health data
Life expectancy
HIV/Aids incidence
School attendance

Data analysis by gender

Gender analysis is
about examining
why
disparities exist,
whether
they are a matter for concern,
and how
they might be addressed

Budgeting

Who gains?
Who loses out?

Sex disaggregated data
and gender analysis
are needed to reveal
the gender impact of
mainstream budget commitments

Some questions for planning and budgeting

1. Are women, gender and access for the poor mentioned in policies and strategies?
2. Have district policies set coverage targets disaggregated for gender/poor households?
3. Do financial strategies enable poor people to afford contributions? (kind, cash, subsidies, etc)
4. Do poor people pay more than the better-off for water?

Gender and equity policy assessment

Are the needs and problems of men and women, and of poor men and women known and addressed?

Are the voices of men and women, especially poor men and women, heard

Do men and women, especially poor men and women, take part in decision-making?

Monitoring gender and equity 1

What do we measure?

How do we know if we have reached our targets set for the poor, for women and men etc?

Measuring Process Results

- Qualitative data can be quantified through scales: this example is on gender equity

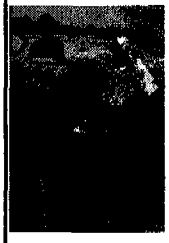
Descriptive scoring options	Scores	Score
Women come, speak and all decisions made jointly with men	100	Score can be between points e.g. 60 (women attend speak, and influence decisions rarely)
Women come, speak & influence 1-2 decisions	75	
Women come, speak but no influence	50	
Women come, but do not speak	25	
Women do not come to meetings	0	

'Who' questions 1

Who makes the decisions?

Who has the information on which decisions are based?

'Who' questions 2



Who does different types of work?

Who is paid for their work?

Who bears the costs and how equitably?

'Who' Questions 3

- Who reaps the benefits?
- Who is most at risk and vulnerable from lack of water?
- Who is most affected by macro-level policies

e.g. water pricing and pricing of agricultural products?

Source: DWAF, South Africa, cited in Gender and Water Development Report 2003 (p47).

Advocacy for Gender Mainstreaming

How do we get support *(political will, budgets)* from our leaders to include gender and equity in programming?

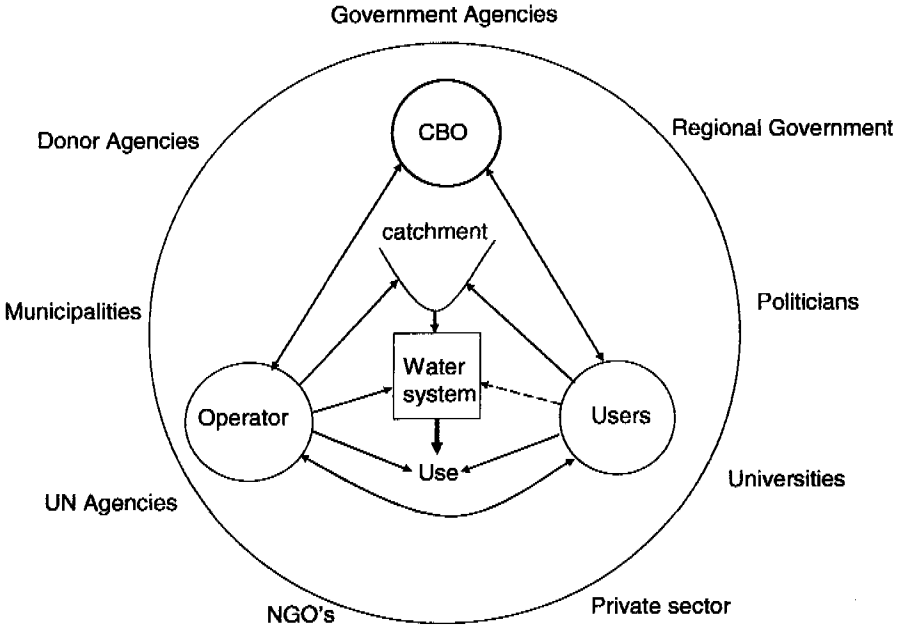
Resource note on actor analysis and gender[1]

By J.T. Visscher, 2008

1. Intrdoduction

Community water supply in the developing world is a "soft system", as defined by Checkland (1989), in that is characterized by a highly complex network of interrelations involving many actors. Water and food are vital for life, but whereas the provision of food is mostly an individual decision, water supply is usually the result of a larger decision-making process, often in the hands of governments, controlled by bureaucratic systems and engineers, and requiring collective action. The providers have a monopoly that brings power, particularly in the urban sector, but also in rural areas. The end users, the ultimate beneficiaries, are not taking the decisions to construct a water supply system. Yet, perhaps unknowingly, they do have influence as they can and do frustrate some of the solutions being established without their participation in decision making. Non-use of new water systems or of imposed sanitary installations like latrines need not stem from technical flaws, but rather from the fact that the intended beneficiaries perceive their benefits as negligible (Vaa, 1990).

An operational and sustainable water supply system results from the interaction of many different actors, who intervene directly or indirectly in its performance (Figure 2).



[1] The main resources used for this note are Facilitating Community Water Supply, from technology transfer to multi stakeholder learning by J.T. Visscher (2006).

Figure 1 The interaction model for a functioning water supply system

The figure indicates the interactions that take place within the community and the support actors outside the community.

2. The main actors

2.1 Actors at community level

The users

This is a diverse set of actors – men, women and children – who may, knowingly or unknowingly, strongly interfere with the water system. Their interference can involve a range of activities that are usually not addressed in a comprehensive way. They can, for instance, leave their tap open and so consume more water than the average consumption level that has been used to design the system. If the system is not designed for this higher consumption, other users in higher parts of the distribution system may experience low water pressure or not receive water at all.

Some users may not pay for the water, and for the poorest of the poor this may be the only option they have. Subsidizing part of the population is feasible, but should be agreed upon in advance to establish the proper tariff. It is not uncommon to find a large number of people with a significant payment backlog. The result is that water revenue is not sufficient to ensure adequate preventive maintenance of the system.

Users sometimes put pressure on the operator to provide more water, for example, to wash their coffee beans, or simply to provide more reliable supplies for those who live in higher areas. The operator may 'give in' and provide more water, particularly if the social pressure is high. The result may then be that the water treatment system cannot cope with the larger volume of water and starts to perform inadequately. In extreme cases the operator has been known to by-pass the treatment system and supply untreated water to the community.

Community members may also ask the operator to add new connections, or sometimes they make 'illegal' connections themselves. This can interfere with the pressure distribution in the system if it is not done with expert knowledge.

Political cycles often have harmful effects on the sustainability of water systems. A change in political leadership in a community implies in a fair number of countries that the earlier administration is abandoned in favour of new political appointees. This may result also in replacement of the (paid) operator of the water system by a new (often untrained) one.

The water committee

Many hand-pump schemes and piped water systems are managed by water committees or similar types of community-based organizations (CBOs). Whereas these committees may have received some kind of training, this often does not include management tasks. The CBOs, or water committees, may have very different origins, but often they are established by project implementing organizations. They may be elected or may just be formed by individuals willing to take part in them. The composition of these committees can be very

different and may sometimes be reasonably representative, but most of the time interest groups play an important role.

Gender balance is often not well addressed in these committees. This is unfortunate, because the better sustained and used services often have more women members in the committee and, according to other women, both rich and poor, the women committee members are indeed having an influence (Wijk, 2001).

The CBO is the link to outside organizations. In theory this creates a broad network, but in practice the interaction is very limited. So the bottom line is that community members participating in the CBO, with little or no experience or training in the management of a water supply system, are responsible for it and have to orient the operator in his/her job.

The operator

Water system operators are crucial to sustain the systems, but their role is under-rated in the sector and under-represented in decision making. It is interesting to note that community members value academic knowledge and look up to engineers and other government staff, but, in common with most engineers, they often look down on the operator of a water supply system. They do not realize that the operator actually is the most important person as he or she (although female operators are very rare) is safeguarding the lives of his/her fellow community members on a daily basis. Even a perfectly designed water treatment plant is useless if the operator does not look after it properly. System design therefore needs to facilitate the operator's task as much as possible. In some schemes, the job of the operator or caretaker is rather broad and includes not only the operation and maintenance of the system but also tap repair, relations with users and collection of funds.

The operator can have a great deal of interaction with users, as the job may go beyond technical management of the system and include collection of tariffs.

2.2 The external actors

A range of external actors may intervene in community water supply, particularly in the design and construction stage. This includes government staff, NGOs and private sector organizations. Government staff often sets the rules, establishes the control institutions, channels funding and tends to be involved in construction. This has changed somewhat as a result of structural adjustment, but they still have an important impact as they make the rules, often together with, or oriented by, staff from development banks (World Bank, Inter-American Development Bank, etc.) or donor agencies. Many of them have a technical background and come from urban areas. Because of their training and their background, they apply an urban perspective to the local setting to establish what they perceive to be the problem and the solution. They often share a 'culture', a set of common values, with other agency staff and higher-level politicians and administrators. "The key element of this culture is generalizing about consumers, intended beneficiaries, in a way that makes them objects of intervention instead of partners in development. Poor people in remote communities are seen not only as lacking material goods and adequate institutions, but fundamentally lacking insight about what is best for them and how to go about achieving it. Their belief systems are seen as unscientific and anti-modern, their values and practices are exotic and constitute barriers to rational problem-solving. To change this way of thinking would imply no less than a professional revolution, where reliance on knowledge acquired

in schools and universities would be replaced by a willingness to "learn from below" and by seeing people's perceptions, values and practices as resources rather than barriers (Chambers, 1985).

With its changing role, central government in many countries has passed responsibility for water supply to local government, whilst keeping responsibility for supervision through regulatory bodies and water quality monitoring. This change brings the responsibility closer to the community, but the available capacity of local government – often small municipalities – is limited and they do not have the human or financial resources to seek adequate advice.

Another important group of agency staff are health promoters and community-development workers, who often form the link between the agency and the community. Many of these staff members are used to bring messages to the community. With diminishing inputs from the government, their role is changing more to monitoring and their other tasks are taken over by staff from NGOs.

NGOs are a mixed group of organizations, often having a "social" mission to assist the poorer sections of society in their struggle for life. Most national NGOs are small and cover a limited geographical area. A variety of NGOs also exist at international level. Many are rather small, but some, such as CARE International, Plan International and Action Aid, are organizations with large networks and operate in many different countries. NGOs often have a closer link with communities than government agencies; they are present for longer-term activities and are more inclined to apply participatory methods. Many still have a tendency to provide the communities with solutions, albeit sometimes with perceptions that are closer to community reality. Staff members of these organizations are usually more dedicated, not least because they often get somewhat better and more regular pay than government staff.

The private sector is a relatively new player in community water supply (except for local water vendors, who often sell water of dubious quality to consumers and local contractors). Private firms have a long track record in urban water supply, but are less attracted to rural water supply because of the smaller rate of return. Exceptions are the construction of water systems and particularly the selling of 'package plants'.

2.3 Roles change over time

There is a big range of situations in developing countries, each characterized by different levels of interaction among the key actors involved. Figure 3 presents a schematic model of the key actor groups involved in different stages of a community water supply system. The roles and realities will not only be different in different countries and even within countries, but also will differ over time. So the levels of involvement marked in Figure 3 are only illustrative.

The figure helps us to appreciate the changes and is a good indication of the need to analyze the real situation and to recollect that the process of providing safe water supply does not stop when the system is constructed. Over time, the number of people that depend on the system will change and the quality of some of its parts will deteriorate – as may also happen with the water source. Also, progressive improvements in the technology supported by economic development change quality and quantity criteria and may require adjustments

in the systems. It follows that one intervention often will not suffice to build and sustain a system and it is good value for money to invest in capacity building in a community.

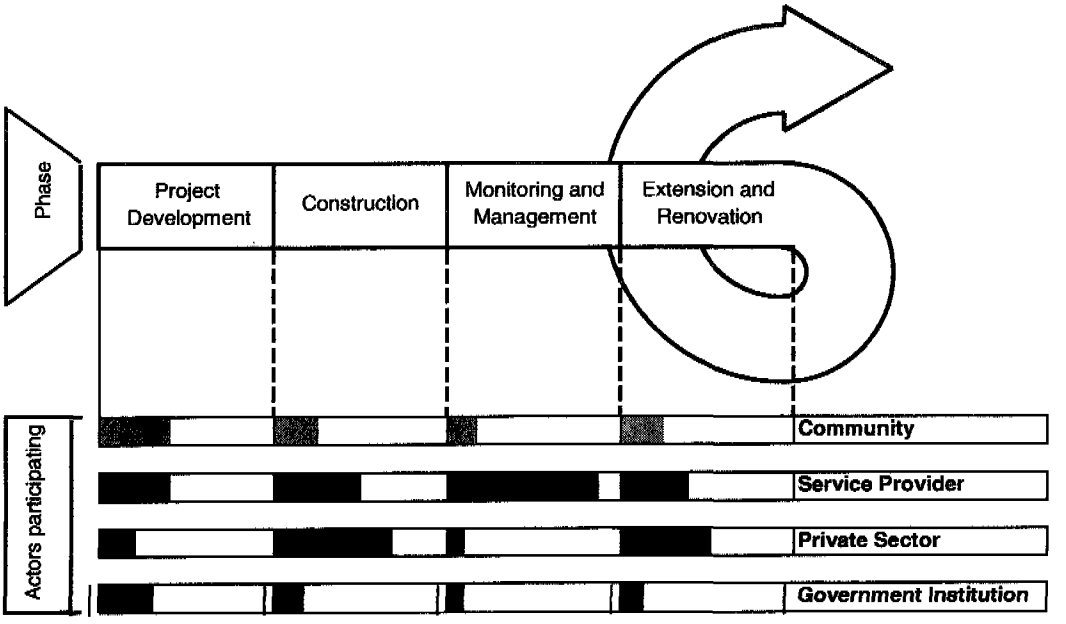


Figure 2 An example of possible distribution of inputs between different actors

In many countries we see that the role of the external agencies strongly diminishes when construction is over. CBOs and the communities are pretty much left to themselves. "Some communities may alone bear the full responsibility for managing their water supplies, many will not. Community management can not mean that, following the installation of a system, the outside agency drives off in the sunset and everyone lives happily ever after. Indeed, a comprehensive and effective framework for institutional support is needed if we want to keep the systems working after 'handing over'. The efforts and capacities of communities are crucial, but they must be supplemented with the efforts and capacities of governments, support agencies, NGOs and the private sector. Together, they can create a rural water supply service in which each stakeholder takes its share of responsibility in an institutional framework that addresses all the functions needed to provide water to rural people, including policy making, regulation, legislation, taxation and price policy, planning and construction, technical support, operation and maintenance" (Schouten et al., 2003).

3. Who takes the decisions?

With so many actors, the sector is characterized by different groups that all may influence decision making. The most important are:

- Policy makers at national level setting the boundaries for sector interventions, often together with staff from donor agencies and/or development banks;
- Agency staff and especially engineers who may be quite conservative and sometimes favour certain approaches because of educational background or political links;
- Community representatives (mayors, women groups, political rivals etc.) and
- Users

In large development projects, decisions are usually made by the funding agency in collaboration with central or regional authorities. Often these projects rely heavily on external consultancy firms and even suppliers of technology. They may be guided in their decisions by a framework of longer-term sector plans and decide on the service level, the choice of technology and methodology, the financial support and the required inputs from the community. Thus, in this type of project most decisions are still made for the users. Wijk (2001) indicates that this situation is changing in different projects in that more time is taken for the planning of projects and preparation is now more participatory, flexible and gender and poverty-sensitive. Yet she also indicates that this is only a partial change, with many of the characteristics of agency projects remaining unchanged.

With more funding being channelled through local government, decision-making processes change. Local governments may still have to live by the rules set by their national governments or by funding organizations, but they have more freedom when it comes, for example, to technology selection. This may seem positive, as they are closer to the community, but often there are political strings attached that may colour their decision making. Or they may be influenced, for example, by private-sector actors who want to sell package plants that do not necessarily solve the local problem.

In the case of NGO projects, the community appears to have a larger influence in decision making, but this too depends very much on the NGO and the perception of its staff. Some have the same characteristics as government staff and hence leave less room for community involvement. Also it may be relatively easy to manipulate decision making, as not all members of the community may have equal access to the necessary information to make informed decisions.

What is clear at the end of the line is that the user has 'veto power' over use. Users ultimately decide whether they will use a new system (provided that they have an alternative water source). Because of the trend to ask users to pay for the water, the users acquire a larger say. When they are paying, it is easier for them to claim their 'right' to be involved in decision making. On the other hand, as mentioned earlier, payment is not a panacea, and exceptions may have to be made for the poorest sections in the community. This can best be done in consultation with the community, as the local population often is well aware of the people involved and their needs.

4. Gender aspects

It is increasingly recognized that gender sensitive approaches are crucial for the sustainability and use of water supply and sanitation services. Here we just will highlight a few issues that among others are being based on the work of the Gender and Water Alliance (http://www.genderandwater.org). For further information we refer to the titles in section 5

Gender and equity

- ***Gender*** refers to the roles and responsibilities of both men and women in a society or culture. A gender approach to WASH analyses the roles and responsibilities of women and men and involves them in designing and planning WASH and in implementing and managing services. This has been demonstrated to improve effectiveness. A gender approach identifies ways to support men and women both by recognising traditional tasks and by supporting changing roles to enhance strategic programmes. For example, services can reduce the amount of time that women spend collecting water, while hygiene promotion focused on men can enable them to support new behaviours within the home. A gender approach can help both men and women to improve incomes in a variety of ways. Gender roles and expectations are culturally specific, but not static. Because they are not determined biologically, but socio-economically and culturally, gender dynamics change over time.

- ***Equity:*** The poorest 10 to 30% of the population systematically miss out on the benefits of water and sanitation programmes. Some groups are especially disadvantaged because they are marginalised within society. There are also critical situations, such as war, conflict, refugee camps and natural disasters when the poorest are most at risk of losing basic services. Approaches that address the needs of the poorest, such as socio-economic mapping and participatory monitoring, are important steps towards equity.

The public sector, private sector, and civil society, all have specific roles to play in the development, implementation and management of water supply and sanitation services. However, without specific gender approaches, and policies and strategies for reaching the poorest in society, these actors including local governance cannot succeed in meeting need and scaling up services. Without achieving these water and sanitation goals then many other goals, including poverty reduction, income generation, reduction in childhood diseases and increases in education are put at risk. Gender and equity approaches are therefore at the core of successful local governance.

Gender equity is the process of being fair to women and men. To ensure fairness, measures must often be available to compensate for historical and social disadvantages. Women's roles in water and land use and management need to be recognized along with those of men. Gender equity is the process, gender equality the result. In terms of WASH services,

Gender equality means that women and men share contributions, control, assets and benefits equitably and fairly.

A key process is **gender mainstreaming**, making gender concepts and approaches a part of all policies, programmes and processes in WASH and assessing the implications for women and men of any planned action. Gender analysis is a systematic way of looking at the different roles of women and men and the different impacts of actions on women and men. Gender analysis means that data are disaggregated and analyzed separately by sex. Mainstreaming gender issues means raising the capacity of many organisations and individuals, and this will require gender issues to be included in appropriate budgets.

You can do a lot by being aware of the issues, having knowledge about gender and gender relations, having a positive attitude to reducing gender inequalities and being creative in seeking low-cost, culturally acceptable solutions to problems.

Discussing problems and possible solutions with groups helps. Often, people are so used to their situations that they are not aware of gender inequalities until someone else helps bring them out. Practical measures can be taken that require awareness and good communication and planning skills, rather than a lot of extra time, money and human resources.

Information can be spread to women and men along channels and in forms that are adjusted to their different situations and interests. Meetings can be held at times and locations that are convenient to women and men, adjusting these to meet the needs especially of poor women and men.

Active participation of women in discussions and decisions is easier when:

- women are invited and their participation is encouraged,
- they can sit together in a place from where they can hear and see as well as men,
- discussion is in the vernacular and any outside information is translated,
- women (and men) get time to discuss the information during breaks,
- women can choose a spokeswoman for whom it is culturally acceptable to speak out, etc.
- women can meet with the team for some time prior to the start of the meeting,
- participatory methods are used for situation inventory, analysis and decision making, e.g., pocket and matrix voting, picture card sorting, welfare ranking, etc.,
- gender (and poverty) conscious facilitation of participatory methods is introduced.

Women and men can be enabled to make independent and informed choices about who (women and men) will deal with local planning, implementation and management of sanitation and hygiene improvements. Making informed choices means knowing about responsibilities, rights, authority and tasks, and about the amount of work, knowledge, skills, training and compensation involved.

Both sexes can make informed choices about local technology and design, location, financing and implementation, including making choices about cross-subsidies and about the scale of work needed for maintenance, hygiene tasks and quality control. Scale models have proven useful in raising understanding of what is involved.

5. Further reading

If you want to explore these issues in more detail you may wish to access a number of additional titles in the internet (or on your cdRom) including:

- Visscher J.T. (2006) *Facilitating Community Water Supply, from technology transfer to multi stakeholder learning.* IRC, International Water and Sanitation Centre, the Netherlands http://www.irc.nl/content/download/25104/278851/file/TP46_FacilitatingCWS.pdf
- Bolt E., Fonseca C. *Keep It Working: a field manual to support community management of rural water supply.* IRC Technical Paper Series 36; IRC, International Water and Sanitation Centre, the Netherlands http://www.irc.nl/content/download/2602/27266/file/TP36_KeepItWorking.pdf
- *Schouten, T., Moriarty P.; Scaling up the community management of rural water supply* Waterlines, Volume 23, Number 2, October 2004 , pp. 2-4(3) Publisher: Practical Action Publishing Authors: http://practicalactionpublishing.org/?id=waterlines_23-2
- Van Wijk-Sijbesma, C. (1995) *Gender in Community Water Supply, Sanitation and Water Resource Protection, a guide to methods and techniques* Ocassional Paper Series No 23 http://www.irc.nl/content/download/2562/26426/file/op23e.pdf
- Sustainable development of water resources, water supply, and environmental sanitation; Women, well-being, work, waste and sanitation. Snel, M and Jayaweera, 2006. Paper presented at the 32 WEDC conference http://wedc.lboro.ac.uk/conferences/pdfs/32/Snel.pdf
- The Gender and Water Alliance http://www.genderandwater.org

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Chambers, R. (1985). Shortcut methods for gathering social information for rural development projects: In Cernea, M. (ed.) *Putting people first : Sociological variables in rural development.* (pp. 399-415). New York: Oxford University Press.

Checkland, P.B. (1989). *Soft systems methodology.* In Rosenhaead, J. (ed.). *Rational analysis for a problematic world.* (pp. 71-100). Chichester: John Wiley & Sons.

Schouten, T.; Postma, L. and Moriarty, P. (2003). *'Scaling-up community management'*. In: WEDC -Loughborough, GB and WEDC Conference -29 (meeting document) (2004). Towards the millennium development goals - actions for water and environmental sanitation : preprints of the 29th WEDC conference, Abuja, Nigeria, 2003. Loughborough, UK, WEDC, Loughborough University of Technology .Schouten et al., (2003)

Vaa, M. (1990). *Choice of technology in development organisations in water and sanitation projects, 6th General Conference of the European Association of Development Research and Training Institutes, 27-30 June, Oslo, Norway*. Bonn: EADI.

Visscher, J.T., Quiroga, E., García, M., Benavides, A., Valencia, A. and Segura, A. (1996b). *Informe del taller de recuperación de experiencias*, Cali, Marzo 6-8, 1996. Cali: *CINARA* and IRC International Water and Sanitation Centre.

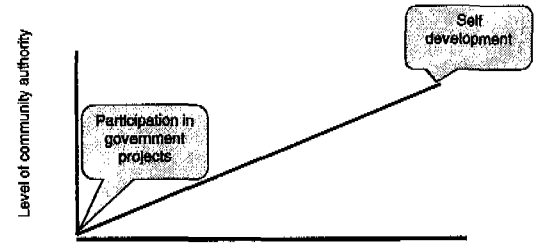
Wijk-Sijbesma, C.A. van (2001). *The best of two worlds? : methodology for participatory assessment of community water services*. Technical paper series / IRC; no. 38). Delft, The Netherlands, IRC International Water and Sanitation Centre

Day 2 + 3

Community management

June, 2008

Community participation



Buzz group:

What is a community?

Please define some of the key characteristics of a community

A community is a group of persons:

- Living in an area they share
- With their own desires and interests
- With different problems and opportunities
- With shared and conflicting interests
- Often divided in sub-groups
- With own and shared resources
- With a form of organization
- With different leaders
- Supported by different institutions

What are common groups in communities

Please define several types of groups that you may find in a community

Common groups in communities

Families

Sex (Man and women)

Economic (Poor, normal and rich)

Power (Leaders, political parties)

Age (young people, adults, old people)

Attitude (participatory, reserved, difficult)

A community is

A group of persons with their own desires and interests and perhaps not so much in common.

Interest may differ considerably between men and women, rich and poor etc.

What is community management

A combination of community and management

Actors involved need to learn about the system and the implications of its management.

This involves relationships between different actors users, private sector and government

Community management implies that:

The community is in charge of strategic decision making about how the system is managed, rules and procedures, service levels, tariffs etc. – *control through the water committee*

The operation and management of the system, e.g. the day-to-day provision of the water, can be done by anybody - community volunteers, paid staff or private sector

Why is community management important?

Because governments are not able to manage the large number of small water supply systems. These systems require social control and a feeling of ownership of the communities they serve

System management

Community managed systems with volunteers

Community managed systems with paid staff

Public utility managed systems

Private sector managed systems

Lets explore some of the strengths and weaknesses

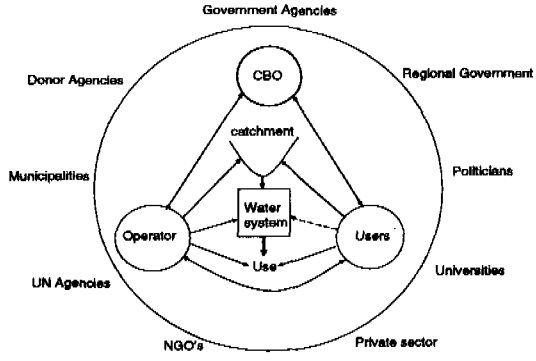
Key Roles

Operation and maintenance (by the water provider including internal control)

Monitoring and supervision (Control by community body)

Surveillance (Safeguarding the overall performance by external checks and balances)

Water supply is very complex



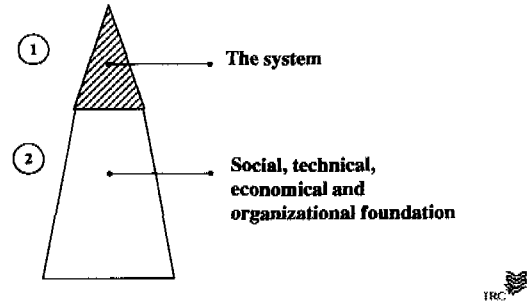
How is community management usually implemented?

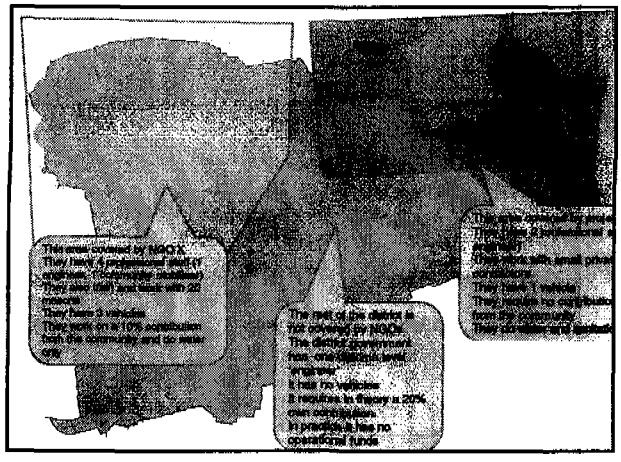
- Through project delivery, not service delivery
- Projects bound in time (3 years) and space (individual villages, mostly the easy ones)
- By (International) NGOs: construction + training
- By many different agencies all using their own technologies and approaches
- After handover to community: agency does not come back

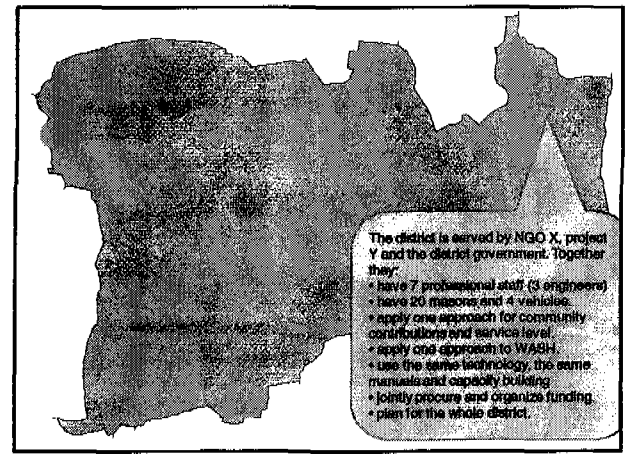
Exercise for buzz groups

- What are the constraints of community management?

Community management needs to be founded in the local context and legislation







What needs to change?

- Look beyond project implementation and focus on sustained service delivery
- Look beyond the single (easy) community
- Establish clear sharing of responsibilities clarifying the role of the community, the service provider and the regional and national government

Stake holder participation

Stake holder participation

Recognizes diversity and multiple realities

Creates a shared conceptual framework

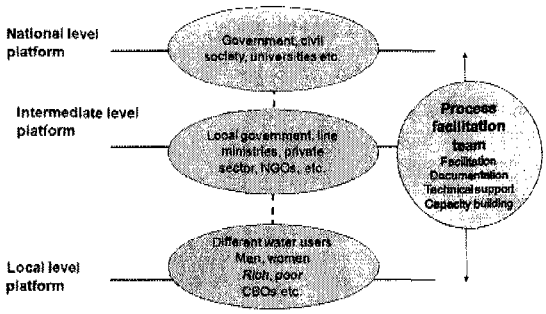
Facilitates innovation

Involves change and resistance to change

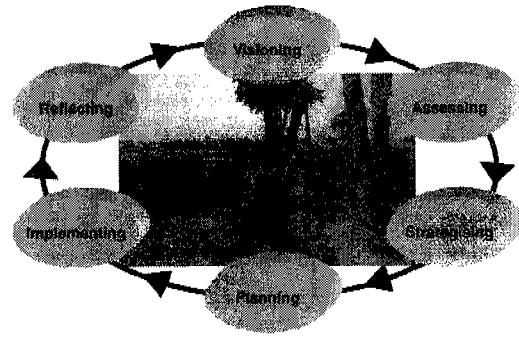
Pools energies and resources

Emphasises inclusion and pro-poor approach

Stakeholders at different levels



Looking at longer term horizon



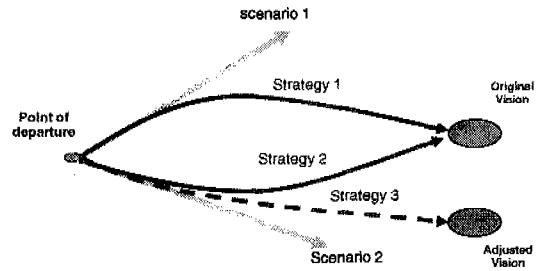
Visioning

The purpose is to arrive at an agreed description of the state of affairs stakeholders want to reach...

... based on a shared analysis of the existing situation,

The vision should be:
Specific
Measurable
Achievable
Realistic
Time bound

Vision, scenarios and strategies



Enabling environment for Water Supply Services

June, 2008

Functions in WS services

Management
Operation and maintenance
Financing
Repairs (+ purchase of spare parts)
Monitoring
Surveillance
Extension of the supply

Some problems

- Failure to generate sufficient tariff income
- Failure to account transparently for funds
- Lack of preventive maintenance
- Lack of capacity (technical, managerial, financial etc)
- Lack of community cohesion
- Political or social conflict

External Constraints

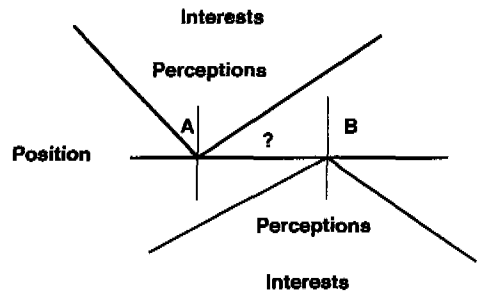
- Political interference in planning and resource allocation
- Poor system design and poor quality of implementation (poor construction, lack of community mobilisation)
- Lack of spare parts
- Lack of supportive policies and legislation
- No support for repairs extension/upgrading
- No support for conflict management

Community based systems

include a number of tasks that are beyond the community level

Require external support to ensure that they provide a sustained service level

Conflict management



Types of interests

Common interests

Indifferent interests

Conflicting interests

Emotions

Support to rural community based service providers entails

- Supporting the external components of the full service delivery cycle related to construction, community mobilisation, O&M, upgrading, extension and replacement
- Ensuring that the authority function to overview the service provider is well established
- Water surveillance

Support at system level

Support areas:

- Technical support related to technology and service level
- Administrative and financial support
- Legal support
- Organisation and management support
- Sanitation and health related support
- Environmental support

Support at system level

Support roles:

- Technical assistance
- Training
- Monitoring
- Coordination and facilitation

Support at system level

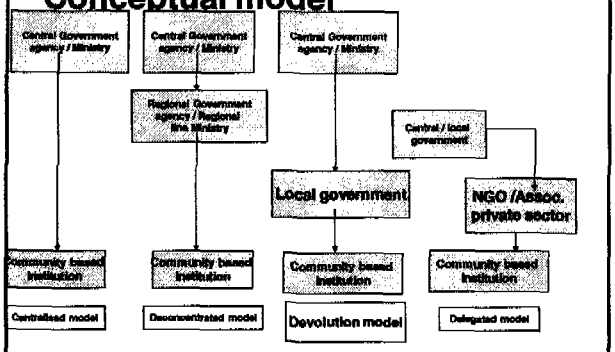
Direct support from

- "Circuit rider" or promoter
- *Woman or man on a motorcycle*
- Equivalent to extension worker for farmers
- Trusted friend
- Mediator
- Technical advisor

Principles of support

- Support complements the tasks of community based service providers
- Support must be flexible
- Support is needed both pre-construction and post-construction
- Support can be demand driven
  (requested by the community institution)
  or supply driven
  (initiated by the support institution)

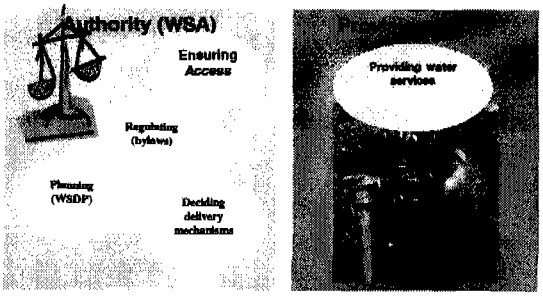
Conceptual model



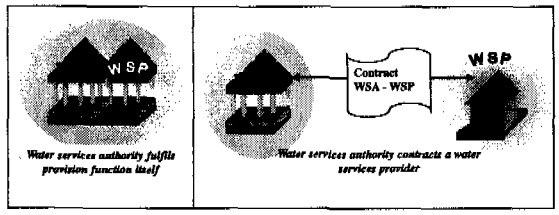
South Africa model

- Water Services Authority (WSA) (local government)
  - Ensures access to water services
  - Makes by-laws
  - Prepares a water services development plan
- Water Services Provider (WSP):
  - Provision of water supply service: O&M, collecting revenue, administrative & financial management etc.
  - Can be a municipality (WSA), a private contractor or a community based organization (CBO)
- Support Services Agent (SSA)
  - Provides support to WSA and/or WSP

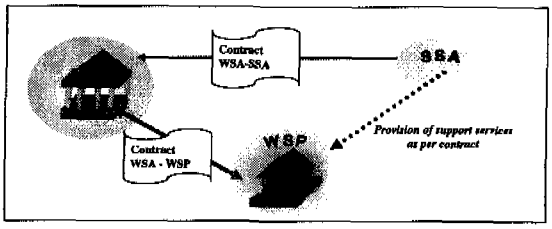
South Africa model



South Africa model



South Africa model



Water Services Provider could be a CBO

Support service agent (SSA)

- Is contracted by the WSA to provide (part of) the following support services:
  - Mentoring of institutional and social development
  - Mentoring operations (technical)
  - Carry out major maintenance
  - Pit emptying for ventilated improved pit (VIP) latrines
  - Bulk purchasing

Colombia model

Background

- Community institutions (water committees) manage 90% of water and sanitation services in rural areas
- Local government provides limited support to community institutions (biased towards urban centres)
- There are frameworks for policy, legislation, regulation etc.

Colombia model

Aquacol

- Association of 33 CBOs managing water in 100 communities serving 16,000 people
- Most are piped networks
- 80% of CBOs have legal status: cooperative, association of users

Colombia model

Main objectives

- Mutual learning and cooperation
- Influence public policy
- Defend common interests
- Reduced O&M costs through economies of scale (bulk purchase of supplies and specialized services)
- Preparation and submission of larger projects

Colombia model

Aquacol Community Learning Centres

- Peer training based on shared understanding and interests and good practice
- Three Community Training Centers are now part of Aquacol. Each with shared as well as specific areas of excellence including:
  - Efficient financial management, operation of pumping facilities, micro catchment management, efficient water use, water quality control, chemical and biological treatment, water metering etc.

USA model

Background

- Water governance decentralized
- 54,000 community water systems, 85% of which serve populations less than 3,300 people
- Communities implement and manage services
- In 1960 Government set up a support system for community institutions to access information, technical assistance, financing

USA model

Two front line technical assistance organisations

1. NGO Rural Community Assistance Programme (RCAP) focuses on financial & managerial capacity development at community level and support to:
   - access funding
   - set up management structures
   - comply with rules and regulations
   - channel best practices and information to communities
   - support business planning
   - help resolve disputes
   - work with the private sector involved in implementation

USA model

2. National Rural Water Association (NRWA) provides specific technical support services to water operators
   - NRWA receives significant resources from federal budgets to provide TA services to small, disadvantaged water systems
   - NRWA is a membership organisation – services include corporate discounts on purchase items, legislative updates, education and training
   - NRWA now has more than 24,000 small municipal water system operators in membership

USA model

- Federal agencies provide training materials for communities on best practice and compliance with rules and regulations
- The National Environmental Services Center (NESC), also funded by federal agencies, offers:
  - A training centre for communities smaller than 10,000 inhabitants covering wastewater, drinking water, solid waste
  - The National Drinking Water Clearinghouse (NDWC) to help small communities by collecting, developing, and providing information relevant to drinking water issues

USA model

- University-based Technology Assistance Centers (TACs) provide technical innovations and training materials for community water systems
- NGOs have been designated to deliver services to populations with special needs and concerns
- A special programme supports American Indian nation water systems operated by the National Tribal Environmental Council (NTEC)

Support beyond system level

An enabling environment is needed not only for those that provide support for the community institution, but also for the community institution itself

- Recognition, regulation
- Policy frameworks
- Legal frameworks
- Financing
- Sustaining the technology
- Monitoring
- Sustainable water resources
- Coordination and learning

Recognition, regulation

- **Recognition**: formal legal recognition of community service providers and their right to provide services
- **Dialogue**: dialogue at decentralised levels between government and civil society groups
  particularly representatives of community based service providers
- **Collaboration**: longer term agreements between government and community based service providers
- **Contracting**: long-term service provision contracts with adequate incentives for community based providers
- **Regulation**: minimum service quality, performance of community service provider; support for self-regulation; informing and empowering consumers; information

Policy frameworks

- Policy defining the roles, responsibilities, rights and obligations of community service providers
- Policy defining the roles of the support agency vis-à-vis community service providers
- Policy stipulating norms and standards for water supply provision
  - e.g. O&M, cost recovery, technology choice, water quality, supply chains and support mechanisms for community service
- Policy to standardise approaches and operations for coordination and harmonisation and effective support
  - When every project uses its own approach, confusion reigns

Legal frameworks

- Who owns the system? Who owns the water source? What is the legal status of by-laws?
- Water committees are often not recognised as legal entities
- Legal status gives community service providers recognition and credibility, and creates a greater sense of ownership and willingness to invest in system maintenance

Sustaining the technology

Spare part supply problems (as identified in Ghana)

- Failure to attract private entrepreneurs to sell spare parts at tail end of distribution chain – i.e. in the districts
- *Problems in collecting revenue from the community*
- Politicians giving the wrong signals
- Most hand pumps have a lifespan of only five years before they start showing problems
- Some donor projects still provide spare parts free – increasing dependency culture
- Lack of regulation leads to spare parts of inferior quality being used because they are cheaper

Sustaining the technology

Standardization

- Many governments have policy of standardization, but...
- *International donors still promote products of* their own domestic industry
- Agencies still import technology that deviates from standards and lessons learnt
- Choice of technology should reflect user demand and maintenance requirements

Sustaining the technology

Supervision: there is a need to monitor

- Manufacturing industry
- Repairs
- Design of water systems
- Quality of construction of systems
- Tendering and procurement procedures
- Compliance to policy and law, standards and norms

Coordination, learning, dialogue

Sector coordination and harmonization

- Impossible to deliver sustainable support to community institutions under conditions where:
  - 10-50-80 agencies work in rural water supply in one country
  - Lack of coordination, harmonization of approaches, or joint planning
  - Lack of leadership from government

Coordination, learning, dialogue

Systematic learning needed to

- Improve approaches jointly
- Bridge communication gaps between agencies
- Especially needed at lower operational levels

Coordination, learning, dialogue

Advocacy needed

- To reverse governmental and donor preference for infrastructure construction over support and sustainability
- To check political interference
- To strengthen civil society (community institutions)

Sustaining the technology

Trained area mechanics

- Area mechanics keep fast moving spares in stock and support community service providers to procure slow moving parts

but

- Trained mechanics tend to migrate out of the area to find better job opportunities

Sustaining the technology

Appropriate technology

- Simple
- Affordable
- Accepted
- Manufactured locally
- Spare parts available and manufactured locally

Case study: Rope pump in Nicaragua succeeds because it is simple and cheap, is produced and maintained locally and is sustained without, or with very little, government or donor intervention

Monitoring framework

Objectives of monitoring

- Monitoring should allow for immediate decision making at local level and support level
- Results should feed regional and national management information systems for analysis, and for long-term planning and investment

Coordination, learning, dialogue

Dialogue needed

- Between government and private sector
- Between government and (associations of) community institutions
- Between (local and international) NGOs and government

Support at system level

Thematic areas / Roles and functions	Technology	Administrative and financial	Legal support	Organization and management	Sensitization and health	Environment
Technical assistance	Give assistance in the design, maintenance, repairs, system expansion, upgrading	Check of accounts by auditor Accounting Assist in the calculation of water tariffs	Advise the community on legal issues and norms and standards	Arbitration and conflict management Advice in the (re) constitution of the water committee	Assist in the implementation of latrines	Advice on water source protection Assist in rehabilitation of micro-watershed
Training	O&M training for caretakers	Training in book-keeping for the treasurer	Train municipal governments to promote understanding of legislation concerning ownership of systems	Training in conflict management techniques – how to plan and run community meetings and GAs	Hygiene promotion training	Training in rehabilitation of micro-watershed
Monitoring and information collection	Technical performance by the water committee	Financial management monitoring	Monitor the legal status of water user associations	Monitor the status of the water committee	Collect information on household latrines	Collect information on household solid waste disposal
External coordination and facilitation	Advice on reliable and honest private companies providing spare parts	Apply for a loan Plan and stage special community fundraising events	Assist in ensuring legal status as a community organization	Encourage the water committee by visiting and meeting on manner	Basic specific advice about a particular health problem	Make connection between community and the forest department for a rehabilitation of the watershed project

Resource Note on Community Management & Enabling Environment[1]

By J.T. Visscher, 2008

1. Introduction

Community management is not a very clear concept as it has different connotations in the literature. It has similar unclarities as community participation, which already in 1982 was defined as the provision of free community labour inputs in government projects on the one extreme, to autonomous self-reliant development on the other (White, 1982). Despite or perhaps because of the unclear definition, community management of water supply and sanitation systems is increasingly seen as a fundamental option for sustainable development. Community management of services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes, was one of the guiding principles adopted in the New Delhi Consultation in 1990 and reconfirmed in Agenda 21 (Evans and Appleton, 1993).

Why is it believed that community management of water supply and sanitation systems, will be any more successful in achieving sustainable coverage than the top-down approaches from the past? Experience in many developing countries shows that even very good water agencies cannot successfully operate and maintain a network of widely dispersed water systems without the full involvement and commitment of the users. Despite the best endeavours of central agencies, staff, transport and budgets become over-stretched, leading to broken down systems, dissatisfied consumers and demoralised agency personnel (Lammerink, 1998). Many governments are becoming convinced that centralised systems cannot deliver the required services for the Sector. This resulted in a strong push towards decentralization that started in the late eighties.

Hopes are high with respect to community management. It is suggested that community management is an approach that seeks to make the best use of resources available within the community with support from government agencies. It puts people in charge of their own water systems in flexible partnership with supporting agencies. In this, communities take on more tasks and responsibilities, relieving agencies of routine management and maintenance duties. This releases agency resources which then can be used to reach more people. Successful community management is claimed to build community confidence and to stimulate wider development efforts. It is also stressed that there is still a lot to learn (Evans and Appleton, 1993). Much of this learning is at agency and institutional level as they often still hold the strings of the purse and so can dictate the developments. Increasingly governments and institutions are trying to adopt a more integrated and demand responsive approach. This is stimulated by the growing pressure to focus on sustainable functioning and effective use of water supply and sanitation systems. Another reason why

[1] The main resources used for this note are Putting Community Management in Place by {TC \l 1 "Putting Community Management in Place"}Visscher J.T. and Lammerink, M.P., 1998, Delft, IRC and Scaling up Community Management, Schouten, T. 2006. London, WEDC

government agencies are searching for alternatives and are amenable to participatory approaches is that over the past two decades "blue print" development strategies have been shown to be ineffective in meeting the basic needs of large numbers of marginalized, vulnerable people (Thompson, 1995). Thus public sector agencies show growing interest in participatory approaches, involving the community in their attempt to do more with less financial resources. They develop, for example, links with NGOs who have been using similar types of approaches.

In this it is surprising to see that agencies do not really have internal mechanisms to learn from their experience with communities, to learn how to work with them and to share this among their staff. What is needed is an approach to learning that allows to develop new methodologies and promotes changes of prevailing attitudes, behaviour, norms, skills and procedures within the agencies.

Not only does the agency staff need to learn to work with communities and to overcome the top-down approach from the past, but the communities also need to come to grips with working with the agency staff in a horizontal relationship. In the future the push for change however will be more radical with increasing decentralization and with communities who are to pay a larger share of the cost. Then the paradigm shift of communities participating in agency projects to one of the agencies participating in community projects will become even more important.

Community management does not imply that the communities must take care of everything or pay the full costs. They operate in partnership with the agencies and possibly the private sector thus enabling different distributions of responsibilities. The function and task to be performed by the organization acting on behalf of the community can thus vary considerably (Lammerink et al., 1995).

2. Communities managing their water supply

In essence the question of community management of water supply systems boils down to: Who manages (decides) what, with what tools and with who's support so that the community as a whole benefits.

The object of management is the water supply system. This system needs not only to overcome the hygiene risk the community faces from the existing water systems, but also to provide the level of service the community wants, is financially willing to support and for which an adequate management system can be found. It is often overlooked that new water supply systems have to compete with existing sources. Only if a better level of service can be provided in terms of coverage, quantity, continuity, quality and cost sustained system performance and effective use may be achieved (Visscher ed., 1997). This implies that an adequate insight is needed for the key actors both on the community and agency side of the existing situation, the perceptions of the problem, the desires and the realistic options for improvement.

Table 1 summarises key points that are needed to enable community management.

Projects can change the attitudes of people, when they start with developing respect for each other among the actors involved and stimulate information sharing without qualifying

it. Here the responsibility lies initially with the external agency staff who often still need to learn to respect the local culture and beliefs. But even in the communities self-respect may be low. Starting a project with a historical review by the community themselves of their water supply situation and the rites and myths involved has proven to be a good tool to get this going in the Transcol project in Colombia (Visscher et al., 1997). An interesting result was that after two project years a local farmer indicated that he learned from this project that 'everyone is the teacher of everybody and everybody learns from everyone'.

Table 1: Basic requirements for community management

- enabling environment which guarantees that communities can establish legal enterprises to manage their water supply system and that management decisions including for example tariff setting can be taken by these enterprises
- linking technology choice with operation, maintenance and management requirements clarifying what management it takes both at the local level and in terms of possible back-up by private sector or government.
- ensuring that the level of service responds to a realistic demand of the community
- partnership attitude between agencies and communities in which perceptions of problems and solutions can be discussed on the basis of equity and respect, valuing both academic and community knowledge in the same way
- transparent decision making ensuring that informed choices can be made
- proper management arrangements including practical management tools
- impartial institution that has the power of authority and the skills to mediate between the (community) water enterprise and the users in case of important differences of opinion
- accepting a learning period in which training and learning go hand in hand until water enterprises and the communities they serve can cope by themselves with limited institutional back-up support. *Based on Visscher ed., 1997 and Brikké et al., 1997*

Informed decision making is another tool to change attitudes. As it is clear for everyone what choices there are and what choice eventually has been made the power of the decision makers changes from hidden agendas to public accountability. It also dramatically cuts opportunities for malpractice and corruption and may lead to easy acceptance of the consequences.

'Informed decision making' helps to change attitudes

In one of the Transcol communities the tariff was raised tenfold by the water committee to enable the introduction of water treatment without any protest. In a community meeting a metaphor of a bus company was used for the water supply system. People being accustomed to paying for the bus could clarify the reasons for this. Then a similar reasoning was presented for the tariff related to the water system in which the different cost items were explained and discussed. After the discussion it was very clear what the tariff needed to be and what possible cost savings could be introduced.

3. Scaling up community management: the objectives

Scaling up community management aims to strengthen community management, not to do away with it. Its two objectives are:

- Ensuring that community managed water services are sustainable and that adequate institutional support and policy arrangements are put in place to support community management indefinitely.
- Expanding coverage from the current "islands of success" to larger areas, reaching entire populations.

Uganda a district support programme to scale up community management

Responsibility for the delivery of basic services in Uganda lies at the District and Town Council levels. WaterAid developed a District Support Programme with the participation of local governments, beneficiaries and all the implementing agencies in the districts. 'Memorandums of Understanding' were signed making the District Governments the leading partners in the programme. WaterAid assigned staff to facilitate the work with local government to improve the planning process and increase their effectiveness in co-ordinating and monitoring implementing agencies on the ground. Mr Kato Salongo, the director of Kyakulumbye Development Foundation (KDF), a community based organisation, confirms the benefits of the programme. He says *"now in the new approach, the district officials respond to our requests and we are even invited to their planning meetings. They support us in base line surveys and understand why we need more than six months for community mobilisation. The officers concerned regularly visit our projects and they give us technical support. Now I feel KDF is contributing at the district level."* (WaterAid Uganda 2001).

3.1 Adaptations to Current Practice

"Scaling up" aims to build upon the successes of community management but advocates adaptations and additions to the model. The most important adaptations are the following.

- To look beyond the two to three year life cycle of a water implementation project. Community management cannot mean that, following the installation of the pump or the taps, outside agencies drive off into the sunset and everyone lives happily ever after. A lot needs to be done in the years after construction. People who leave their positions must be replaced, water committees must be audited, conflicts resolved, major repairs carried out, systems expanded and one day replaced.
- To move decision makers away from the short term, system- and project-focussed approach towards a service delivery approach which takes into account the whole life cycle of a water service: from design and construction to eventual replacement and everything that needs to be done in between to keep the water flowing from the taps.

- To strengthen the institutions and capacities at the intermediate, decentralised level e.g. at the level of districts, departments or provinces. It is at this level that service delivery should be planned and community institutions supported. In addition to decentralised government agencies, local NGOs and private entrepreneurs should be involved or share responsibilities.
- For effective service delivery from the intermediate level, approaches, systems and tools must be harmonised. The current practice of every agency (government or non-government, local or international) using its own approaches, systems and tools is counterproductive for scaling up community managed water supply.
- Despite the fact that community management has been mainstreamed in policies and projects, it is often not legally recognised or formally integrated in national institutional frameworks for water service delivery. For sustainable water services, a community should not be considered as some artefact from the old days of participation, but as a legal, institutional entity for water service delivery. (Davis and Iyer 2002; Lockwood 2002; Thematic Group 2005)

Aquacol: support organised through an association of community-based organizations

Decentralisation in Colombia has caused the disappearance of national agencies form the rural water scene. Municipalities fail to establish support to community managed systems and they lack financial resources. 27 community-based water supply organisations in south-western Colombia serving 75,000 people, decided to create an association to:

- improve the quality of their water supply and sanitation services;
- generate "economies of scale" for training, spare part acquisition, project development etc.
- have a better access to funding;
- act as a communication bridge between communities and local, departmental and national institutions;
- influence national policies for water and sanitation

3.2 The Challenges of Scaling Up

Scaling up takes time
It takes time to build the necessary institutional support mechanisms, to strengthen policy and legislation to foster a service delivery model based on community management, to coordinate, plan and act together, and to change mindsets.

Scaling up aims at sustainability and coverage at the same time
The reason that these challenges are so great is because experience has shown that it is precisely the actions that make community water services more sustainable (taking time to build community institutions and capacities) that also make it more difficult to scale up in space i.e. serving the most people in the quickest way.

Scaling up requires commitment
Although the experience with community management is great and many lessons have been learned, they are limited to the single community level. Putting in place the capacities and

systems at intermediate level to support communities will be a major effort for all stakeholders.

Scaling up requires learning and compromise
Harmonisation and standardisation of approaches, technology and planning in particular at the operational intermediate level are needed to make rural water services sustainable and to extend coverage more quickly. Only by breaking through the current practice of "every agency is doing its own thing" and replacing it by joint planning and joint implementation, scaling up can be achieved. (Thematic Group 2005; Davis and Iyer 2002)

4. Further reading

If you want to explore these issues in more detail you may wish to access a number of additional titles on the internet (or on your CD-Rom) including:

- Schouten, T., Moriarty P.; *Scaling up the community management of rural water supply* Waterlines, Volume 23, Number 2, October 2004 , pp. 2-4(3); Publisher: Practical Action Publishing Authors: http://practicalactionpublishing.org/?id=waterlines_23-2
- Bolt E., Fonseca C. *Keep It Working: a field manual to support community management of rural water supply*. IRC Technical Paper Series 36; IRC, International Water and Sanitation Centre, the Netherlands http://www.irc.nl/content/download/2602/27266/file/TP36_KeepItWorking.pdf
- Lockwood H. (2004). *Scaling up Community Management of Rural Water Supply;* Thematic Overview Paper, IRC International water and Sanitation Centre http://www.irc.nl/content/download/9525/141513/file/ScalingUp_CM.pdfdf

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Davis J., Iyer P (2002) "*Taking Sustainable Rural Water Supply Services to Scale: A Discussion Paper*". WSP, Washington, USA, http://www.wsp.org/publications/scaling_up_press_20_03_03.pdf

Evans, P. and Appleton, B. (1993). *Community Management Today, the role of communities in the management of improved water supply systems.* (Occasional Paper Series; no. 20), The Hague, The Netherlands, IRC International Water and Sanitation Centre.

Lammerink, M.P.; Oenga, I. and Croxton, S. (1995). '*Freeing the channels - farmer managed water supply*'. In: *Waterlines*, vol. 13, no. 4.

Lammerink, M.P. (1998). '*Participatory action research on community management of rural water supply; experiences from Cameroon, Kenya, Nepal, Pakistan, Colombia and Guatemala*'. In: Community Development Journal, vol. 33, no. 4.

Lockwood H. (2002). "*Institutional Support Mechanisms for Community-managed Rural Water Supply & Sanitation Systems in Latin America*". Strategic Report 6, Environmental Health Project, Washington, USA.
http://www.ehproject.org/PDF/Strategic_papers/SR-6.pdf

Thematic Group Scaling Up Community Management of Rural Water Supply (2005) '*Scaling up Rural Water Services; sustainability through support for community management. A Joint Vision.* http://www.scalingup.watsan.net/

Thematic Group Scaling Up Community Management of Rural Water Supply (2005) "*Scaling Up Rural Water Supply; A framework for achieving sustainable universal coverage through community management*" http://www.scalingup.watsan.net/

Thompson, J. (1995). *Participatory Approaches in Government Bureaucracies: Facilitating the Process of Institutional Change*. Oxford, UK, Pergamon Press.

Visscher et al. (1997). *Technology Transfer in the Water Supply and Sanitation Sector: A learning experience from Colombia.* (Technical Paper Series: no. 32). The Hague, The Netherlands, IRC International Water and Sanitation Centre.
http://www.irc.nl/content/download/2598/27182/file/tp32e.pdf

White, A.T. (1987). *Community participation and education in community water supply and sanitation: concepts, strategies and methods* (Technical paper Series; no. 17), The Hague, The Netherlands, IRC International Water and Sanitation Centre.

WaterAid Uganda (2001) "*Scaling up Community Management By Institutionalising Community Management in a Decentralised Government System; The WaterAid Uganda Experience.* http://www.irc.nl/page/672

Waterlines Special Issue "*Scaling up rural water supply*". Vol. 23 No. 2 October 2004.
http://www.itdgpublishing.org.uk/content/wl23_2.htm

Monitoring and Evaluation

June 2008

Evaluation

A *family of research methods* which seeks "to systematically investigate the effectiveness of specific interventions

Types of evaluation (1)

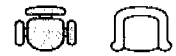
Audit (checking achievements and finances)

External assessment (possibly forward looking)

Internal evaluation (For example by project team)

Participatory evaluation (involving the partners, users etc.)

Participatory evaluation (Johari window)

Both know 	One knows, the other not 
The other knows 	None of the two knows 

Involving the community

Improves their understanding of the situation and may therefore stimulate action, but they need to agree on and understand

The purpose (the Why)

The process (the How and the Who)

The indicators (the What)

The effect (Who will know/decide)

Always give feedback
share the findings
and
help them to draw their own conclusions

Types of Evaluation (2)

Impact (or summative) evaluation: *Does the policy (programme, intervention) work? How large is the likely effect size?*

Process (or formative) evaluation: *How, why, and under what conditions does the policy, programme or intervention work?*

Why do we evaluate

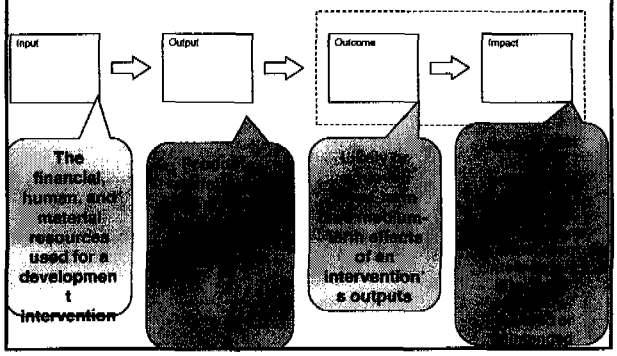
Learn from experience about what works and what does not to make interventions more effective

Accountability to diverse end-users & donors

Check whether our efforts deliver the proposed achievements (e.g. equitable, pro-poor WASH services and do not have unexpected impact

Explore the efficiency of investment / financial efficiency

Input • Output • Outcome • Impact



Key elements

You need to evaluate against clear objectives/expected achievements that are SMART (specific, measurable, achievable, realistic and time bound)

You need to agree on the objectives and on the indicators you will use to measure progress

Important to seek gender specific data

Indicators

are tools that help to identify how a system performs or how far a project is from achieving its goals and whether it is heading in the right direction. Choosing the right indicators is essential for an effective evaluating. The right indicator should:

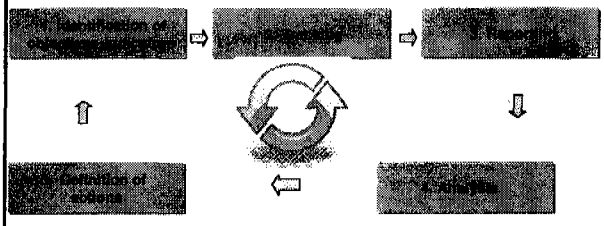
1. Be relevant to the project.
2. Be easily understandable to everyone.
3. Be easily measured.
4. Provide reliable information.

...And Reporting!

It is essential to provide a good report on the evaluation and share this with the key stakeholders and with management to support decision making on programme or policy level and plan (corrective) action

It is also important to ensure that the report is checked independently

Learning & the cycle of improvement



The analysis results should lead to (corrective) action!

Benchmarking

Is gaining popularity in the sector. It is a process that introduces a number of pre-selected indicators among a specific target group who will subsequently report on these indicators on a regular basis. In this way the performance of different actors and different systems can be compared.

Monitoring

An ongoing function that aims to provide those responsible for WASH services delivery with indications of performance measured against expected values of specific indicators.

Monitoring is very helpful

Monitoring of a water supply system will help to ensure its performance and allow timely maintenance and repairs.

Monitoring of progress of a development plan for a municipality, district or region (for example including increasing water coverage) can keep this type of plans on track or allows timely adjustment

Important aspects

Who monitors and who will take action

Involving right people

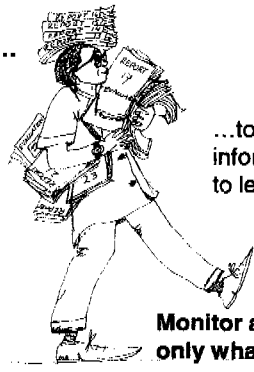
Keep in mind...

✓Monitoring and evaluation without action is not useful

✓The emphasis needs to be on sustained performance and improvements

✓Is it ethical to collect information on which no action is taken?

And remember...



...too much information may lead to less knowledge

Monitor and evaluate only what is needed!

Monitoring is related to action

So you need:

- A performance objective (good service provision)
- An indicator that measures the required performance
- The desired level (or the desired range)
- Keep asking yourself the question
  - DO WE REALLY WANT TO KNOW

Water Quality and sanitary surveys

Water quality monitoring by sampling is taking a snap shot that may be very incorrect

So we need to combine it with Sanitary surveys, of the

- catchment area,
- treatment system,
- Distribution network
- handpump

We see a lot of emphasis on data collection

But

An external agent should not be very interested in system data, he/she should want the system to work

Monitoring made easy

Who needs the data and for what in a region with handpumps

- The pump caretaker
- The water committee
- The users
- The District government

Who needs the data and for what in a region with MSF systems

- The operator
- The water committee
- The district or health authorities

Themes for sustainability indicators

- Coverage
- Quantity
- Continuity
- Quality (sanitary survey)
- Cost
- Capacity for O&M
- Culture (Efficient water use)

Resource Note on Action Monitoring & Evaluation[1]

By J.T. Visscher, 2008

1. Introduction

Evaluation and Monitoring are both important, may use the same themes and indicators but they serve a different purpose.

Evaluation
Evaluation is a family of research methods which seeks "to systematically investigate the effectiveness of a specific action or programme. It entails the systematic collection of information about activities and outcomes to make judgements and identify possible improvements (such as enhanced effectiveness, efficiency and impact).

Monitoring
Monitoring refers to collecting, organizing and using information about the actual situation and comparing it to a planned or expected situation. It usually also entails an issue of (pre-determined) action which needs to be undertaken if the data are outside a desired range.

Monitoring is an ongoing function that provides crucial information. In fact we monitor all the time although we may not be aware of it. For example, a bicycle rider will automatically check to see if the tires have enough air, if the brakes work, and so on. The rider collects this information by using his/her eyes, sometimes by feeling and sometimes by listening. If there is something wrong, then the rider either fixes the bicycle directly or asks someone else to repair it. Sometimes he or she does not wait until the bicycle actually breaks. As preventive maintenance, for example, different parts are oiled to avoid rusting (Shordt, 2005).

2. Evaluation

Evaluation is methodologically diverse using both qualitative and quantitative methods including case studies, survey research and statistical analysis among others. A large number of methods, techniques and approaches for conducting evaluations is available (see for example http://en.wikipedia.org/wiki/Evaluation. In this note we will not discuss these techniques, or the wide range of different types of evaluations that exist. We will just mention four types of evaluations that are common in the water and sanitation sector.

- Audits (checking and controlling achievements and finances)
- External assessments (which may be reflective and/or forward looking)
- Internal evaluations (for example by project team members)
- Participatory evaluations (involving project staff, users etc.)

[1] The main resources used for this note are Action Monitoring for Effectiveness by Shordt, 2005, IRC and Multi Stage Filtration an innovative technology by Galvis, Latorre and Visscher, 1998. IRC

An important issue to decide is who will be involved in the evaluation. Often external evaluators are being used as to ensure objectivity in the results. This may be an issue particularly in the case of audits where external funding organizations want an independent assessment of the situation, the use of funds and the financial control mechanisms. In most cases however a more participatory approach will be more effective. In many cases implementers of programs and projects want to get the best results with the available resources and in fact they know best what is going on. Instead of an 'auditor' for which they may want to hide some information, they may be much better of with a facilitator who poses critical questions without passing judgments. This type of evaluation may be much more revealing and may also trigger more sustained follow-up.

It is also useful to make a distinction between:

- Impact (or summative) evaluation: Does the policy (programme, intervention) work? How large is the likely effect size? and
- Process (or formative) evaluation: How, why, and under what conditions does the policy, programme or intervention work?

2.1 Evaluation objectives

Different stakeholders have varying needs for the insights gained from robust monitoring, evaluation and reporting systems. These can be summarised as follows:

- Purposes for Partner Governments:
  - Policy results measurement
  - Accountability of government to end-users, tax payers and donor governments for results and quality of processes
  - Information giving & reporting
  - Understand how initiatives are affective the lives of different end user groups

- Purposes for the donors
  - Financial disbursements
  - Measure results
  - Accountability to tax payers and partner countries of EU for results and processes

- Purposes for project or programme:
  - Give voice to the experiences of different user groups about how services (or the lack thereof) are affecting their lives
  - Learning from experience to improve planning/participation
  - Reduce corruption/dishonesty
  - Improve results and sustainability

2.2 Evaluation themes and indicators

From the beginning of a project it is important to define the indicators and levels to attain. This has to be done within the legal context and taking into account the specific conditions of the area under review, difficult to generalise from the national level. The themes and indicators for evaluation have to be agreed upon between all development actors involved,

including the community, that are responsible for the sustainability of the project achievements.

The definition of the indicators should be clear and imaginative. For example, an indicator of coverage is the number of users connected to the system divided by the number of families in the community. However, in dispersed settlements where some families own protected wells or springs, a piped water supply does not necessarily have to achieve 100 percent coverage. In such cases, the indicator of water supply coverage that could be agreed upon might be the number of families with access to potable water within a distance, for example, of 200 metres from their house, divided by the number of families in the community. Table 4 presents a series of indicators adapted from an evaluation of the sustainability of 40 water supply and sanitation systems in Ecuador (Visscher et al., 1996).

Table 1 Indicators for the evaluation of water supply systems

Theme		*Indicator*	*Desired level*
1.	Coverage	No. of connected households / Total no. of households	100%
2.	Available quantity	Max. flow in the system / Min. flow in the source	Less than 50%
2.1	Production	Actual flow in the system / Design flow	Less than 100%
2.2	Quantity of use	Supply quantity per user / Design capacity per user	Less than 100%
3.	Continuity	Number of supply hours per day	24 hours
3.1	Continuity in the source	Reduction over time	No reduction
4.	Quality	Turbidity	Less than 5 NTU
		Residual Chlorine in distribution net	0.3 - 0.6 mg/l
5.	Use of other water sources	No. of persons using other sources / No. of persons interviewed	0%
5.1	Efficient water use	No. of houses with leaking taps / No. of houses visited	0%
6.	Management capacity	No. of indebted users / Total no. of users	Less than 5%
		Supervision of the operator	Yes
6.1	O&M capacity	Trained operator with work tools	Yes
6.2	Representation of women	No. of trained women in the committee / No. of trained committee members	50%
7.	Cost	Monthly revenue / Monthly expenditures	More than one
7.1	Tariffs	Monthly tariff / Monthly family income	Less than 3%

Source: (Visscher et al, 1996)

The desired levels of achievement indicated in the table are an example, and were developed by taking into account the situation in the zone where the evaluation was applied. For other conditions they need to be adjusted, and other indicators can be included. For example, if sufficient water quality data are available, it may be possible to use some of the values that are included in the national standards.

3. Monitoring

Monitoring is different from evaluation in that similar themes and indicators can be use, but the required action to be taken if results are outside a pre-determined range are defined in advance. The indicators presented in Table 4 can also serve for the development of a monitoring system, constituting a vital tool for the management of a water supply service, but a characteristic feature for a monitoring system is that: for each indicator, an acceptable range is indicated along with the remedial action that should be taken when the value lies outside this range.

The issue of monitoring is often treated badly and operators are not provided with a simple monitoring model and the provision of simple monitoring tools. At best they receive a reporting form and not a tool that initiates and stimulates action. It appears as if the reporting on achievements (positive or negative) is more important than sustaining the water supply service at the desired level. Monitoring should support the technical, economical and managerial performance of a water supply system, a sanitation facility or a project or a programme. It needs to have clear indicators that need to be established with the people involved (operator, project team etc.). It needs to spell out the action to be taken if the desired level for specific indicators is not reached.

Monitoring made easy and effective

For a handpump the performance can be measured in terms of the number of strokes it takes for the water to appear and the volume produced per minute at a fixed stroke speed. If it takes more than two strokes for the water to appear the footvalve needs to be checked and possibly replaced or the piped is leaking. If the volume produced per minute falls below a set standard the cupseals need OT be replaced. The operator measuring performance in this way sees a gradual reduction in volume and can predict when it will reach the minimum level, thus enabling him or her to plan the necessary repair, instead of waiting till the pumps breaks down. Similar indicators can be established for the performance of piped systems as well as for financial and managerial performance.

3.1 An example of a monitoring format

Table 2 presents a model that was established to facilitate the monitoring of a Multi Stage Filtration system (MFS). MSF is a biological water treatment technology that needs some supervision and occasional interventions by the operator. The model provides a quick overview of the situation and shows key actions to be taken when the measured performance is not in line with the previously established guideline values. This model can also be used to establish the key parameters the operator needs to measure and the ones to register in order to have an indication of the long term performance of the system.
The monitoring model needs to be complimented by a reporting format and models that deal with other components of the system including the catchment area, the transmission main and the distribution network.

The general monitoring model permits to identify the performance of the system and the treatment units. In the column related to the actual situation, issues are included that have to be measured and observed. The values a_i and b_i that appear in the second column are specific for each system and have to be established in the design phase for each treatment

plant. When the actual situation does not correspond to the desired situation, the corrective actions included in the third column have to be taken.

Table 2 Model for monitoring of an MFS system (Galvis et al 1998)

Location: **Error! Bookmark not defined.**ACTUAL Situation	Desired Situation	Actions to take if conditions are not met
Discharge of the source in l/s	$a_1 < N < b_1$ l/s	Detailed inspection of the catchment area
Do new sanitary risks exist in the catchment area?	No	Detailed inspection of the catchment area Detailed inspection of the intake and treatment plant
Water production of the system in l/s	$a_2 < N < b_2$ l/s	Review of the problem with the administrative unit of the system
Is the water bypassing the plant and if so which component	No	
Water quality ***Raw water*** Turbidity in NTU Apparant Color in TCU	 $N < b_3$ NTU $N < b_4$ TCU	 Describe and review of the problem and inform supervisor if problem continues
Treated water Turbidity in NTU Apparant Color in TCU Feacal Coliforms in FCU/100 ml	 < 5 NTU < 15 TCU < 1 FCU/100 ml	 Take action to inform the community and the administrative unit and initiate remedial action to overcome the problem possibly involving external support
Operator Report on plant performance is up to date? Is satisfied with his/her job and the support received	 Yes Yes	 Discuss with the administrative unit Discuss with the administrative unit
Do operation and maintenance problems exist Are sanitary risks present in the plant Because of animals ? Because of human contamination? Algea are present in large quantities	No No No No No	Describe and review of the problem. Discuss with the administrative unit and and possibly with the community or specific actors in the catchment area
The plant site is clean? Cleaning problems exist in the treatment unitis?	No No No	Initiate cleaning and if needed ask support from the administrative unit and the community
Valves or pipes show leakages?	No	Repair or discuss the problem with the administrative unit
The state of the construction is: Good ( ) Average ( ) shows problems ( )	Good/average	Review the causes of the problem and arrange for repair

5. Further reading

If you want to explore these issues in more detail you may wish to access a number of additional titles in the internet (or on your CD-Rom) including:

- Shordt, K. (2005); *Action Monitoring for Effectivenes: Improving water, hygiene and environmental sanitation programmes*, Part I; IRC International Water and Sanitation Centre, Delft, The Netherlands
  http://www.irc.nl/content/download/23444/267722/file/Part_I.pdf

- Shordt, K. (2005); *Action Monitoring for Effectivenes: Improving water, hygiene and environmental sanitation programmes*, Part II; IRC International Water and Sanitation Centre, Delft, The Netherlands http://www.irc.nl/content/download/23445/267725/file/Part_II.pdf
- Khosla P., van Wijk, C., Verhagen, J., James V. (2004) *Gender and water.* IRC International Water and Sanitation Centre, Delft, the Netherlands http://www.irc.nl/content/download/14459/194371/file/TOP10_Gender_07.pdf
- Shordt, K., van Wijk, C., Brikké, F. Hesselbarth (2004). *Monitoring Millennium Development Goals: a review of experiences and challenges.* IRC International Water and Sanitation Centre, Delft, the Netherlands; http://www.irc.nl/content/download/12311/176556/file/Monitoring_MDGs.pdf

6. References

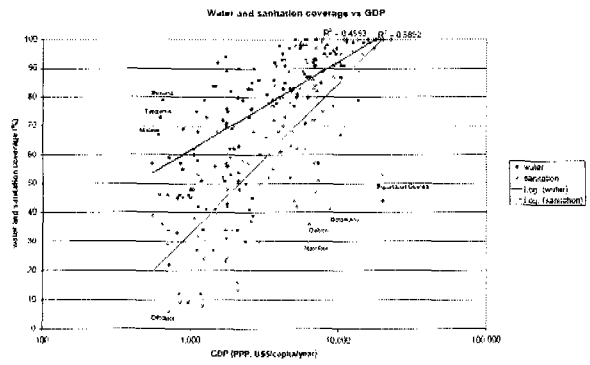
Galvis, G., Latorre, J., and Visscher, J.T. (1998). *Multi Stage Filtration an innovative technology*, IRC International Water and Sanitation Centre, Delft, the Netherlands;

Shordt, K.,(2005). *The main resources used for this note are Action Monitoring for Effectiveness*. IRC International Water and Sanitation Centre, Delft, the Netherlands;

Visscher, J.T., Quiroga, E., Garcia, M., Madera, C.A. and Benavides, A. (1996). *En la búsqueda de un mejor nivel de servicio: evaluación participativa de 40 sistemas de agua y saneamiento en la Republica de Ecuador.* Cali: CINARA, Delft: IRC and Quito: CARE Ecuador.

Day 4

Poverty and financing



Sustaining Poverty (1)

A poor family in Manila pays 900 pesos/month for water bought from a truck
A family connected to the piped water pays 100 pesos/month

City	Poor pay
Manila	9X
Lagos	10X
Cairo	40X
Jakarta	60X
Karachi	83X

Sustaining poverty (2)

High and middle class residents in Nairobi pay 10 KES per m3

The residents of Kibera (slum) pay 100 KES per m3 of water (2 KES per 20 l)

During the dry season the queuing time for women and children may go up to 4 hours per day

What is your experience

Buzz group exercise

- Do poor people pay more in Nigeria
- What service level do they get
- Can they afford water treatment
- What about the rural poor

Challenges of national/local governments

To ensure that people get access to good water supply and sanitation services

To establish the legal and institutional framework for water and sanitation service provision and control

To ensure that fair pricing mechanisms are being applied possibly including (partially) subsidized services for the poorest groups

To ensure that service coverage is maintained and expanded possibly by (co)-financing new systems and rehabilitations and management support

Challenges of water providers

All water providers, public or private, small or large face the same challenges

- How to ensure delivery of a continuous service
- How to guarantee the efficiency and the effectiveness of their activities
- How to ensure that consumers make the necessary financially contributions
- How to get access to subsidies, loans and external support

Eight case studies in Latin America

Big differences in small water providers

- # of Connections 125 – 5172
- Consumption level 9.5 – 29.5 m^3/con/mes
- Tariffs 0.08 – 0.53 USD/m^3 (0.4 - 2.3% of poverty level per country and 0.8 - 4.6% of extreme poverty level per country)
- Backlog in payment 7.4% (0.1 – 28%)
- # Staff 0.46 – 1.6 per 100 connections
- Unaccounted for water 26.3% (9.2 – 52%)

The challenge of consumers is

To obtain good quality water supply at a fair and affordable price

What do we mean by "cost recovery"?

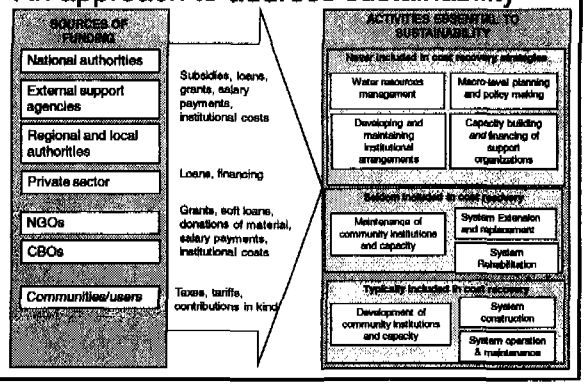
Cost recovery is more than covering O&M cost. It is about

- Covering other operational cost including institutional arrangements, capacity development and support services
- Recuperating investment cost
- Financing expansion of coverage
- Meeting the needs of the poorer men and women in society

Sustainable cost recovery

- All running cost (O&M, administration, capacity development, management) are financed from user charges (and possibly cross- subsidies)
- Backstopping is financed from user charges and/or subsidies
- Expansion can be financed
- Initial investment is recuperated or a grant
- Affordable services are provided continuously to all community members (rich and poor).

An approach to address sustainability



Realities

Paying for water often conflicts with socio-economic problems, political promises and perception of water as a free good. **But someone is paying!**

Often community groups, including both male and female heads of households, have not been allowed to choose the most affordable systems and service levels.

It is also doubtful, whether they had the right information to choose a service level they can afford and are willing to pay for.

Realities

- Many systems provide very poor services
- low ability and willingness to pay

Realities

- Implementing sound cost-recovery practices is complex and often is tampered by outside interference
- Many strategies for financing and *long-term* cost recovery are unclear and do not generate enough revenues to sustain the system
- *Tariffs are set on an ad-hoc basis also because* of lack of long term planning
- Accounting systems are deficient and clients have limited or no control over service providers

Buzz group: How can you support

How can you support communities in cost recovery efforts

How can external agencies assist?

- clarifying financial responsibilities for "who should cover which costs"
- maximising willingness and ability to pay
- helping to clarify and assess costs
- helping to calculate an appropriate an equitable tariff structure based on a proper budget
- organising access to alternative financial sources
- long term support!

Clarifying opportunities (gender and pro-poor)

- Are needs and practices of poor men and women investigated?
- Can (poor) women and men become operators and managers, get paid for repairs and participate in training?
- are fees and fee collection systems affordable and equitable? E.g. must unpaid women treasurers or women consumers walk far or bear high transport costs?
- how are poor (wo)men enabled to attend and speak out in meetings?

Willingness and ability to pay

Willingness to pay and ability to pay are different issues

Trying to understand men's and women's willingness to pay for certain services is more fruitful than assuming that they are not able to pay

Factors negatively influencing willingness to pay are:

- a system that does not reflect the demands of local women and men,
- lack of transparency
- political interference
- beliefs about 'free water'
- competing water sources or alternative defecation sites

How to increase willingness to pay

What is your experience with willingness and ability to pay and what suggestions do you have to enhance willingness to pay?

Put your cards on the table

Enhancing willingness/ability to pay

- ensure transparency in financial management and that user contributions are clearly accounted for...
- discuss the best collection system and reporting methods
- discuss the not so obvious benefits of a well functioning improved system and that these benefits can only be achieved if everyone contributes
- understand what values (benefits) different people (men and women) and community groups attribute to improved water supply

Some interesting options

In existing systems several options may exist to improve financial performance and to better cater for poorer sections of society by:

- introducing a system of cross-subsidies to support the poorest?
- improving the level of service so that more people want to pay?
- reduce water losses in the system, as this will allow to improve the service level, may reduce cost, and may allow for additional revenues?
- Improve the management and administration (meter reading, poor billing, transparency (fraud))

Cost recovery and subsidies

June 2008

Introduction

External organizations have an important role to play in helping to set appropriate tariffs. Most tariffs seek to cover O&M, but who pays for costs such as:

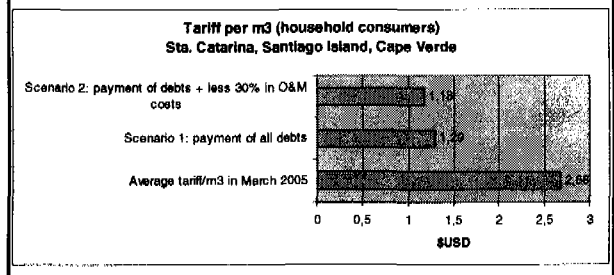
- Extending and upgrading water service?
- Sanitation?
- Physical & financial support (poor users)?
- Water quality analysis?

Cost recovery strategies

Most countries have cost a recovery policy for water supply mainly focusing on meeting O&M cost and recovering some construction cost (Algeria, Botswana, Burkina Faso, Ethiopia, Ghana, Lesotho, Kenya, Mozambique, Namibia, Nigeria, Senegal, South Africa, Uganda, Zambia, Zimbabwe,)

Fewer have a (similar) cost recovery policy on sanitation (Lesotho, Mozambique (urban), Senegal, South Africa, Uganda, Zimbabwe)

Example from Cape Verde



Identifying costs

Financial costs

Arise directly from construction, maintenance and use of water and sanitation facilities.

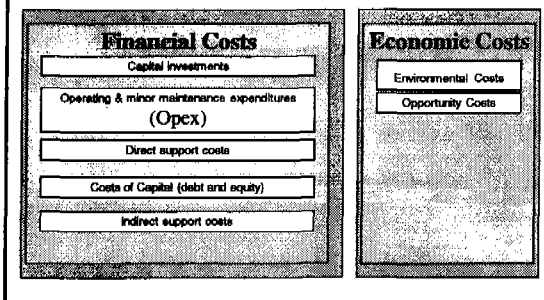
Must be identified to arrange for financing, or to account for external or central government loans / grants

Economic costs

Reflect value of water beyond project or programme, (e.g. at watershed level) by reviewing impact of resource allocation decisions on society, and the environment (both financial and water resource decisions)

Defining costs

Which costs do you know?



Financial costs (1)

Capital investments in fixed assets	The amount invested in fixed assets such as concrete structures, pumps and pipes. They are occasional and are best addressed distributing costs over the lifetime of the assets
Operating and minor maintenance expenditures (OPEX)	Expenditure on labour, fuel, chemicals, materials, bulk water. Most costs estimates assume OPEX 5-20% of capital investments. In practice, maintenance is skimped everywhere (even UK and USA).
Capital maintenance expenditure (CAPManEX)	Expenditure on asset renewal and replacement, are critical to avoid the failures represented by haphazard system rehabilitation and extension.

Financial costs (2)

Support costs (direct and indirect)	Costs of ensuring external support (capacities and resources) to help when systems break down or to monitor performance are usually overlooked. Direct support costs include environmental and economic regulation, customer involvement costs, etc. *Indirect support costs include government macro-level* planning and policy-making, developing and maintaining institutional arrangements, capacity-building for professionals and technicians.
Cost of capital	Expenditure on the weighted average cost of capital representing interest payments on debt. Context specific but an indicative 5% on current costs fixed assets has been used. However, many services are provided based on grants or soft loans.

Economic costs (1)

Environmental costs include costs resulting from:

- Over abstraction of groundwater
- Insufficient allocation and treatment
- Dealing with upstream pollution from for example industry
- Downstream environmental and health impact of insufficient waste water treatment

Economic costs (2)

Opportunity costs include costs related to:

- Productive use of water
- Time saved in water collection (used in production, education etc.)
- Lost wages because of ill health
- Lower development levels because of worm infestation

So why do we need tariffs?

Winning support for cost-recovery

Is water really free?

Water is free when it falls from the sky

Water is not free when it comes from a tap

Why tariffs?

- Need to cover costs
- Raise consumer awareness of the financial, economic, environmental costs of a service
- Often setting tariffs is a political (controversial) process

Tariff objectives may include

Raising enough revenues to cover specific costs

Making access to drinking water affordable for different income groups

Sending appropriate price signals to users about the relationship between water use and water scarcity (depending on context)

Fairness as perceived by the consumers

But some objectives might contradict others...

What types of tariffs do you know?

- Rural settings
- Urban utilities

Tariffs in Senegal Basin project area

Per capita, men, married women

Per household

Per plot

Per head of life stock

Per heard (if number of animals are not known)

Per carriage (Most common way of water collection)

Fixed charge or single tariff

Consumers pay set amount independent of volume used
Different tariffs for different types of user (industry, agriculture)
Often used when there are no water meters

Advantages:
Simplicity, easy to administrate and to calculate

Disadvantages:
Price does not reflect level of consumption or access
Equity not taken into account (No differences between consumers)
No incentives for efficient water use

Constant Volumetric Tariff

All users pay the same cost per unit of water (cost/m^3)

Advantages:
Tariffs reflect the volume of water consumed
Easy to administrate and to calculate

Disadvantages:

Cost may be too high for the poor (although in some countries linked to wealth ranking of living area)

Water supply has to be reliable

Needs reliable meters (at kiosks usually water sold per 20 litre bucket/jerry can)

Increasing Block Tariffs

Users pay higher amounts for higher consumption levels

By far the most common tariffs for water services

Advantages

Tariffs encourage water use efficiency

The system is perceived as fair to consumers

Disadvantages

Conflicts may arise over basis of the graduation (e.g. for productive use or multiple use by poor households)

Increasing Block Tariffs

Decreasing Block Tariffs

Consumers are charged a higher cost per unit of water at lower consumption levels. As the consumption level increases, the price per unit decreases

Advantages

Encourages productive use and agricultural production

Disadvantages

Unfair to poor people and low consumption users

Disincentive for water conservation

Connecting low-income households

High connection charges exclude the poor from the service – making any tariff policy irrelevant

Options to improve (adapted from Sohail (2004) include:

Offering discount connection charges to legalise connections

Applying fixed rate connection charges irrespective of cost involved

Offering discounts in exchange for households labour

Offering instalment plans or micro credit for connection fees

Adding connection charge in the tariff

Establishing ownership of the meter to avoid removal or tampering

Establishing quality assurance mechanisms to guarantee the quality of the connection

What can support agencies do?

Before setting tariff structure, determine which costs have to be covered and who is financially responsible

Check government policies on tariff setting

Ensure that staff have the mandate and capacity to assist communities to set tariffs and to check if the tariffs help to achieve community objectives such as:

meeting operation and maintenance costs

encouraging efficient use of water

making sufficient water available to lower income groups (communities may opt for system of cross subsidies)

What else is needed?

- Determining who (from the water committee?) collects and manages money (voluntary or paid job?)
- Establishing payment form (cash/kind) and collection system

Providing training as needed

Deciding where the money is kept and agreeing on the signatories Transport, depreciation and banking costs 'eat up' funds How do they account for income and expenditure and to whom?

Ensuring that financial rules and information are known by all to help prevent misuse and corruption

Arrange annual reporting and auditing with special emphasis on possible problems for the poorer users, and possibly adjusting tariff if needed

A field check in Uganda

Water committee was in good financially shape.

A house visit to find about water use showed something different. A young lady told us that:

- the water committee was stealing the money
- she didn't want to pay anymore, so was going back to river

We learnt that:

- Although the committee collected enough money, that didn't prove people were using the system
- There was no accountability to those paying the fees about the management of water and use of funds

A field visit to Ecuador

We found that water committees were very good financial managers. They collected lots of money, fined people who didn't show up at meetings and lent money at high interest rates to community members

But they were poor water supply system managers as:

- They did not pay for preventive maintenance
- The only paid for corrective maintenance themselves if they could not get the money from NGOs

Subsidies

To promote sustainability of water systems and give the poor better access (WHO guidelines says 25 litres/day)

BUT, subsidies may very much benefit the not-so-poor unless they are well targeted.

In Cote d'Ivoire: The **poorest 20%** receive **5%** and the **richest 20%** of the population receive **55%** of the subsidies for WSS?

Can subsidies meet social and equity aims without giving benefits mainly to wealthier consumers?

Subsidies

What type of subsidies do you know about?

How do they target the poor?

Output based subsidies

Output based subsidies incentivise operators to fill gaps in service delivery or to achieve other targets specified as benchmarks

Used to prioritise expanding coverage or increased connections in poor areas

Advantage

Poor in rural and peri-urban communities benefit

Disadvantage

Corruption is a problem – oversight of subsidies requires good governance

Direct subsidies

Government or local authority pays a portion of poor consumers' water bills

Advantages

- Targeted – if well administered, reaches those who need it most
- Encourages development of national or local information about wealth and poverty (inequality indicators)
- Increases investment in the sector

Disadvantages

- High administrative costs for national and local government
- Transparency can be an issue
- Sustainability: will subsidy survive government changes or sector budget cuts?

Cross subsidies

Cross subsidies assist lower-income consumers through surcharges on wealthier consumers

Low income consumers undercharged; higher-income consumers (or commercial users) overcharged

Connection charges reduced in poor areas

Existing customers effectively subsidise new customers - customer base has to be large enough to absorb costs

Advantages

Allows poor consumers easier access to water supply and sanitation

Disadvantages

Difficult to administer – need information on tariffs, users & consumption

Low prices can encourage waste

Power to decide who gets subsidies can encourage corruption

An example from Cote d'Ivoire

Since 2002, water services to all towns and cities are being provided and managed by a private company (SODECI) which applies three pro-poor mechanisms:

- Subsidised household connections: using surtax on water bills mainly in Abidjan to finance services in smaller towns
- Applying an incremental block tariff
- Establishing licensed water resellers in informal settlements to keep prices down

Other financing mechanisms

- Tariffs not always enough to cover major repairs, or to upgrade or rehabilitate the system. In some cases local savings are available, but often alternative funding is required or money has to be borrowed, but financing institutions are reluctant to lend to the poor
- What other options exist; What can you do to help communities and service providers? (buzz group)

Some financing options

1. Overseas Development Assistance
2. Development Funds
3. Micro finance
4. Revolving funds

What support can be given (1)?

- Raise awareness within the region banking system:
- Highlight successful cases from other regions or countries and promote exchange visits when possible
- Link up potential banks with local entrepreneurs, to make activities in the region more attractive for the banks
- Consider whether enabling policies and regulations are needed

What support can be given (2)?

Raising awareness among the communities by:

- *Providing to information concerning* financial sources including a list of available options (loans, potential funders, micro-credit schemes, banks etc.) in the region and their specific conditions
- Advice through field workers about different options and how to achieve the legal status to apply
- Help to write project proposals

Story 3 - Financing urban sanitation in Wogodogo, Burkina Faso

- LAGEMYAM women's association for improved sanitation financed 70% of a credit system for domestic waste household management in Wogodogo, a low-income neighbourhood of Burkina capital Ouagadougou
- Because people are poor LAGEMYAM provided credit without guarantee to any borrower it already knew
- In first phase, 28 households constructed 35 VIP latrines, and drainage and soak pits for domestic waste treatment – and organised solid waste collection
- LAGEMYAM and CREPA assumed that revenue from solid waste collection would finance the credit system
- But only five households paid back their loan!

Story 3 - Financing urban sanitation in Wogodogo, Burkina Faso

Why did this happen?

- People were used to getting toilets and buildings for free
- Revenue from solid waste collection was invested primarily in basic needs such as water and food
- During second phase, CREPA and NGO (EAST) launched awareness campaign – 18 families built 20 sanitation facilities and repayments were slightly better
- Participatory approaches were then developed to increase community commitment to the credit system
- People realised that if they didn't pay it back, the system could not continue and building would stop
- The system now runs well – repayments top 80%

Community financing for water connections in the Ivory Coast

- CREPA Côte d'Ivoire developed a strategy to help households afford water connection fees and water bills
- CREPA borrowed 20,000 CFA (around US$ 36) to finance connections
- A fund, run by a household committee, was established to continue to support connections
- A locked box was set up at each connected household
- A families puts 100 CFA (US$ 0.18) a day into the box
- The household committee checks the money each week
- The family pays its water bill monthly from the money in the box, and uses any leftover money to repay its credit
- The process continues until all 20,000 CFA is paid back

Lessons learnt (1)

1. Commitment from government is a pre-condition for sustainability
2. Need to build public administrative and financial capacity, mainly at local and regional levels of governance
3. Need to promote partnerships for service delivery and clarify financial & operational responsibilities (With local authorities, local private sector water providers, local NGOs and community-based organisations)
4. Willingness to pay and ability to pay for water services should be assessed and not assumed

Lessons learnt (2)

5. Need to promote flexible payment structures and service levels for consumers – with appropriate and equitable tariff and billing structure
6. Subsidies can be more effective if used to increase access to water supply and sanitation – e.g. connection fees
7. Need to promote locally based management with gender and social equity
8. Need to establish/promote sources of local finance to help users pay for improved levels of service (Do this as part of design and implementation)

More?

Tip

Want a lot of details on content (types of tariffs, subsidies, lessons learnt, case studies?

Visit IRC financing and cost recovery website

http://www.irc.nl/content/view/full/113

Resource note on poverty and sustained finance[1]

By J.T. Visscher, 2008

1. Introduction

Poverty is deprivation of those things that determine the quality of life, including food, clothing, shelter and safe drinking water but also "intangibles" such as the opportunity to learn and to enjoy the respect of fellow citizens. Ongoing debates over causes, effects and best ways to measure poverty, directly influence the design and implementation of poverty reduction programs.

Poverty reduction (or poverty alleviation) is any process which seeks to reduce the level of poverty in a community, or amongst a group of people or countries. Poverty reduction programs may be aimed at economic or non-economic poverty. Some of the popular methods used are education, economic development and income redistribution. Poverty reduction efforts may also be aimed at removing social and legal barriers to income growth among the poor (Wikipedia, 2008).

Extreme poverty is the most severe state of poverty, where people cannot meet basic needs for survival, such as food, water, clothing, shelter, sanitation, education and health care. To determine the number of extreme poor around the world, the World Bank characterizes extreme poverty as living on US $1 or less per day, and estimates that 1.1 billion people currently live under these conditions. This $1 a day figure has been adjusted for purchasing power parity (PPP) which attempts to eliminate differences in costs of goods and services between countries to present a more meaningful comparison A US dollar spent in India will buy more bread than in the USA. PPP takes into account this lower cost of living and adjusts for it as though all income was spent locally.

Eradication of extreme poverty and hunger by 2015 is a Millennium Development Goal. Extreme poverty is most common in Sub-Saharan Africa, South East Asia and Central America. The proportion of people in extreme poverty fell from 59 to 19 percent during the 20th century and is now the lowest in history.

Despite its plentiful resources and oil wealth, poverty is widespread in Nigeria. The situation has worsened since the late 1990s, to the extent that the country is now considered one of the 20 poorest countries in the world. Over 70 per cent of the population is classified as poor, with 35 per cent living in absolute poverty (IFAD, 2007).

Women and households headed by women are frequently the most chronically poor within rural communities. Women have lower social status than men and consequently less access to schooling and training, particularly in childcare and health practices. Yet women play significant roles in rural economic activities. While the number of men migrating from rural areas in search of employment has increased over the last decades, the number of households headed by women has risen substantially. Women struggle to cope as the burden of work, at home and in the fields, falls on their shoulders. Malnutrition is a frequent problem in these households (IFAD 2007).

Sustainable water supply and sanitation services can make an important contribution to reducing poverty as it has a direct impact on the incidence of disease and indirectly on several other

[1] An important resource used for this note is the WASHIRIKA package of information, that IRC is developing for capacity building in support of better local governance and WASH service provision.

indicators that are part of the millennium development goals, including education and malnutrition. Unfortunately water and sanitation is given a low priority in the Poverty Reduction Strategy (PRSP) process in most countries. Even where water has been prioritised, government budget allocations have been insufficient. Lack of coherent policy planning and financing frameworks, and lack of systems for accountability and transparency at a government and sectoral level hinders market-based sources of finance. Central governments must balance competing priorities, such as health and education, which tend to be more streamlined, while the water sector is often characterised by multiple – and often competing – institutional arrangements, and weak regulatory structures.

This financial picture can be considered an *opportunity* to do things differently, and many organisations have taken on that challenge. Changing the way that funds are spent is probably more important than simply looking at the volume of ODA. The potential for ODA to leverage non-ODA forms of finance to support the sector is particularly important to achieve development targets.

The good news is that there is a considerable rate of return on investment. Hutton et al (2006) estimate a return of 2.8 on investment in water supply and 6 in sanitation for Sub-Saharan Africa.

2. Cost recovery in Water Supply and Sanitation

Few countries have realistic policies, operational strategies or plans for cost recovery and financing for sustainable water supply services, particularly for the poor. In fact most of the strategies for cost recovery are short sighted and address only part of the issue of sustainability, resulting in system degradation. Typically approaches are focused on recovering operation and maintenance cost from the consumers, but this is not sufficient to ensure sustained performance of water supply and sanitation facilities.

What is needed is the matching of all costs related to providing a sustainable service, with all the available sources of funding (Figure 1). These funding sources may lie entirely with the users, but may also include external funding from governments or donors. Unless all the costs (technical, human resource, institutional) related to providing and maintaining a service are identified and covered, a system cannot be considered sustainable.

In rural and low-income urban areas user based cost recovery strategies become crucial as communities are progressively made responsible or co-responsible for the financial management of their system. Making communities responsible has proven to be an effective strategy for achieving sustainability in operation and maintenance of systems (Bolt & Fonseca, 2001). However to date, such responsibility has typically been limited to funding of system management and O&M costs with, in some cases, a minor contribution to capital costs. Inclusion of the capital costs related to system construction, enlargement or replacement, as well as for the necessary institutions to support community managers requires different models. Such models are also crucial to replicating community based management models across entire districts or regions. In particular, models need to shift from looking at the financing of individual systems in isolation to that of service provision to entire populations.

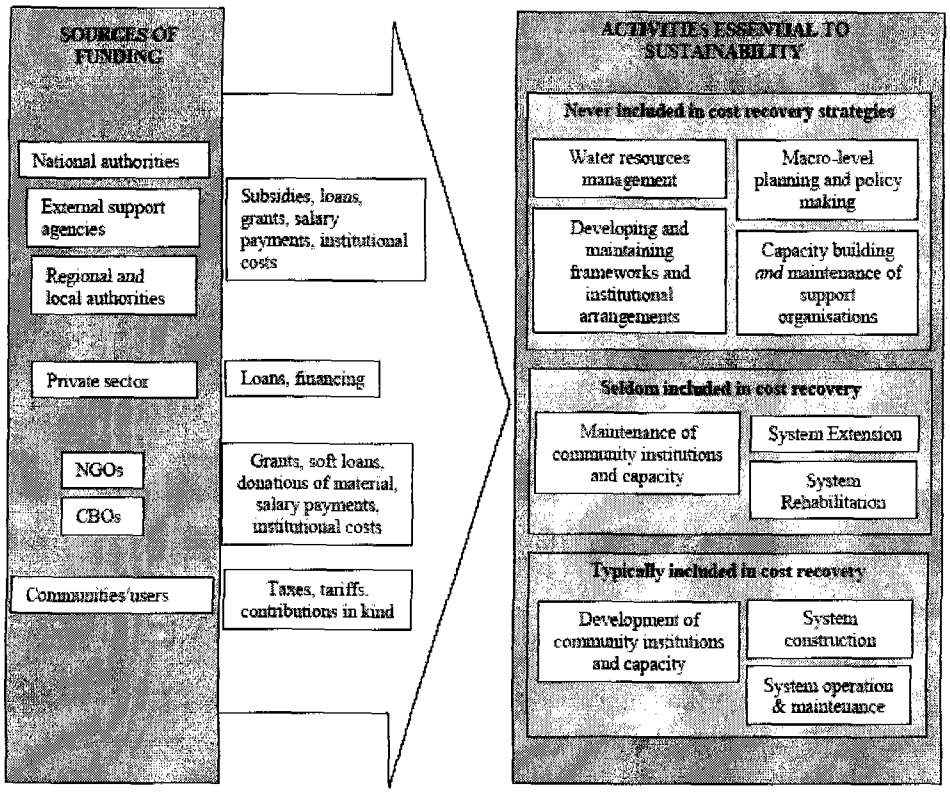


Figure 1 Sustainable cost recovery needs to meet all cost

The IRC approach to cost recovery therefore looks beyond the three year horizon of most projects or programmes financed by support agencies, and aims to look beyond the individual water system and its users. It considers not only the construction, but the lifetime, rehabilitation and extension of water supply systems and all the elements that are necessary to providing longer term support to users in rural communities and urban neighbourhoods. Key items to be considered in this approach include:

- Tailoring of cost recovery frameworks to the special needs of the rural and urban poor (seasonal/irregular payment, payment in kind, etc.)
- Developing frameworks for transparent cross subsidisation of capital and recurrent costs, with a focus on ensuring coverage of the poorest of the poor;
- Developing institutional arrangements and legal frameworks that ensure that money from cost recovery is used for service delivery;
- Identifying mechanisms for including in cost calculations, the development and maintenance (and capacity) of the institutions to support communities in managing their systems e.g. initial and repeat training, auditing, technical back-up etc;
- Identifying financial mechanisms to encourage demand management and avoid resource depletion;
- Including in cost recovery those costs related to waste water management;

Best practices reflecting the above mentioned points are available from some countries and regions in the world (IRC, 2003).

2.1 Users contributions

It is often stated that people are not able to pay because they are too poor. This may be true in individual cases, but many people are able to pay but not willing to put a priority on spending resources on improved water or sanitation. Willingness and ability to pay are regularly confused. Willingness to pay (WTP) is an expression of demand for a service, and is a strong prerequisite for cost recovery because it is a measure of user satisfaction and the desire of users to contribute to a functioning service.

Whenever people say they are not willing to pay, it is important to find out why and to ensure that action is undertaken to solve the underlying problem. Factors negatively influencing willingness to pay include a service that does not meet people's demand, lack of transparency from the community committee, lack of financial capacities, political interference, beliefs about 'free water', competing water sources, etc.

Several methodologies are available to measure willingness to pay (such as behaviour studies, hypothetical behaviour studies, contingent valuation, etc.). While many of these studies will send a clear message that there is willingness to pay for improved services, policy very rarely changes as a result. In rural areas, we suggest limiting willingness to pay studies to survey and focus group discussions at community level, ensuring that the views of women as main water users are investigated and recorded separately from those of the men. This approach will also capture the possibility of community members providing voluntary labour for trench digging, transport, pipe laying, or providing local materials, such as gravel and sand.

2.2 Willingness to pay for sanitation

On-site sanitation is mostly a household responsibility and, as with non-networked water services there are usually no "user fees". However, provision should be made for recovery of the following expenditures: pit digging, construction of the latrine slab; pit latrine/septic tanks emptying fee and rebuilding latrines.

There are two key reasons for dealing with these issues. In highly populated areas such as slums, there is a public health risk arising from neglect of appropriate latrine/septic tanks emptying. In rented houses, households are not willing to pay costly one-time payments for the mechanical emptying of septic tanks. They would rather pay a smaller fee to a manual emptier to removing the top layer of waste, which is then disposed in the vicinity. Excreta disposal situation in many African cities has become dramatic: thousands of tons of sludge from on-site sanitation installations – so-called faecal sludge – are disposed of daily, untreated and indiscriminately into lanes, drainage ditches, onto open urban spaces, into inland waters, estuaries and the sea.

Secondly, in rural communities where open-air defecation is common, demand for improved sanitation is often very low but has a gender dimension. Lack of effective demand can be traced to the lack of female voice in defining spending priorities and unwillingness on the part of male family heads to prioritise paying for sanitation services.

It is possible to determine inner-household differences when demands of women and men are investigated separately. However, sanitation does not rank high in a household priority-setting process and awareness campaigns. Strategies for increasing willingness to pay need to take advantage of modern marketing strategies which focus on basic human emotions, such as pride and shame, creating a greater willingness to pay among men. Such programmes could also, where feasible, provide information about the potential for human waste to be used as a resource in agriculture.

3. Cost calculation and payments

3.1 Cost calculation

In the calculation of the cost of water and sanitation services a range of cost elements need to be included.

- **Investment costs** (well drilling, construction costs, equipment, tools, housing, fencing etc. For these cost we need to take into account their life cycle (when they need replacement) to be able to calculate an inclusive tariff.
- **Recurrent costs** include the maintenance and the administrative tasks for the management of the system, e.g. wages of caretakers and other staff, equipment, materials (chemicals, grease, paint, uniform, gravel sand, cement) and spare parts (nuts, bolts, cupseals, bearings, main tubing, threads, pipe threads), and possible payments for larger repairs
- **Replacement and extension costs**
- **Depreciation** (equipment, facilities, construction, buildings)/life cycle

Suppose we have a handpump system with the following cost components (Table 1)

Table 1. Example of the cost of a handpump system

Basic information	Cost in US$
Investment cost	3500
Recurrent (Functioning) cost per year	700
Estimated replacement-extension costs = 25% of functioning costs/year	25%*700 = 175
Recovery of investment costs (RIC) = estimated 10% investment cost	10%*3500 = 350
Depreciation*= Cost (equipment, buildings etc.)/life cycle	2000/10 = 200
Provision for risk and inflation = 15% of depreciation costs	15%*200 = 30
Number of users	250

Tariff calculation
With the data of Table 1 we can estimate the required tariff. In Table 2 different options are being presented.

Table 2 Example of tariff calculation

Tariff	Cost
Minimum tariff (covering O&M and basic management costs)	(700/12)/250=0.23 US$ per user per month
Sustainable service tariff[1]	(700+200+350+200+35)/250 = 5.94/12 = 0.49 US$ per user per month
Sustainable service tariff[2]	700+200+350+200+35+350+350)/250 = 8.74/12 = 0.73 US$ per user per month

1) The investment costs have been paid by an international NGO and the community does not need to pay interest nor repay the grant.
2) The community has taken a loan and needs to pay an interest of 10% (350) and has to repay the loan of 3500 roughly representing another 350 per year.

3.2 Payments

The most common way of billing for water and sanitation services is by producing a bill. Whatever the system used for billing, the most important principle is clarity: bills must contain enough information for users to understand how much they have to pay and why. It is useful to think about ways and timing of presenting bills to water users, providing one or more places where water bills can be paid. In some cases monthly payments are fine, but in other cases it may be better to charge after the harvesting season or to charge per bucket of water.

Other important issues include who collects the money as this need to be people that are trusted by the community and where is the money kept in a bank account or in a safe and is it generating interest or is it loosing its value because of inflation.

4. Further reading

If you want to explore these issues in more detail you may wish to access a number of additional titles in the internet (or on your CD-Rom) including:

- Agbenorheri, M. and Fonesca, C. (2005) *Local financing mechanisms for water supply and sanitation investments.* Background report for WELL Briefing Note 16 http://www.lboro.ac.uk/well/resources/Publications/Briefing%20Notes/BN16%20Agbenotheri.pdf
- Bolt E., Fonseca C. (2001) *Keep It Working: a field manual to support community management of rural water supply.* IRC Technical Paper Series 36; IRC, the Netherlands http://www.irc.nl/content/download/2602/27266/file/TP36_KeepItWorking.pdf
- Cardone, R., Fonseca, C. (2003).*Financing and Cost Recovery.* Thematic Overview Paper 7; IRC. http://www.irc.nl/content/download/8160/126955/file/TOP7_CostRec_03.pdf
- Cardone, R., Fonseca, C. (2006). *Experiences with Innovative Financing: Small Town Water Supply and Sanitation Service Delivery.* (Background paper prepared for the UN-HABITAT publication, Meeting Development Goals in Small Urban Centres: Water and Sanitation in the World's Cities

5. References

Bolt E., Fonseca C. (2001) *Keep It Working: a field manual to support community management of rural water supply.* IRC Technical Paper Series 36; IRC, International Water and Sanitation Centre, the Netherlands

Hutton, G., Haller, L., and Bartram, J. (2006). Economic and health effects of increasing coverage of low cost water and sanitation interventions. Geneva: Swiss Tropical Institute and WHO

IFAD, (2007). Rural poverty Portal http://www.ruralpovertyportal.org/english/regions/africa/nga/index.htm

Cardone, R., Fonseca, C. (2003).*Financing and Cost Recovery.* Thematic Overview Paper 7; IRC, International Water and Sanitation Centre, the Netherlands

Wikipedia (2008). http://en.wikipedia.org/wiki/Poverty

Water safety plans

Jan Teun Visscher **June, 2008**

Water safety plans

Are being developed to improve the management of drinking water supply systems and to enhance sustained and controlled service delivery

The main concepts involved are:

Health based targets, representing the policy objectives for water safety as defined by what is considered an acceptable risk.

Water Safety Plans to assist the water operator to provide water that is 'safe' for consumption (representing a low health risk)

Independent surveillance, to help ensure that the water operator meets the required targets. Whereas this is an external control function its main orientation needs to be to support water operators in their difficult job

Objectives of Water Safety Plan

Preventing contamination of source waters;

Treating the water to reduce or remove contamination to the extent necessary to meet the water quality targets; and

Preventing re-contamination during distribution, storage and handling of drinking-water.

Key components of a WSP

A comprehensive system assessment to prioritize the health hazards involved base on a sanitary survey and water quality assessment;

Effective operational monitoring to facilitate timely interventions; and

A management plan describing actions to be taken.

Hazards and risks

Numerous contaminants can compromise drinking-water quality

The risk associated with each hazard or hazardous event will depend on the likelihood of occurrence (e.g., certain, possible, rare) and the severity of consequences if the hazard occurred (e.g., insignificant, major, catastrophic).

The aim is to establish and classify the existing risks and identify remedial action.

12

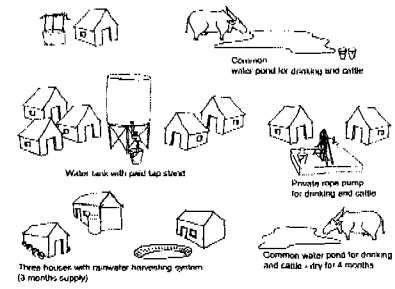
Water supply systems

Include all water supplies people use for consumption and personal use. These may be (a combination of):

- Groundwater based systems
- Surface water based systems
- Rainwater based systems

Each of these systems may involve health hazards

Community water supply



Identification of hazards and risks

By using a combination of techniques:

- Water quality testing
- Sanitary inspection (sanitary survey)
- Check with the consumers and local health staff

Water quality testing

The number of parameters to be tested will depend on the number of users, the potential health hazards and prevailing regulations.

A mayor limitation of water quality testing is that it is just a spot sample that may not be 'representative' for the water system. Therefore it needs to be combined with a sanitary inspection

Rural water supply testing

For rural water supply WHO recommends just a few parameters

- pH, Turbidity, Color, E Coli and Residual chlorine

In special risk areas other parameters such as Fluoride, Arsenic and Nitrate may be included as well

A sanitary inspection (survey)

Is a systematic search for, and evaluation of, existing and potential microbiological and chemical hazards that could affect the safe use of a particular water supply system. It concerns the total water chain from catchment to consumer

Key themes to look at

Coverage – who are the users of the specific system and how many do not have access

Quantity - sufficient to reduce health risk and to meet prevailing water culture.

Continuity – to facilitate access at required time and place and avoid re-contamination

Quality needed to obtain health benefits.

Cost – can users afford the supply

Group exercise

Develop some indicators for two of the five themes mentioned

For example an indicator of speed is kilometer/hour

Difficulties with sanitary inspections

No standardized methodology

Interpretation of field staff differs

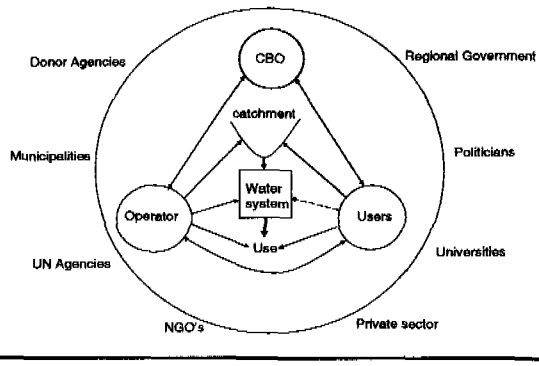
Data are difficult to quantify and compare due to subjectivity of interpretation and observational nature

A partial solution is to take clear photographs of hazards for team comparison

Actor analysis in small groups

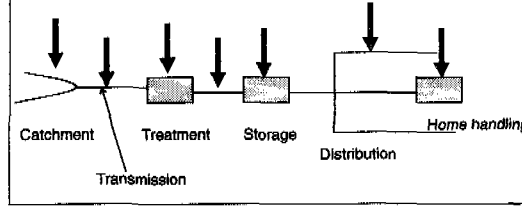
Who are the key actors in a water supply system. Select a community several of your group know and list the main actors and their specific roles

Water supply can have many actors



Hazards from catchment to consumer

piped supply with arrows representing possible hazard that need exploration

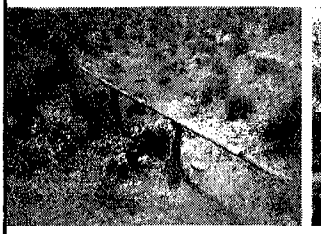


Water source problems (1)

Lack of catchment protection

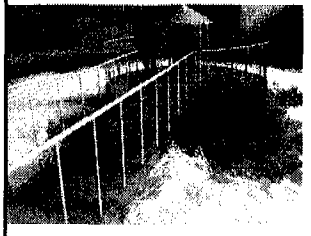
Water quality problem

Sanitary risks

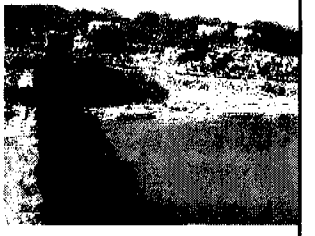


Sanitary risks

Insufficient waste water treatment



Pollution from cattle

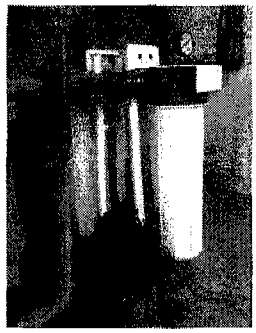


Sanitary risk in a rope and pulley system

Sanitary risks

Lack of protection and maintenance

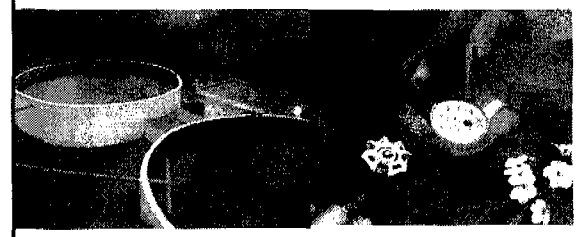
Lack of maintenance



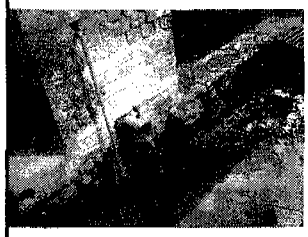

Problems in supply systems (2)

Design problems

Limitations in design

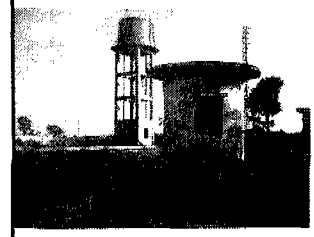


Water loss and health risk

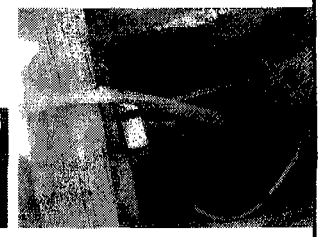



Sanitary risks

Infiltration of drainage water



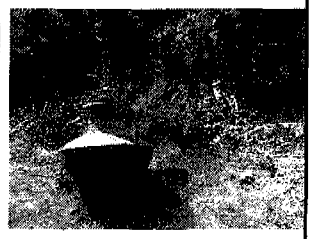
Direct pollution of water



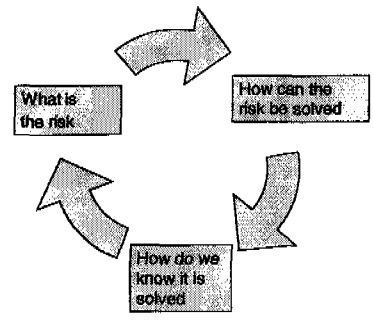
Water storage

Rainwater storage

Is this water safe?



Risk analysis and mitigation



Mitigation actions (1)

Ensure adequate preventive

Arrange for corrective maintenance (repairs of cracks, pumps, leaks, cross connections etc.)

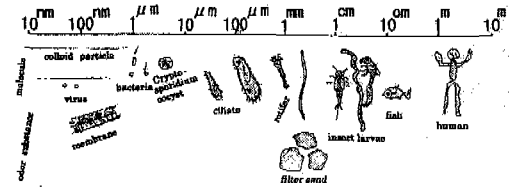
Remove risk factors in the catchment area

Drain infiltration spots

Assure adequate treatment (chemical supply)

Disinfect

What are the biological risks



Mitigation actions (2)

Strengthen management and supervision

Inform users about safe transport and storage and handling of water at home

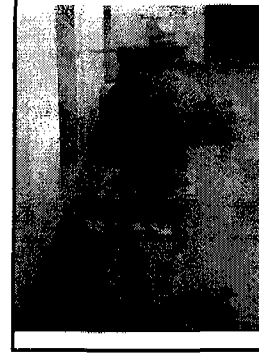
Inform users about possibilities of water treatment at home if supply is not safe

Ensure adequate payment to be able to implement proper O&M

Protected water sources

Apron to drain the water and protect the well

Safe water transport and storage



Water treatment

Groundwater but usually surface water

Catchment protection

RSF (chemical treatment)

MSF (biological treatment)

Membrane filtration

Disinfection

Home treatment

Home chlorination

Solar water disinfection

Monitoring is crucial

To maintain a low sanitary risk monitoring is *essential and needs to be acted upon. What* needs to be explored

- Some of the sanitary inspection parameters (general maintenance, new *risks)*
- Some water quality indicators
- Pressure and flow

Management

Management of the water supply system, the *improvement measures* and the daily operation is vary important. This requires:

- A clear overview of activities set in a time frame
- Staff needs to know for which activities they are responsibilities
- Another key issue are relations with users and if needed they have to be informed about home treatment
- A good but simple reporting system completes the management process

Surveillance

The final aspect is the external surveillance of the performance of the system. This is an external control function, but in view of the difficult conditions of many water supply systems it needs to be seen more as a support function to jointly solve problems the water operator may face.

Steps to develop a water safety plan

1. *Establishment of a WSP development team*
2. Description of the system
3. Assessment of hazards and establishment of risks
4. Identification of critical control points and measures
5. Establishment of critical risks
6. Development of a risk monitoring system
7. Identification of corrective actions
8. Documentation
9. *Verification / evaluation*

Resource Note on Water Safety Plans[1]

By J.T. Visscher, 2008

1. Introduction

A wide range of water supply systems exist in the world. These systems may incorporate different technologies, from relatively simple systems such as wells with handpumps to sophisticated treatment plants with house connections. A common feature of many of the smaller water supply systems is that they are operated and maintained by local operators including small Community Based Organizations (CBOs) with limited specialist skills, (financial) resources, amounts of time, formal training and back-up support.

The water supply systems may be old and already incorporate many problems and operators may have very few tools and equipment to identify and rectify faults. In theory they may have support from external bodies (usually an arm of local or national Government) to provide support for problems beyond their capacity but in practice this is often not existing or it is not timely and not effective.

An important way to support these water operators is to help them develop a water safety plan (WSP) to manage their water supply system safely. A WSP is an effective means of consistently ensuring the safety of a drinking-water supply through the use of a comprehensive risk assessment and risk management approach that encompasses all steps in water supply from catchment to consumer.

A WSP is part of a broader framework for safe drinking water supply (Figure 1). This framework comprises three components:

- **Health based targets**, representing the policy objectives for water safety as defined by what is considered an acceptable risk. These targets that are reflected in water quality criteria are not static and may change over time. Criteria for turbidity levels in the USA for example have fallen from 10 NTU in the 1960s to 1 NTU today.
- **Water Safety Plans** to assist the water operator to provide water that is safe for consumption (as will be discussed below); and
- **Independent surveillance,** to help ensure that water operator meets the required targets. Whereas this is an external control function its main orientation needs to be to provide support to water operators to help them overcome the difficulties in operating their water supply system.

[1] The main resource used for this note is: Water Safety Plans, managing drinking water quality from catchment to consumer (2005) by Davidson, A., Howard, G., Stevens, M., Callan, P., Fewtrell, L., Deere, D. and Bartram, J., WHO.

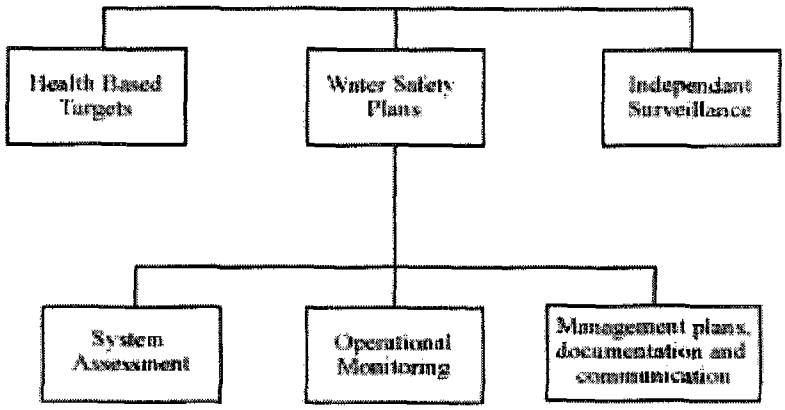


Figure 1. Framework for safe drinking water supply

The primary objective of a water safety plan is to ensure safe drinking-water by:

- Preventing contamination of source waters;
- Treating the water to reduce or remove contamination that could be present to the extent necessary to meet the water quality targets; and
- Preventing re-contamination during distribution, storage and handling of drinking-water.

These objectives are equally applicable to large piped drinking-water supplies, small community supplies and household systems and are achieved through:

- Development of an understanding of the specific system and its capability to supply water that meets health-based targets;
- Identification of potential sources of contamination and how they can be controlled;
- Validation of control measures employed to control hazards;
- Implementation of a system for monitoring the control measures within the water system;
- Timely corrective actions to ensure that safe water is consistently supplied; and
- Undertaking verification of drinking-water quality to ensure that the WSP is being implemented correctly and is achieving the performance required to meet relevant national, regional and local water quality standards or objectives.

A Water Safety Plan (WSP) comprises three essential components that are the responsibility of the water operator in order to ensure that drinking-water is safe. These are:

- A comprehensive system assessment to prioritize the health hazards involved;
- Effective operational monitoring to facilitate timely intervention; and
- A management plan describing actions to be taken.

2. A comprehensive system assessment

The comprehensive system assessment aims to determine whether the drinking-water supply chain (up to the point of consumption) as a whole can deliver water of a quality that meets the prevailing targets. It includes the systematic and detailed assessment and prioritization of hazards in the system as a whole. In the literature this assessment is focused on the aspects that are under the control of the water operator. In rural water supply, however, a broader approach is needed that also actively involves the users as they may re-contaminate the water and therewith put in jeopardy the work done by the operator.

Although there are numerous contaminants that can compromise drinking-water quality, not every hazard will require the same degree of attention. The risk associated with each hazard or hazardous event may be described by identifying the likelihood of occurrence (e.g., certain, possible, rare) and evaluating the severity of consequences if the hazard occurred (e.g., insignificant, major, catastrophic). The aim should be to distinguish between important and less important hazards or hazardous events.

A semi-quantitative scoring can be used relying to a significant extent on expert opinion to make judgments on the health risk posed by hazards or hazardous events. A "cut-off" point must be determined, above which all hazards will require immediate attention. On the other hand, there is little value in expending large amounts of effort to consider very small risks.

It is important to take an action oriented approach from the beginning. The review of the system will show a number of hazards which sometimes may be very serious. It does not seem fair to just leave the community and write a report instead of already exploring possible 'emergency' improvements the water operator or community members can make. In high risk systems for example it can be considered for example to suggest as a minimum that water needs to be boiled, chlorinated or treated by solar disinfection at household level at least for children and elderly people.

The system assessment usually comprises:

- Water quality analysis
- A sanitary inspection

2.1 Water quality analysis

Measuring water quality is important, as the water may comprise substances that are detrimental for health. Measuring water quality is not always easy to accomplish and therefore it is better to focus on a few key indicators. The WHO approach to community water supply includes four main parameters:

- Turbidity
- E. coli counts
- residual chlorine (if applied)
- pH (if chlorine is applied)

In addition it may be explored if some chemical contaminants need to be measured such as fluoride or arsenic (if this type of contamination exists in the area). An important limitation of water quality assessment is that it only provides a snapshot of the situation and the

sample may not be representative of conditions at other moments. This can be partly overcome by asking the water operator and/or community members about the situation. They will be able to tell for example if the turbidity of the water is always the same and also if for example there are many children with diarrhea.

2.2 Sanitary Inspection

A sanitary inspection consists of a systematic review of possible hazards that may occur in the water catchment area, the water source and the water supply system. Preferably this is done by experienced sector staff, together with community members and staff from the local organization responsible for the management of the system. After some training, subsequent inspections can be carried out (several times per year) by the local operator or water committee without external specialist support.

The inspection aims at identifying all the hazards that are potential and actual causes of contamination of the supply. It is concerned with the physical structure of the supply, its operation, and external environmental factors. It involves looking at all water sources and systems in a community (water catchment area, well, handpump, water intake, transmission main, treatment system, water storage, distribution network and water use) to identify possible risks for the users (WHO 1997).

Sanitary inspections are the basis to establish corrective actions in the system, the community, and community habits, to eliminate or reduce the hygiene risks. Figure 2 shows an overview of the sanitary hazards in a shallow well.

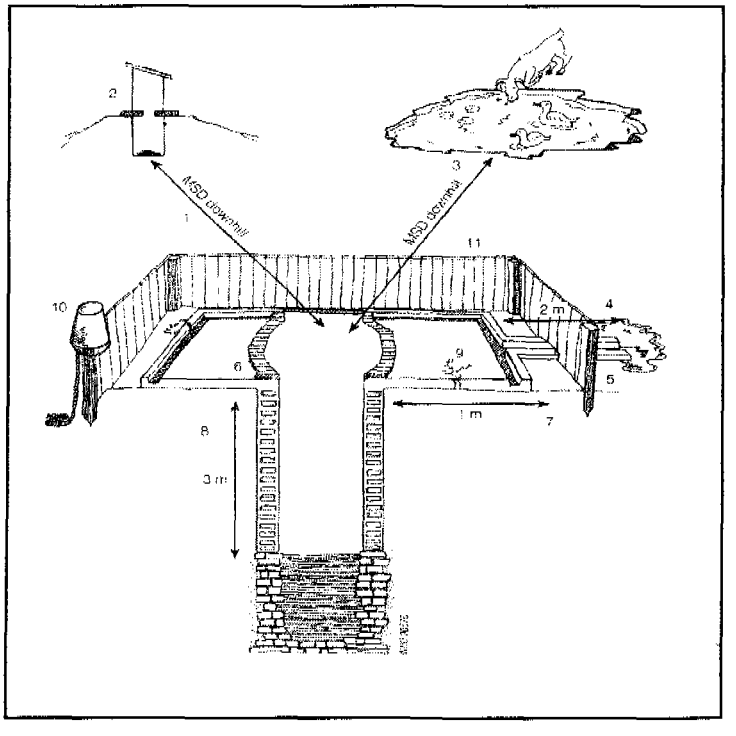


Figure 2. Pollution hazards in an open bucket well (WHO, 1997)

Possible hazards include:

- Potential sources of pollution (latrines, ponds or pools) close to the well. Harmful substances from these sources may travel underground to the well. The minimum safety distance (MSD) depends on local conditions including the type of subsoil and direction of groundwater flow.
- Problems with the well lining, headwall and cracks in the well cover
- Unhygienic handling and storage of the bucket

Sanitary inspections and water quality analysis are complementary activities that preferably are carried out at the same time. Whereas the sanitary inspection identifies potential risks, the water quality analysis establishes the level of contamination at the point and the time of sampling. The sanitary inspection is essential for the interpretation of the results of the water quality analysis and to prioritize remedial actions.

Climate conditions may have an important influence on water quality. Particularly in micro-catchments these changes can be of short duration and may be difficult to detect with occasional water quality testing. The sanitary inspection can be of great help in such case. Waste water discharge often is more critical in the dry season when less water is available. First rains after a dry spell can severely enhance the microbial and chemical contamination of a water source and increase turbidity levels.

The community is an important source of information. They know about changes in water quality during and over the years in terms of turbidity, colour and taste (salinity, iron). Also they may be able to give an indication of the incidence of water borne diseases in the community. Hence their information can help to confirm the findings of a sanitary inspection. One would expect a high incidence of diarrhea if the sanitary inspection shows that there are considerable sanitary risks from the source and/or inadequate hygiene habits.

3. Operational monitoring and control measures

The comprehensive assessment will allow identifying measures that will collectively control identified risks and ensure that targets are met. Measures may range from immediate repairs of deficiencies to longer term improvement projects, strengthening operation and management of systems and improvements in water handling and storage.

In addition to essential repairs and improvements it will be needed to identify the water provision and water quality improvement processes and identify for each of these 'control measures the appropriate means of operational monitoring to ensure that any deviation from required performance is rapidly detected in a timely manner. The water safety plan should propose control measures for both microbial and chemical hazards where possible. However, in most cases, particularly the control of chemical hazards must be addressed at the design stage.

Operators of small systems may not have the necessary equipment for water quality testing. They may have to rely on sanitary surveys in combination with feedback from their users on possible outbreaks of diarrhea. This underscores the necessity for occasional checks by a water surveillance agency.

The level of control applied to a hazard should be proportional to the associated ranking. Assessment of control measures involves:

- Identifying whether existing control measures for each significant hazard or hazardous event from catchment to consumer control the risk to acceptable levels;
- Evaluation of possible alternative or additional control measures preferably based on the multi barrier concept to reduce the risk of contaminants passing through the system.

4. Management plans

Management (and repair) plans are needed that describe actions to be taken during normal operation or incident conditions as well as the necessary upgrading and improvement steps. These plans also need to include the monitoring and communication plans and establish the required external support. Most local operators of community water supplies will require support to develop system-specific water safety plans. This may be done by developing generic water safety plans for particular technologies to be applied across a region or country. Most likely this is not sufficient however and additional support will be required from more experienced staff to develop a plan for each water supply system.

5. References and further reading

If you want to explore these issues in more detail you may wish to access a number of additional titles on the internet (or on your CD-Rom) including:

Davidson, A., Howard, G., Stevens, M., Callan, P., Fewtrell, L., Deere, D. and Bartram, J. (2005) *Water Safety Plans, managing drinking water quality from catchment to consumer*, WHO. http://www.who.int/water_sanitation_health/dwq/wsp170805.pdf

WHO, (1997). *Guidelines for drinking water quality. Volume 3 Surveillance and control of community supplies.* Geneva: WHO.
http://www.who.int/water_sanitation_health/dwq/gdwq2v1/en/index2.html

Day 5

Governance

June, 2008

Definition of governance

There are many definitions of governance

Some place more emphasis on the role of government

Others focus on the interaction between different role players and the need for co-operation

Most definitions refer to **decision making** and how this takes place in relation to public goods and services

Most recognise that governance is much more than government

What is governance?

Governance is about the processes by which decisions are made and implemented

It is the result of interactions, relationships and networks between the different sectors (government, public sector, private sector and civil society) to ensure optimal services

It involves decisions, negotiation, and different power relations between stakeholders to determine who gets what, when and how.

Governance systems

Governance systems range from centralised, top down approaches to more decentralised and participatory approaches

Increasingly WASH services are being decentralised

Good governance for WASH services will therefore require participatory approaches that are shaped by stakeholders and their relationships at the local level

What is water governance?

Water governance is the set of systems that control decision-making of water management and water service delivery

Water governance is about who gets what water, when and how

Water governance is profoundly political particularly where there is competition for limited water resources

Water governance systems usually reflect the political and cultural realities at national, provincial and local levels

More effective water governance

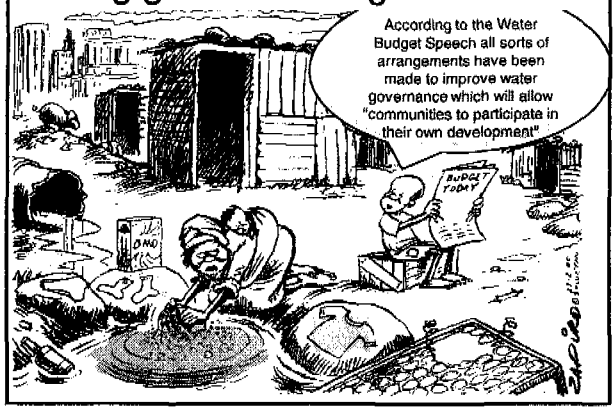
Needs to address:

Policy and legislative frameworks that protect water resources and ensure water for social and economic development

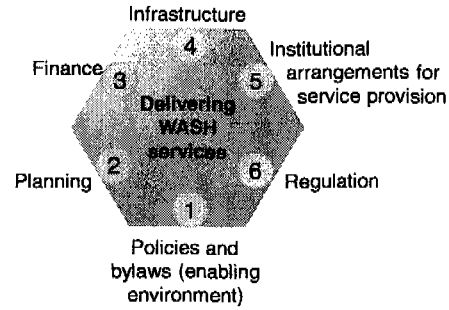
Institutions for water management that facilitate **participation** of all stakeholders in a transparent, accountable, gender sensitive and equitable manner

Decisions making mechanisms and **regulation** that achieve responsible use of political power, optimal use of resources, sustainable development and ecological sustainability

Getting governance right

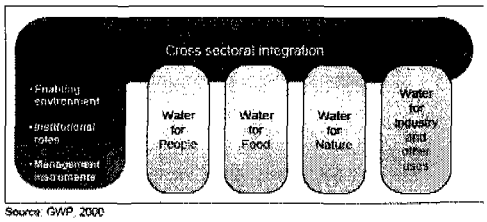


Key elements to deliver WASH services



An IWRM approach

- Tackles complex interrelated problems
- Promotes integration among sectors



Source: GWP, 2000

Helps water managers to understand the wider implications of their actions and to collaborate more effectively

Setting the scene

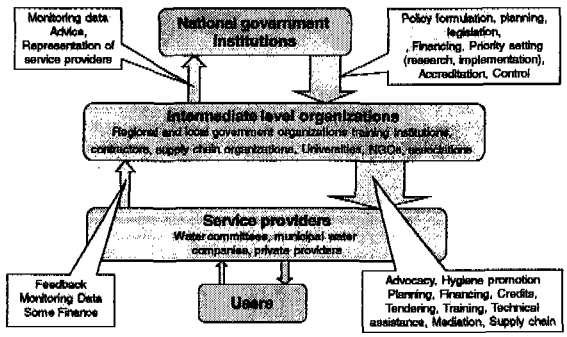
To provide sustainable services, water and sanitation providers need:

Good legislation, regulation and resources

Adequate support (training, advice, materials etc.)

Small providers are essential to enhance coverage as planned in the Millennium Development Goals

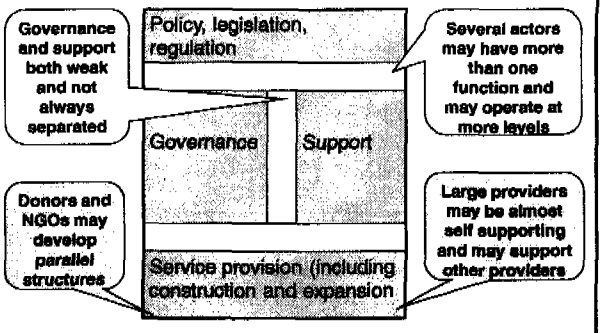
A confusing situation with many actors



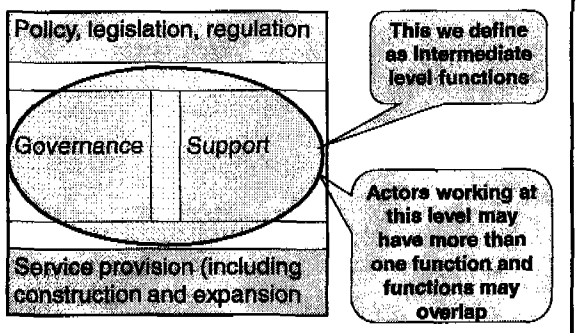
Looking at functions

National level functions	Orientation (policy), legislation, regulation, planning, resource allocation
Intermediate level functions	Governance of service provision (Planning, decision making, organization, finance (tariff setting) and control; *Informing and advising national level*)
	Supporting Service Providers (Training and advise, supply chain, conflict mediation etc.)
Service provision level functions	Service development and expansion
	Service provision (O&M, administration, monitoring/reporting

Looking at functions and actors



Intermediate level functions



Local governance for equitable service

Functions	Principles good governance (Rogers and Hall, 2003)
Planning / organization	Open and transparent
Strategic decision making	Inclusive and communicative
Resource allocation	*Coherent and integrative*
Tariff setting	Equitable and ethical
Monitoring and control	Accountable
Informing and advising (national) policy level	Efficient
	Responsive and sustainable

Supporting service providers

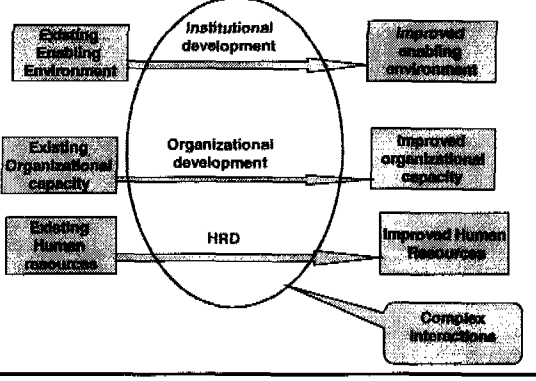
Technical assistance and advice (technological, socio-economical, administration, management, environmental and health)

Facilitation and conflict mediation

Financing (grants, credits, tariffs)

Capacity Development (which is much more than training)

Dimensions of capacity development



In practice CD has narrow focus

Institution	Sector reform in many countries (Transfer of responsibilities not resources)
Organization	Limited attention except in large utilities (no benchmarking, no incentives, high staff turnover, political interference)
HRD	Training receives most attention (mostly ad-hoc and project based, no coordination and collaboration).

CD of intermediate level is hardly addressed

Actors & local governance

Exercise

- Identify main actors responsible for local WASH services in your country (or district)
  (buzz groups – flip charts - 10 minutes)
- Identify the responsibilities of these actors
  (buzz groups – extra column on flip chart - 20 minutes)
- Discuss and rate the way the actors are implementing their responsibilities
  (1 = good, 2 = satisfactory, 3 = bad, 4 = not at all)
  (buzz groups – extra column on flip chart – 10 minutes)
- Discussion
  (plenary – 10 minutes)

Actors & performance

Actors	Functions	Performance 1 = good, 2 = satisfactory, 3 = bad, 4 = not at all

Communication

is the 'how' of transmitting information or ideas

is intended to inform or persuade or motivate (behaviour change)

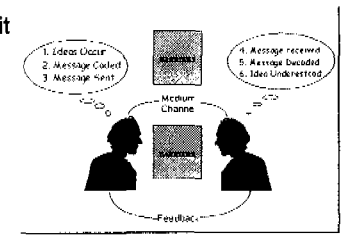
has a specific method and a specific audience

Communication

is not just about giving messages

goes two ways – it is an interaction with an audience

Requires that communicators listen as well as speak



Good governance

June, 2008

What is good governance?

Good governance involves constructive co-operation between the different sectors to ensure:

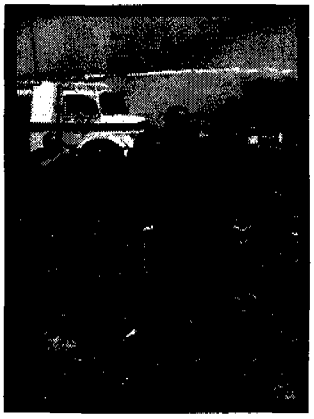
- efficient use of resources
- responsible use of power, and
- effective and sustainable service provision

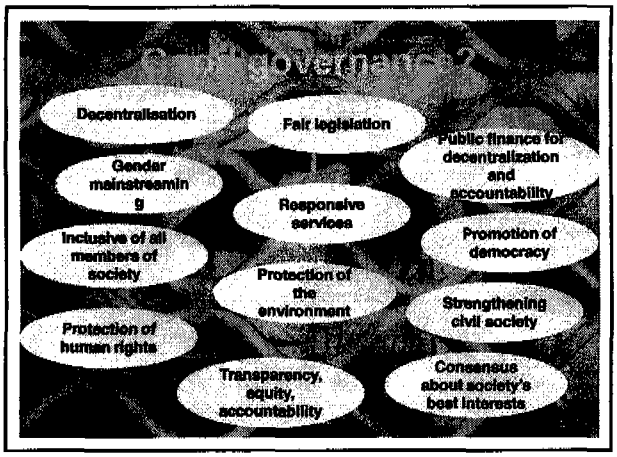
Good governance emerges when stakeholders engage and participate with each other in an inclusive, transparent and accountable manner to accomplish better services free of corruption and abuse, and within the rule of law

Good governance?

This photo is from South Africa, taken in October 2007

Police were brought in to manage community protest *over poor services in the* Western Cape





Some key definitions

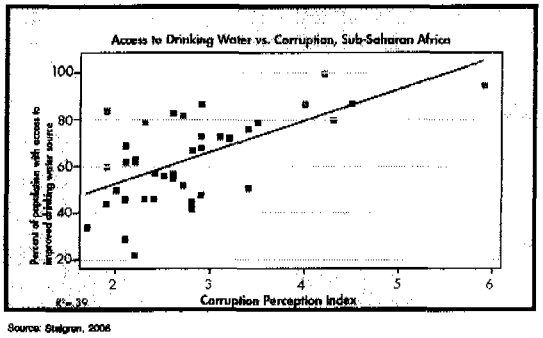
- **Transparency** = sharing information and acting in an open manner

  Honesty/ Integrity = working and acting in ways that reflect known best practices, and following ethical principles

  Accountability = objectively holding people and agencies responsible for their performance

  Corruption = the abuse of entrusted power for private gain

Correlation CPI – WSS coverage



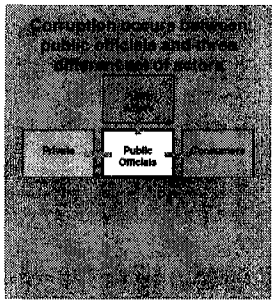
Source: Stalgren, 2006

Corruption interaction framework

Public to public
- Diversion of resources
- Appointments and transfers
- Embezzlement and fraud in planning and budgeting

Public to private
- Procurement collusion, fraud, bribery
- Construction fraud and bribery

Public to Citizen/consumer
- Illegal connections
- Falsifying bills and meters



Source: Janelle Plummer

PUBLIC to PUBLIC interactions	Anti-corruption Measures
Policy-making/Regulating Diversion of funds Distortions in decision-making, policy-making	• Policy and tariff reform • Separation policy and implementation • Transparent minimum standards • Independent auditing
Planning and budgeting • Corruption in planning and management • Bribery and kickbacks in fiscal transfers	• Citizen oversight and monitoring • Technical auditing • Participatory planning and budgeting • Information
Management & Program Design Appointments, transfers Preferred candidates Selection of projects	• Performance based staff reforms • Transparent, competitive appointments

PUBLIC to PRIVATE interactions	Anti-corruption Measures
Procurement Bribery, fraud, collusion in tenders	Simplify tender documents Bidding transparency Independent tender evaluation
Construction Fraud/bribes in construction	Integrity pacts Citizen oversight and monitoring Technical auditing
Operations Fraud/bribes in construction	Citizen auditing, public hearings Benchmarking SSIP support mechanisms

PUBLIC to Consumer interactions	Anti-corruption Measures
Construction Community based WSS – theft of materials Fraudulent documents	Corruption assessments Citizen monitoring and oversight Report cards Transparency in reporting
Operations Admin corruption (access, service, speed)	
Payment systems meter, billing and collection – fraud and bribery	Citizen oversight and monitoring Complaints redressed Reform to customer interface (e.g. women cashiers)

PUBLIC to CONSUMER interactions	Early warning indicators	Anti-corruption Measures
Construction • Community based WSS – theft of materials • Fraudulent documents	• Loss of materials • Infrastructure failure	• Corruption assessments • Citizen monitoring and oversight • Report cards • Transparency in reporting
Operations • Admin corruption (access, service, speed)	• Low rate of faults • Lack of interest in connection campaigns • Night time tanking	• Citizen oversight and monitoring • Complaints redressed
• meter, billing and collection – fraud and bribery	• Unexplained variations in revenues	• Reform to customer interface (e.g. women cashiers)

Report cards in India

Public Affairs Centre (PAC) in Bangalore developed report cards for citizens to rank performance of public service agencies (including water)

Monitored public satisfaction with staff behaviour, quality of service, information, and corruption (speed money)

Initially showed lows levels of public satisfaction, agencies not citizen friendly, lacked customer orientation, corruption a serious problem

Second survey 5 years later revealed limited improvements

Third survey 4 years later showed noticeable progress by all agencies

Report cards in India

Report cards influenced key officials in understanding perceptions of ordinary citizens

Public agencies launched reforms to improve the infrastructure and services

Government agencies showed greater transparency and more responsiveness

CRCs acted as a catalyst in the transformation of services in Bangalore

Lesotho Highlands Water Project

Largest international water transfer was from Lesotho-South Africa

Construction contracts awarded fraudulently

Foreign companies paid bribes

Successful prosecutions set precedents

Source: Earle & Turner

Pipe manufacturers in Colombia

Procurement is vulnerable to price fixing and collusion

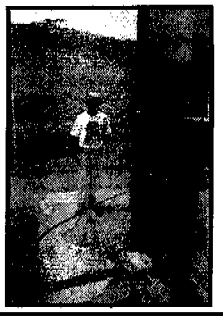
Private sector pipe manufacturers in Colombia introduced self-regulation

Adopted an integrity pact not to pay or accept bribes

Support given by professional association, Transparency International and government

Half of 167 manufacturers have signed up

Prices have reduced by 30%



Phnom Penh, Cambodia

Transformation of a public utility under difficult post- conflict (civil war) conditions

High levels of illegal connections and unaccounted for water, including bribery of utility officials

Indicators	1993	2006
Staff per 1,000/connections	22	4
Production Capacity	65,000 m^3/day	235,000 m^3/day
Non Revenue Water	72%	8%
Coverage area	25%	90%
Total connections	26,881	147,000
Metered coverage	13%	100%
Supply Duration	10 hours/day	24 hours/day
Collection Ratio	48%	99.9%
Total revenue	0,7 billion riels (US$180,000)[1]	34 billion riels (US$8.7 million)
Financial situation	Heavy subsidy	Full cost recovery

Phnom Penh, Cambodia

Corruption was tackled effectively, due to

- Leadership
- Culture of change
- External support

Led to reform and new investment

Phnom Penh, Cambodia

Human resources management improved

Revenue collection improved

Rehabilitation of services achieved harnessing local resources

Illegal connections were tackled, reducing unaccounted for water

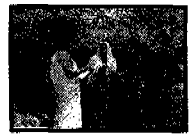
Tariffs were increased

Sanitation in Kerala

The NGO SEUF targeted diversion of funds to reduce costs (by ½ to ⅔) in latrine construction

Mix of strategies to tackle corruption:

- more information
- *extra checks & spot checks*
- public postings
- double signatures
- action on complaints at lowest level
- referral of problems



Money diverted from education in Uganda

Public expenditure tracking (PET) survey in Uganda

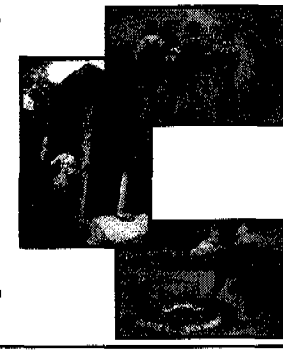
Tracked central funds allocated for school construction

Only 13% of funds arrived at schools

Transparency campaign *published, information about the grants*

Led to capture being reduced from 87% to 18%

Schools near newspaper and communication points did better in receiving their funds



Diagnose

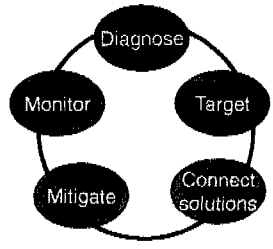
A key starting point is to understand what types and level of corruption exist

Frameworks can be used to map different types of corruption and help to identify appropriate solutions

Severe lack of diagnosis of corruption and its impacts on the poor in the WASH sector

Poorly informed anti-corruption activities risk merely hardening or shifting it to other forms

Look before you leap



Key messages for promoters

Be informed and anticipate

Be inspired by examples and success stories

Use multiple strategies to improve access to information, transparency and accountability…and prevent corruption

Act in partnerships

Learn what works

Links and further information

www.waterintegritynetwork.net is the website of the Water Integrity Network based at Transparency International in Berlin

www.irc.nl/transparency includes materials from the IRC International Water and Sanitation Centre and links to other useful sources

www.transparency.org is the website of Transparency International, a global civil society organisation in anti-corruption

Resource Note on Governance & Transparency[1]

By J.T. Visscher, 2008

1. Introduction

Many countries are undergoing a process of decentralisation and governance reform. It is argued that this is crucial for sustainable economic growth and development; for improved service delivery; and for democratic health and people's empowerment. Decentralisation and governance reform process particularly affects the water and sanitation sector, where it is argued that high quality local governance is essential for the provision of appropriate and sustainable services.

The challenge this note addresses is to understand what good governance means at the local level for improved water, sanitation, and health (WASH) services.

Good local governance is necessary to achieve sustainable water and sanitation services and sustainable economic growth and development.

Governance is about the processes by which decisions are made and implemented. It is the result of interactions, relationships and networks between the different sectors (government, public sector, private sector and civil society) with the purpose of ensuring optimal services. It involves decisions, negotiation, and different power relations between stakeholders to determine who gets what, when and how.

Governance operates at different levels, from the national level to households within a community. Governance shapes the way a service or set of services are planned, managed and regulated within a set of political social and economic systems to ensure sustainable services.

Many stakeholders are involved. At local level, stakeholders include local government (councillors and officials), community based organisations, NGOs, water services providers, community representatives, local associations, and possibly traditional leadership. Not least, stakeholders at local level include the users of services.

Good governance achieves water, sanitation and hygiene services that are sustainable, in which stakeholders, including the most vulnerable in society, have a say in key decisions and where access is equitable and fair. Good governance involves constructive co-operation between the different sectors.

Good governance can only emerge when stakeholders engage with each other in an inclusive, transparent and accountable manner to accomplish better services free of corruption and abuse, and within the rule of law. The basic characteristics of good governance are met when:

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[1] The main resources used for this note are J. de la Harpe, 2008, Strengthening local governance for improved water and sanitation services, Delft, IRC and Shordt, K., Stravato, L., and Dietvorst, C. (2006) About Corruption and Transparency in the Water and Sanitation Sector , Thematic Overview Paper 16, Delft: IRC

- there is **participation** of all stakeholders to jointly identify the best interests of the community and the most appropriate approach to reaching sustainable services
- decisions are taken in terms of rules and regulations in a **transparent manner**, with good accountability by among others ensuring that all information is freely accessible to those who are affected by decisions
- there is **equity and inclusiveness** of all members of society in development, particularly the most marginalised, with an emphasis on ensuring that the interests of women and men are included
- **fair legislation** (rules) is implemented objectively with full protection of human rights
- services are **responsive** so that the needs of consumers are addressed within a reasonable time period and in an efficient and effective manner

Good governance ensures that all stakeholders, including the poor and disadvantaged have an opportunity to influence development decisions that affect their lives. It can take years for a country to achieve good governance, because different stakeholders and groups in society need to negotiate how things are done and how resources are allocated. What works in one country may not work in another country. Countries need to create their own good governance frameworks, through national and local participatory processes. "Without 'good', or at least 'good enough', governance the fight against poverty cannot be won".

What is water governance?

Water governance is the set of systems that controls decision-making with regard to water management and water service delivery; simply put, water governance is about who gets what water, when and how. There is a profoundly political element to water governance, particularly in areas where there is competition for limited water resources. As a result, systems of water governance usually reflect the political and cultural realities at national, provincial and local levels.

Mismanagement of water is often characterised by a lack of adequate water institutions, conflicting and competing interests amongst water users and weak decision making structures, a fragmented management approach that deals with sectors in isolation from each other, lack of mechanisms for public participation, and poor implementation of water policies, laws and regulations. In a situation where the requirements for water are greater than the available water, there are no transparent strategies for water allocation to achieve equity and sustainable water development.

More effective water governance needs to start with good policy and legislative frameworks that ensure sufficient water for social and economic development , that there is equitable access to this water, and that water resources are protected against over exploitation so that there is water for both the environment, and the future. Institutions for water management must facilitate participation by all water users in a climate of trust,

where there is joint responsibility for protecting and controlling water resources in an open and transparent manner.

Water governance systems are critical to achieving sustainable development, particularly since water is key to development. Water governance needs to achieve a balance between socioeconomic development and ecological sustainability. This requires the right mix of stakeholders, informed decision making, and an environment where water laws and regulations are enforced.

Good local governance for sustainable WASH services

Local governance is the set of policy frameworks, structures, relationships and decision making that takes place at the local level to deliver a service or achieve an objective. Key elements for sustained water, sanitation and hygiene services include:

- an enabling environment which at the local level includes the policies and by-laws within which water, sanitation and hygiene services are delivered
- planning services
- finance
- infrastructure (development)
- institutional arrangements for providing the services (water service provider)
- regulating the service according to policy and by-laws

This note focuses on governance of water, sanitation and hygiene (WASH) services, where governance primarily takes place at the local level. Governance of WASH at the district level is distinct from governance of water at river basin (catchment or aquifer) level to achieve integrated water resource management (IWRM). However, the two are linked. The Global Water Partnership defines IWRM as "a process that promotes the co-ordinated development and management of water, land and related resources, in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems". Although WASH governance is distinct from IWRM, it shares this aim of environmental sustainability, and in as much as it deals with the exploitation of water resources clearly needs to be part of wider IWRM. In recent years there has been a growing move towards implementing IWRM at levels below the river basin (bottom up IWRM) in which WASH is a crucial element. The Multiple Use Services (MUS) approach, in which service providers are encouraged to move beyond the traditional focus on water for domestic use and to also look at small scale productive use at the homestead level, is one example of a bottom up approach to IWRM.

Water, sanitation and hygiene are part of integrated development, and thus decisions about WASH services are linked to other development decisions. Decision making and implementation for WASH services involves not only water and sanitation sector stakeholders, but also other development sectors within local government, such as electricity, health, transport, waste management, etc. WASH governance is therefore part of the governance for local integrated development.

Institutional arrangements for service provision

Water, sanitation and hygiene services can be provided by a range of entities (such as community based organisations, NGOs and the private sector). Increasingly local governments recognise that they need to make use of these, particularly where they do not have the capacity to provide efficient, effective and sustainable services, such as in remote rural areas.
To ensure good performance, transparency and accountability, local water services should function with a clear contract, which meets local regulations and against which performance is monitored. Local government is responsible for ensuring compliance with by-laws, and for monitoring the quality, quantity and overall delivery of the services. Institutions responsible for WASH, such as municipalities, governorates, districts, community based organisations and so on, often lack the necessary capacity, skills and resources to fulfil their governance responsibilities effectively. Responsibilities are often devolved without the necessary matching resources and support.

Local level bodies should not be left to work through these problems alone. Identifying the causes of the problems and sources of support both in terms of building skills, and in establishing mechanisms by which stakeholders can become effectively engaged in decision making is one of the key challenges of decentralisation. Local governance for improved WASH services therefore needs the active support of institutions and policy makers at regional / provincial and national level.

2. *Transparency & accountability*

Corruption undermines water and sanitation services. It is those without a voice, the poor, who are systematically deprived by corrupt systems. Using resources honestly and effectively, rather than using more resources is arguably an answer to achieving the Millennium Development Goals (MDGs) for sustained water and sanitation services that reach the poor.

Transparency and honesty are everyone's business. Every country seems to be subject to corruption. None, for example, received a score of 10 out of 10 (100% excellence) on the well-known Transparency International Corruption Perceptions Index. Transparency and honesty have been on the agenda of civil society institutions for a long time. In the 1960s and 1970s there were the people's movements and participatory programmes established around leaders such as Paolo Freire. Subsequently there were applications to sectors such as community development and health by Robert Chambers (1992) in his participatory approaches, to gender/water by Lyra Srinivasan (1990) and to health by David Werner (1978), among others.

The strategies were sculpted to include transparency, open decision-making, participation by the poor, voice and choice, fair pricing, responsiveness and accountability. However, these participatory approaches were not mainstreamed at that time. The last ten years have seen a resurgence of interest and a willingness to address transparency and

corruption, from international agencies, many governments, citizen groups, media and non-governmental agencies.

However a fundamental challenge remains: It is easy for governments, international agencies and institutions to say that they want improved and honest governance; it is much less easy to change their structures and their relationships with vested interests and with poorer groups to allow this to happen (IIED, 2004).

We use the following definitions

- **Corruption** is the abuse of entrusted power for private gain;
- **Honesty**: trying to work and act in a way that reflects known best practices; and
- **Transparency** refers to sharing information and acting in an open manner.

Table 1. shows a range of dishonest/corrupt practices in water and sanitation provision, adapted from the fine paper on public service delivery by Jennifer Davis (2004). The table highlights the point that corruption is a function of transactions among people — what one actor transacts with another.

It has been estimated that corruption diverts perhaps 30% from the billions of dollars spent annually for international development loans (Dudley, 2000). In one of several studies, Daniel Kaufmann, Director of Global Governance at the World Bank Institute estimates that an improvement in the rule of law (or, say, control of corruption) from the current relatively poor to merely average performance could result in a fourfold increase in per capita incomes and a reduction in infant mortality of a similar magnitude (Kaufmann, 2003).

To improve governance and reduce corruption, at least 12 international conventions and guidelines, and at least 7 donor policies have been prepared, largely over the past decade (see the list of these, together with references to procurement and business guidelines in appendix 4). These include the U.N. Convention Against Corruption (2003) signed by 128 nations.

The implementation record for these conventions and policies is somewhat disappointing. Many observers argue that the enforcement of these policies and conventions in each nation is a key global challenge (Swardt, 2005).

The water and sanitation sector

In the water sector, some estimates indicate that 20% to 70% of resources could be saved if transparency were optimized and corruption eliminated. Much of the water sector is focused on construction, with characteristics that expose it to corruption: competition for contracts, numerous levels of official approvals and permits, the uniqueness of the projects, opportunities for delays and overruns, and the need for rapid work (Stansbury, p. 36, Transparency International). Estache and Kouassi, (2002) compared productivity among 21 water companies in Africa and found that nearly two-thirds of their operating costs were due to corruption. Seen from this point of view, good governance and transparency could free up most of the resources needed to achieve the Millennium Development Goals..

Table 1. Corruption in water and sanitation service provision

	Customers	**Professional engineering staff. Agency managers.**	**Elected (and unelected) leaders**	**Contractors**	**ESAs, donors, central governments**
Low technical staff	Bribes to falsify meter reading, conceal illegal connections. Failure to do assigned work. Over-charging.	Payments for job placement, promotions.		Collusion concealing substandard work.	
Professional engineering staff. Agency managers.	Speed money for faster maintenance, for connections, repairs. Kickbacks for non-payment.	Collusion in tendering Concealing sub-standard work. Payments for promotions, transfers.	Collusion in selection + approval of plans/schemes. Kickbacks. Payments for appointments.	Kickbacks for tenders, collusion substandard construction and under-performance in contracts.	Collusion in approving inferior projects, and in not investigating corruption; pressure to spend money.
Elected (and unelected officials)	Kickbacks for connections or to avoid disconnections, avoid payments.	Payments for transfers, promotions, appointments.	Collusion/kickbacks to senior politicians	Tendering kickbacks and free services.	Funding poorly designed schemes + activities not reflecting best practice.
Contractors		Contract kick-back Conceal sub-standard work.	Tendering kick-backs.	Collusion in contract bids.	Lack of monitoring: fear of "scandal".

3. Some lessons learned

The extraordinary pioneering work of Transparency International, founded in 1993, has been instrumental in legitimizing efforts to focus on transparency, corruption and honesty around the world. It has stimulated international institutions – such as UNDP, the OECD, the World Bank — to develop policy and programmes. With this, a greater depth of understanding has emerged. Within the water sector, understanding how honesty can be subverted and corruption enabled has been the subject of a small number of recent

research studies and action programmes. The results are reflected in the lessons learned below.

Decentralization and privatization are not immediate solutions

Some significant macro-reforms in governance and development assistance ... such as decentralization and privatization...were strongly advocated by international agencies, in part as a way of improving effectiveness and reducing corruption. These reforms have not, however, provided solutions as rapidly as foreseen and they have raised some new challenges (Barlow, 1999; Bailey 2003).

In their interesting overview, Kolstad and Fjeldstad (2006) show that the relation between decentralization and corruption is complex, depending on other variables such as the degree of social and economic equity, the complexity of the services, the flexibility and simplicity of regulatory systems, local capacity.

Similar findings for the water sector are provided by Astana (2004) in his study in India, showing that decentralization can result in the local elite capturing the services. For example, where the government requires a 10% contribution for new water services local leaders can pay and appropriate the services for their own convenience. One key lesson of decentralization is that, if local level capacity, leadership and "readiness" (transparent management, systems, staff competencies) is lacking or ignored, it will invite inefficiency and corruption (Bailey, 2003).

A subject needing further study is the positioning of civil society groups and the conditions under which they can provide a voice and oversight for accountability. Some NGOs report that their efforts to ensure transparency are compromised when the local government employees who hire them are offenders themselves.

Participation needs more emphasis

Participation refers to what different stakeholders and their institutions do. Are different departments in the government involved? Are community groups and the poor really involved in planning, implementation and management and decision-making? Participation also refers to a specific set of tools that have become fairly well defined in the water/sanitation sector. These include tools such as: participatory appraisal and community mapping. The key question is how this type of tolls can contribute to improve transparency and honesty and reduce corruption.

Keep a pro-poor focus

It is those without voice, the poor, who are systematically deprived in corrupt systems. For example, a study in India found that real coverage in piped water systems serving about 700,000 people increased by between 20% and 45% -- mainly for poor people — when socio-economic mapping and site selection for water points was carried out with the public (particularly women) and local government (Shordt and Stravato, 2005).

Corruption undermines sustainability
Lack of transparency and corruption undermines sustainability, the continuing flow of benefits from improved water supply and sanitation services. For example, Esther Duflo analyzed how variability in water flows, poor design and construction and poor maintenance were distortions that resulted from corruption in a canal irrigation system in South India (Duflo, 2003).

Gender and corruption
Two studies show that corruption is less severe where women hold a larger share of parliamentary seats and senior positions in government ... and that women are less involved in bribe taking. (Bailey, 2003). There is anecdotal information, for example, about the advisability of having women serve as treasurers in water committees and the need for women to be involved in technology selection to reduce costs. More information is needed, specifically focusing on the effects of gender on transparency or corruption.

4. Further reading

If you want to explore these issues in more detail you may wish to access a number of additional titles on the internet (or on your CD-Rom) including:

- Shordt K., Stravato L., Dietvorst C. (2003) *About Corruption and Transparency in the Water and Sanitation Sector*; Thematic Overview Paper 16, Delft, the Netherlands, IRC International Water and Sanitation Centre. http://www.irc.nl/content/download/28609/300008/file/TOP16_Transp_06.pdf

- Brown E., Cloke J., Sohail M. *Key Myths about Corruption*; A Briefing paper for a Workshop on Corruption and Development, Development Studies Association Annual Conference, Church House, Westminster, Saturday 6th of November 2004.

- Stalgren P (2006). *Corruption in the water sector: Causes, Consequences and Potential Reform*; Swedish Water House Policy Brief Nr. 4 SIWI http://www.siwi.org/documents/Resources/Policy_Briefs/PB5_Corruption_in_the_water_sector_2006.pdf

- Gonzalez de Asis, M. (2006) ; *Reducing Corruption at the Local Level;* World Bank Institute, World Bank http://www.worldbank.org/wbi/governance/pdf/municipal_eng.pdf

Transparency International (TI) http://www.transparency.org/ The TI website is the largest single source of anti-corruption information – and it is available in several languages.

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Bailey, B. B. et al. (2003). *Synthesis of lessons learned of donors in fighting corruption.*.JT00146561 DAC Network on governance. OECD. DCD/DAC/GOVNET http://www.u4.no/document/showdoc.cfm?id=61 http://unpan1.un.org/intradoc/groups/public/documents/UNTC/UNPAN016841.pdf

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Duflo, E. (2003). *A Case study of corruption: canal irrigation in South India.* http://web.mit.edu/14.773/www/Wade.pdf.

Estache, A. and Kouassi, E. (2002). *Sector organization, governance, and inefficiency of African water utilities*. Washington, U.S.,The World Bank Institute. World Bank Policy Research Working Paper No. 2890.

IIED (2004). *´Participatory governance´*. In: Environment & Urbanization, vol. 16, no. 1, April 2004.

Kaufmann, D. (2003). *Rethinking Governance*: Empirical Lessons Challenge Orthodoxy Washington, U.S., World Bank Group - World Bank Institute. http://ssrn.com/abstract=386904

Srinivasan, L. (1990). *Tools for community participation: a manual for training trainers.* New York, NY, USA, PROWWESS/UNDP.

Shordt, K. et al. (2005-1). *Introducing the topic in the water sector: How to conduct a first meeting on transparency, honesty, corruption.* Delft, the Netherlands, IRC International Water and Sanitation Centre.

Shordt, K. and Stravato L. (2005-2). *Improved transparency and service using site selection as a tool.* . Delft, the Netherlands, IRC International Water and Sanitation Centre.

Shordt, K. (2000). *Action monitoring for effectiveness*. Delft, the Netherlands, IRC International Water and Sanitation Centre.

Swardt, C. de. (2005). *Global Corruption Report 2005 – 6: Key developments in corruption across countries*. Berlin, Germany, TI.

Werner, D. (1978). *Where there is no doctor.* California, U.S., The Hesperion Foundation.

Hygiene Promotion

Programme Outline

Part	Topics	Methods
1. Rationale	Reasons, benefits, costs	Chain of effects Presentation
2. Effective approaches	Learning, targeting & options	*Card marking* Presentation, review
3. Measuring results	Processes, outcomes & *impacts*	Presentation PRA, Q PA
4. Developing action	Challenges, opportunities, follow-up action	Problem tree Action identification

Part 1: Why Hygiene Promotion Matters

- Being clean in a clean environment is a fundamental benefit and a universal value
- "Clean is beautiful"
  "Cleanliness is next to godliness"
- Every year, 2.9 million people (mostly children < 5) die of diarrhoea; 900,000 of malaria, and 600,000 of typhoid;
- There are 11 million new eye infections each year and 6 million people newly blind

Part 1: Why Hygiene Promotion Matters

WASH related diseases result in large losses from illness and deaths

- Diarrhoea : 99,6 million DALYs
- Malaria: 31,7
- Helminths (worms): 17,9
- Schistosomiasis: 4,5
- Trachoma: 3,3

Disability Adjusted Life Years in Millions

Part 1: Why Hygiene Promotion Matters

Better hygiene practices make a big difference

- Safe disposal of child faeces reduces diarrhoea by 40%
- Handwashing and food hygiene reduces diarrhoea by 35%
- Drinking safe water reduces diarrhoea by 15-20%
- Handwashing may reduce intestinal infections by 48%
- Handwashing may reduce shigellosis by 59%
- Better WASH can reduce death from ascaris by 29%
- Better WASH can reduce schistosomiasis cases by 77% and trachoma and yaws by 30%
- In a SARS outbreak handwashing reduces the risk of spread of infection

Part 1: Why Hygiene Promotion Matters

Promoting hygiene is relatively cheap:

- It costs US$ 21 per DALY if good WSS hardware is present.
- It costs US$ 3 per household to avoid diarrhoea in children <5 if good WSS hardware is present

In comparison:

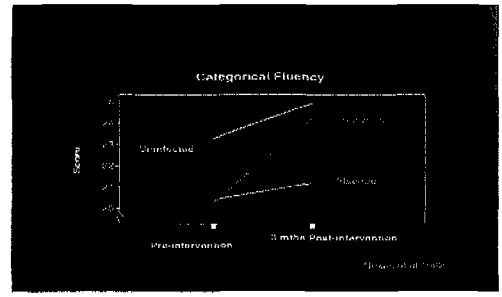
- Oral Rehydration Therapy costs US$ 24 per DALY
- Child Immunisation costs US$ 15-35
- Without good water and sanitation hardware, promoting hygiene costs US$ 46 per DALY and US$ 6 per household to avoid diarrhoea in children <5

Part 1: Why Hygiene Promotion Matters

Hygiene promotion generates excellent payback

- Each $ 1 shows economic return of $ 3 - $ 34
- Money saved on treating health problems estimated at US$ 7.3 billion per year
- Value of working days that would otherwise be lost estimated at US$ 750 million per year
- Value of women's time saved avoiding family illnesses estimated at US$ 64 billion per year

Link between water, sanitation and knowledge (cognitive development, Jamaica)



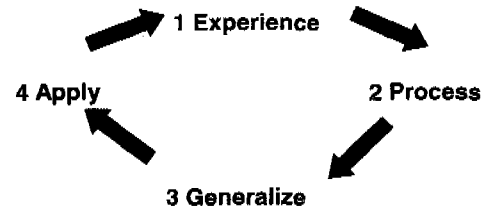
Part 1: Why Hygiene Promotion Matters

Benefits of hygiene for children

- 10% less stunted growth as less frequent diarrhoea leads to better nutrition
- Better performance in school from reduced worm infection and diarrhoea
- More girls stay in school past puberty when school sanitation and hygiene improve

Part 2: Effective Approaches

People learn from experience



Hence participatory learning is more effective

Part 2: Effective Approaches

Which hygiene conditions and practices to target?

In general

- Safe disposal of excreta (adult, child)
- Handwashing at critical times and in correct ways
- Safe drinking water including storage and drawing

Local priorities depends on local diseases, environments and cultures, such as

- Dense population, humid or dry climate, water availability, high water table, high migration, high birth rate, low nutrition, peoples' felt needs, local risky customs

Part 2: Effective Approaches

For better hygiene conditions and practices target group depends on subject & culture

- Domestic hygiene - household carers (mothers, daughters, in-laws)
- Children's habits – mothers, siblings, grandparents
- Financing investments – men
- Toilet use – men, adolescent boys peer groups
  Women often cannot influence wider society
- Secondary groups
  Local authorities, religious leaders, opinion leaders

Part 2: Effective Approaches

Integrate Gender and Poverty Perspectives

- Men and women, rich and poor have different interests, information channels, *locations, time patterns* and different access to means
- Men are important target groups as fathers, husbands and practitioners by themselves

Check whether your project / programme has a gender and poverty perspective!

Part 2: Effective Approaches

Different approaches for different aims (1)

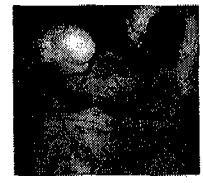
1. Programme-managed:
   - Programme-sets common objectives (also based on user needs)
   - Capacity-building focus on implementation
   - Programme staff do planning and monitoring
   - Medium-to-long term
2. Community-managed:
   - Build capacity for communities to plan and manage locally-specific hygiene promotion programmes
   - They set their own objectives although overlap may occur and be stimulated
   - They use participatory methods to plan and monitor (which may feed into district monitoring)
   - Long-term

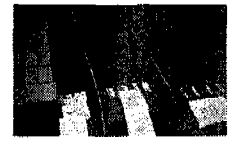
Part 2: Effective Approaches

Different approaches for different aims (2)

3. Social Marketing: **4 P's**
   - Practices/product: a few key practices/single product
   - Promotion: Targeting different groups with tailored strategy (*selected messages and media*)
   - Place: Adjust settings to ease target group access
   - Price: different options adapted to capacity to pay

Part 3: Measuring Results: Why?





- First establish baseline data
- Capture what happens in data
- Note changes, trends
- Monitor progress (or decline)
- Find underlying reasons
- Take actions / adjust approach
- Manage change
- Account for results and costs
- Establish project/programme database
- Compare change over time/across communities

Part 3: Measuring Results: What?

Impacts on health? Real but not easy to measure

- Health statistics not always easily available
- Definitions of e.g. diarrhoea may differ
- Diagnosis not always correct
- Impact measures only reported diseases, not actual disease
- Reporting may fluctuate
- Villages and households have different access to and use of water, sanitation and hygiene
- Effects take time to show up in statistics
- Physical exams/tests needs costly expert research
- Recall data needs expert research
- Impact requires substantially improved conditions/ practices

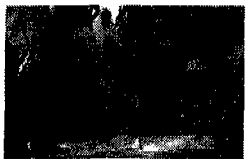
Part 3: Measuring Results: How

By social survey (Questionnaire & Observations):

- Commonly used (+)
- Easy to generate quantitative and qualitative data (+)
- Analysis done outside the community (-)
- Designed and implemented by outside researchers (+,-)
- Data not validated in group (-)
- Database only at project/ programme level (-)

+ = plus point
- = disadvantage

Part 3: Measuring Results: How



With participatory tools

Participatory Learning and Action
- Commonly used (+)
- Easier to generate qualitative rather than quantitative data (+, -)
- Analysis done with people involved (+)
- Participation in design (+)
- Data remains with communities (+)
- Hard to build project database (-)

Part 3: Measuring Results: How

Quantified Qualitative Information

Turns qualitative data into quantitative data giving a score to such variables as:
- participation of women and the poor in decision making
- functioning and performance of committees
- equitable financing
- degree of cost-recovery
- targeting of subsidies to poor with transparency

Part 3: Measuring Results: How

An example of quantification about women's participation in score with reasons e.g. a poor women's or male leader's focus group

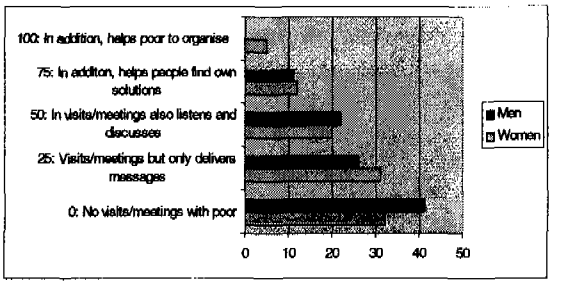
Descriptive scoring options	*Scores*	*Actual*
Women do not come to meetings	0	Score can be between points e.g. 60 (women attend speak, and influence decisions rarely)
Women come, but do not speak	25	
Women come, speak, but do not influence decisions	50	
Women come, speak and influenced 1-2 decisions	75	
Women come, speak and influenced all decisions	100	

Reasons: .....

Actions: .....

Part 3: Measuring Results: How

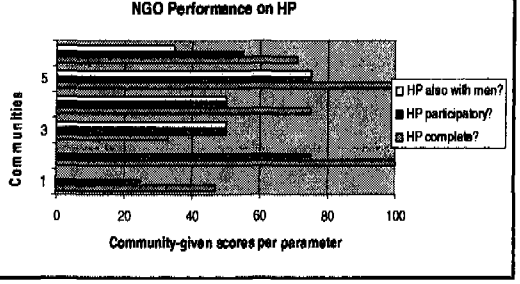
Quantified outcome shows how often poor women and men: have been reached. Few promoters/communities have moved 'up the scale'



Part 3: Measuring Results: How

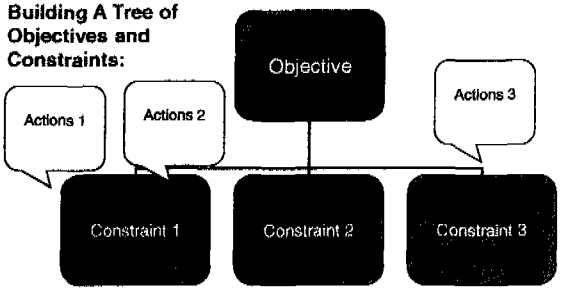
Comparison of community scores for HP approach by NGO

(Compare also by community, area, project, etc.)



Part 4 Developing Action

Building A Tree of Objectives and Constraints:



Resource note on water, sanitation and hygiene[1]

By P. Brussee, 2008

1. Introduction to Hygiene Promotion

Hygiene promotion is the planned approach to preventing diarrhoeal and other water and sanitation related diseases through the widespread and sustained adoption of safe hygiene practices. (Adjusted from Curtis and Kanki, 1998: 10). For more definitions, see http://www2.irc.nl/page.php/45

Hygiene promotion is concerned with behavioural steps to break the link between faeces and water or food, with keeping the household and household food and water clean, with keeping the surrounding environment healthy. Hygiene promotion is therefore closely related with water and sanitation issues, but is mostly concerned with the 'software' side – i.e. human behaviour.

Hygiene promotion is and is not different from hygiene and health education. Different, because hygiene education can be given a narrow meaning of transferring knowledge to people on why and how they can and should improve their own health/hygiene conditions and practices. In this approach, the emphasis is often on didactic or teaching methods to transfer health and hygiene knowledge and adopt good practices.

There are many reasons why people do not improve conditions and practice behaviours in spite of learning about reasons and benefits. For example, many people know that it is better to boil or otherwise purify drinking water that may be unsafe and to wash hands with soap before eating, but those who know do not do always practise this behaviour. That may be because they are in a hurry, because they have not developed the habit, because they lack the means to do so, because they are prepared to take the risk (bad practices do not always have negative effects), or because of a lack of example, support and pressure from others.

Hygiene promotion is the same as health/hygiene education to the extent that hygiene education is given a definition that goes beyond advice and knowledge transfer. These broader definitions of health education stress personal interaction and two-way learning as important elements of the process. "Health education is the process of interaction between people in order to discuss their health situation, with the aim to create awareness about health status and to decide jointly how this situation can be improved" (Timmermans and deWalle, 1995: 278). However, even these broader definitions do not address all the problems, since a variety of measures are needed to achieve wide scale, measurable and sustained reduction of risky conditions and practices that are a risk to good health. Ways in which these outcomes can be obtained, such as participatory methods and tools, are important elements in hygiene promotion.

Providing information and educating people is useful when it is timely and in a form that they can understand and act upon. For example, people probably want to know about the

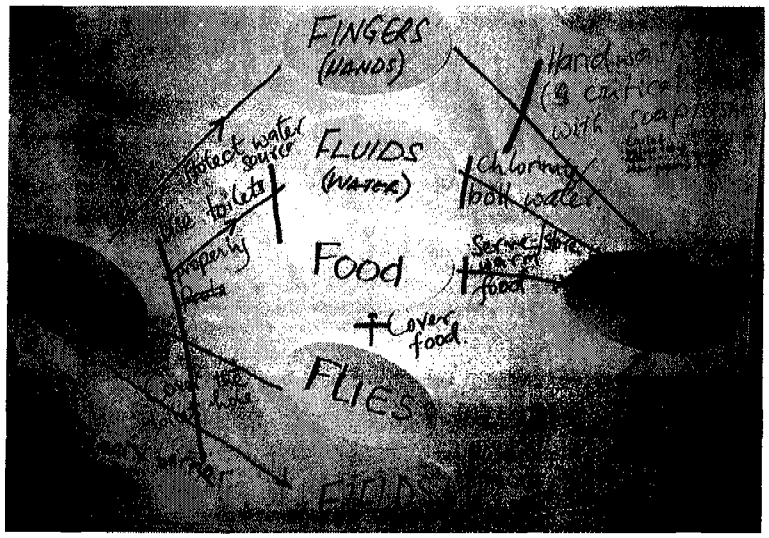
[1] The main resources used for this note are Frequently Asked Questions (and Answers) on Hygiene Promotion, Governance of WASH Services, IRC, International Water and Sanitation Centre, the Netherlands

costs of different toilet options and the ease of access to materials and building support, before they decide to build a toilet.

People are also entitled to good information, for example about the critical times for washing hands and how to do this to stop the transmission of faecal-oral diseases. These messages and methods should focus on enabling people to understand how this transmission occurs and how it is stopped within their own environment. Information about germ theory is often inappropriate and unsuccessful in promoting hygiene. It can sound like abstract or metaphysical nonsense, to people who are not familiar with concepts of microorganisms. However, people are entitled to the information that they want – to a large extent, people ask questions to which they want answers

A famous hygiene promoter used to ask people whether they liked to eat shit and then helped them see how with their current practices they might digest tiny particles of the stools of another person in many different ways. Disgust, rather than health risks, proved a good way to motivate people to take action to avoid such digestion.

The six F-diagram which shows the transmission of faeces to mouth via fingers, fluids, food, flies and fields, is a participatory tool which helps people understand faecal-oral transmission by visualising the routes. Instead of using a ready-made diagram, people can be assisted to make their own, as in the photo below (where the F for faeces has been replaced by the term 'human excreta') or draw their own small F pictures and link these with the help of sticks or pieces of string.



F-diagram from teachers' master training Zambia, UNICEF/IRC (Photo: C. Sijbesma, IRC)

2. Participatory Hygiene Promotion

Participatory hygiene promotion uses participatory activities and tools, such as transect walks, drawings, diagrams, time lines, and maps to visualise and, where needed, quantify unhygienic conditions and practices. The participants use the information to analyse the situation, plan improvements, monitor progress and measure results. Because they are

involved in identifying and analysing the problems they are more likely to be committed to the solutions they agree, in a way that they may not be to solutions that they have simply learned about in a more abstract way.

Typically they will use natural or easily available materials such as paper, felt-tipped pens or drawings in the soil and seeds, leaves, and powders, etc. Qualitative Information Systems can be used to turn qualitative information into a quantitative score and so build a comparative data base which helps manage large participatory programmes.

3. Social Marketing

Social marketing uses marketing techniques and knowledge from the commercial sector to promote the adoption of a social good, such as a sanitary toilet or a hygienic practice. Marketing, whether commercial or socially orientated, focuses on what the consumer (target audience) wants. This contrasts to the traditional educational approach which promotes reasons as to why the consumer *should* change behaviour. Marketing recognises that people have many competing priorities, and the change being promoted needs to be perceived as a top priority if behaviour change is to occur. The target audience must both *want* and *be able* to change their behaviour. The target audience *chooses* to adopt a new behaviour and in return gets something they want – comfort, prestige, self-esteem, or whatever.

Segmentation is important in social marketing, dividing the target group into primary actors, whose behaviour the programme wants to influence and secondary actors whose support is needed to make that behaviour possible.

Primary actors are for example caretakers of young children, such as mothers, older siblings or grandparents who look after infants in the family., Secondary actors are the husbands and fathers whose financial support is required, or mothers-in-law who may permit or disapprove of a new practice by their daughters-in-law.

Research then helps to determine the four *P*s:

- the *product* that the actors want - a product can also be a thing, like a bar of soap, or a practice, like handwashing)
- the *place* where they can get it
- the *price* which they are willing to pay (where willing means they want to and can pay, and where price can also include effort or socially different behaviour) and
- the *promotion* needed for them to try and then to adopt the product – the arguments which will convince them and materials that they use

Much experience has been built up in the social marketing of handwashing with soap. For example in Indonesia, the "Berbagi Sehat" programme, supported by Lifebuoy, has been successful in communicating the importance of handwashing with soap – 84% of people touched by the campaign subsequently washed their hands with soap after defecating, compared to 58% in a control group.

4. The importance of gender in Hygiene Promotion

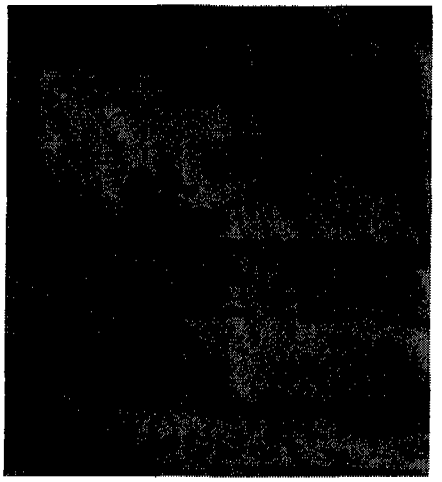
Gender relates to the different positions, roles and behaviour that society gives to women and men at different ages and from different ethnic, racial, religious and socio-cultural groups, and to the culturally determined relations between the genders. A gender approach thinks about the needs of women and men, boys and girls, and also thinks about younger and older (wo)men, married and unmarried (wo)men, etc. Gender patterns vary between places and change over time and ordinary people have influence on them.

Gender is important in hygiene promotion, because of the difference between people. Women and men, girls and boys, daughters, mothers and mothers-in-law and sons, fathers and fathers-in-law have different tasks and roles in, influence on, control over and benefits from hygiene conditions and practices. The tasks etc. may also differ according to the locations, class, castes, etc. to which the different people belong.

Some illustrations: Young women may improve hygiene in caring for babies and infants, but need the support from mothers-in-law to go to hygiene promotion sessions and bathe babies frequently and from the fathers and fathers-in-law to have a tap nearby or have other means to get more water for bathing. Poor women often need different hygiene promotion times, places and contents than better-off women, because of their workday patterns.

Men are also an important target groups as fathers, husbands and practitioners. Health impacts depend on husbands, fathers (-in-law) and adolescent brothers and sons improving their own sanitation and hygiene habits, something which the women in their family cannot always influence. Increasingly, men also want to be more involved in hygiene promotion, e.g. as fathers of their children.

Hence one always needs to ask: "Who can do what, when, where and why?"



Two areas for men's roles identified by a male focus group in Banjarmasin, Indonesia: co-educating the children on hygiene and financial support for hygiene implements at home (photo: C. Sijbesma, IRC)

5. Measuring impact of Hygiene Promotion

Measuring the impact of hygiene promotion (or of water and sanitation improvements) on diseases is not easy. It presupposes that a baseline study has been completed to show the

initial position, that changes in practice and behaviour have taken place on a significant scale and that enough time has elapsed for changes in outcomes (e.g. diarrhoeal disease) to have become visible as public health trends. Measuring impact also requires highly professional surveys good quality health statistics and laboratory tests of e.g., stools.

Doing a household survey on reported incidence of certain diseases or taking stool samples can help establish a baseline for later impact measurement. After changes have taken place, it is first necessary to monitor if significant, widespread and lasting change from unhygienic to hygienic conditions and practices has occurred. When such change has resulted in a critical mass of good conditions and practices, it is more likely that positive effects will show up in impact measurements based on surveys, lab tests or health statistics.

Baseline surveys on hygienic conditions and practices can be done through household interviews with questionnaires by external surveyors, or through participatory studies. The latter has the advantage that the study and the local results are a hygiene promotion and planning tools in themselves, which help people to understand local conditions and to plan improvements.

6. Cost effectiveness of Hygiene Promotion

Research by Cairncross and Valdmanis has revealed that the costs of effective hygiene promotion are low, about US$ 0.60 per person per year. Typical investment costs for water supply and sanitation are 60-100 times higher: US$ 40 and 60 per person per year. The recurrent costs for hardware improvements are also higher, estimated at US$ 6-15 per person per year for recurrent costs of water supply and US$12 per person per year for sanitation.

We need however, much more monitoring and investigation of the costs and the effectiveness of different types of hygiene promotion to learn more on what the range of costs and on which approaches are more cost-effective when, where and why.

Cost-effectiveness measurement should become a standard component in every hygiene promotion programme.

5. Further reading

If you want to explore these issues in more detail you may wish to access a number of additional titles in the internet (or on your CD-Rom) including:

Appleton B., Sijbesma C. (2005) *Hygiene Promotion*; Thematic Overview Paper No 1.; IRC, International Water and Sanitation Centre, the Netherlands
http://www.irc.nl/content/download/23457/267837/file/TOP1_HygPromo_05.pd

Bolt, E., Cairncross, S (2004); *Sustainability of hygiene behaviour and the effectiveness of change Interventions: Lessons learned on research methodologies and research implementation from a multi-country research study:* Booklet 1; IRC, International Water and Sanitation Centre, Delft, the Netherlands
http://www.irc.nl/content/download/14218/192059/file/Booklet1.pdf

Bolt, E., Cairncross, S (2004); *Sustainability of hygiene behaviour and the effectiveness of change Interventions: Lessons learned on research methodologies and research implementation from a multi-country research study:* Booklet 2; IRC, International Water and Sanitation Centre, Delft, the Netherlands
http://www.irc.nl/content/download/14219/192080/file/Booklet2.pdf

Scott B. (2005) *Social Marketing: A Consumer-based approach to promoting safe hygiene behaviours*; WELL Factsheet
http://www.lboro.ac.uk/well/resources/fact-sheets/fact-sheets-htm/Social%20marketing.htm

Fihser J., *Making hygiene promotion cost effective*
http://www.lboro.ac.uk/well/resources/Publications/Briefing%20Notes/BN14%20Hygiene.htm

Christoffers T, Van Wijk-Sijbesma and Vincent Njuguna *The value of Hygiene Promotion: Cost-effectiveness analysis of hygiene promotion interventions.* Background report for WELL Briefing Note 14
http://www.lboro.ac.uk/well/resources/Publications/Briefing%20Notes/BN14%20van%20Wijk.pdf

For more information about the six F diagram see
http://www.unicef.org/voy/explore/wes/explore_1929.html

Quantification of qualitative information
http://www.irc.nl/page/12940

Handwashing with Soap:
http://www.globalhandwashing.org/

6. References

- Cairncross S & Valdmanis V (2006) Water Supply, Sanitation and Hygiene Promotion. Ch.41 in Jamison et al (Eds.) Disease Control Priorities in Developing Countries. OUP & WB. Available at: www.dcp2.org/pubs/DCP
- Curtis, Valerie & Bernadette Kanki (1998). Happy, healthy and hygienic: how to set up a hygiene promotion programme. Vol. 1: Planning a hygiene promotion programme. New York: UNICEF; London: London School of Hygiene & Tropical Medicine; Ouagadougou: Ministere de la Sante du Burkina Faso
- Timmermans, Dia W. & de Walle, Foppe (1995). From health education to information, education and communication. In: Velden, K. van der et al., Health matters: Public health in North-South perspective. Houten: Bohm, Stafleu & Van Loghum; Amsterdam: Royal Tropical Institute.