

Keep It Working

A field manual to support community management of rural water supplies



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Keep It Working

*A field manual to support community
management of rural water supplies*

By Eveline Bolt and Catarina Fonseca
IRC Technical Paper Series 36

IRC facilitates the creation, sharing, and use of knowledge so that sector staff and organizations can better support poor men, women and children in developing countries to obtain water and sanitation services they will use and can sustain. It does this by improving the information and knowledge base of the sector and by strengthening sector resource centres in the South.

As a gateway to quality information, the IRC maintains a Documentation Unit and a web site with a weekly news service, and produces publications in English, French, Spanish and Portuguese both in print and electronically. It also offers training and experience-based learning activities, advisory and evaluation services, applied research and learning projects in Asia, Africa and Latin America; and conducts advocacy activities for the sector as a whole. Topics include community management, gender and equity, institutional development, integrated water resources management, school sanitation, and hygiene promotion.

IRC staff work as facilitators in helping people make their own decisions; are equal partners with sector professionals from the South; stimulate dialogue among all parties to create trust and promote change; and create a learning environment to develop better alternatives.

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Preface

This book is written for staff working directly with communities to improve the management of their water supply, so for people sometimes known as 'field workers'. It is written from a conviction about the need for community management of rural water supply systems. Our ideas are supported by what is said at many international meetings and by many sector professionals. Like them, we feel that governments cannot and should not manage all the water supply systems in the rural areas of their country. Instead, governments should create an enabling environment for communities to manage their systems alone or in partnership. Communities are best aware of local demands and possible conflicts, of available water resources and of capacities of the various users to contribute to operation and maintenance.

You, as field worker, are part of this so-called enabling environment. This book aims at being a helpful tool when working with communities that want to establish or improve the management of their water supplies. Such work requires a good insight into all sorts of elements related to sustainable water supply management, such as legal issues, possible technical hiccups in the system, power relations, gender and equity, and monitoring. Of course field workers already have a lot of insight into many of these elements. However, we also feel that the 20 *fact sheets* in the first part of this book will still provide useful reading.

Working with communities to establish or improve management of their water supplies also requires skills and tools to facilitate communication and community decision-making processes. That is why we added 29 tools in the second part of the book. They are referred to in the fact sheets. Some of the tools will no doubt be familiar, since the use of such participatory tools has been much propagated over the last 15 years. Some of them will probably be new. In quite a number of tools you will find an indication on how to ensure that gender and equity are taken into account.

The third part of the book has 16 *checklists* that can be helpful when working with communities. Some of the checklists address issues such as assessing the functioning of the water supply system or assessing cost recovery for operation and maintenance. Community members may start using these themselves once you have explained their use. A second category of checklists includes important questions when facilitating discussions on community management issues with community members.

These fact sheets, tools and checklists are referred to throughout the document.

What makes this book special is the clear linkages between the issues raised in the fact sheets and the tools and checklists that enable you to get these issues discussed. Both the fact sheets and the tools have been sequenced to mirror the steps needed to organise and to practise community management. You can select fact sheets, tools and checklists suitable to the status of the water supply system and existing capacities in the community where you work. The matrices visualise how fact sheets, tools and checklists relate to each other.

We do not pretend that this set of tools is complete or can be applied in every situation. Indeed, we would very much appreciate receiving a copy of any additional tools or adaptations of the tools in this book that you may use or come across.. This will help us improve the book as we update it. Due recognition will of course be given to the source of all such material.

This book is only one part of the material being disseminated. Other material includes a number of videos on community management, a book for programme managers and district level staff, a book with the state of the art on community management, an advocacy leaflet, training for field workers, a Training of Trainers manual, a managers workshop and a web-site (www.irc.nl/manage) on community management. To obtain more information on these materials, you may either contact the organisation closest to you, or IRC. You can find the contact addresses in the back of the book.

Acknowledgements

What you find in this book is to a large extent a reflection of what has been discovered and tested by a group of field workers and researchers working in organisations in six different countries¹. Together with people from 22 communities they worked for 4 years in an action research programme and together with IRC they have recently gone through a process of developing materials for dissemination of the research findings. Most of the examples in the boxes you will find throughout the book, are from those communities.

IRC would like to acknowledge the important role of the research teams and thank the following team members for their commitment and contributions: Raju Khadka, Renuka Rai, Laxmi Paudyel and Hari Subba from Nepal, Pauline Ikumi, Isaack Oenga, Joyce Mbare and Vincent Njuguna from Kenya, Andrew Tayong, Amouye Nguettakan, late Anthony Nchari, Christine Poubom and Jaff Brendan from Cameroon, Fabián Gonón, Jaime Pacajoj and Carlos Peren from Guatemala, Cecilia Gomez, Mario Perez, Alfonso Rojas, Johnny Rojas and Ana Aristizabal from Colombia, Altaf Hussain, Dil Feroze, Muhammed Saleem, Nahida Aziz, Tameez Ahmad and Haider Raza from Pakistan.

IRC is very thankful to the people of the communities Gajedi, Rangpur, Yampaphant, Lele (all in Nepal), Hoto, Ghaziabad, Pakora, Hasis (all in Pakistan), Belen, Aguacatan, Barrel Chiquito (in Guatemala), Nyakerato, Yanthooko, Kiveetyo, Sigomere (in Kenya), Nkouondja, Nyen/Mbemi, Batcham, Bokito rural (in Cameroon), Campoalegre, La Sirena, Ceylan (in Colombia) for the time, effort and the hard work put in. The wealth of information in this book would not have been generated without the communities' willingness to take a close look at their management practices or without the persistence of the research teams.

The information would never have been collated without financial assistance from the Department for Development Co-operation (DGIS) of the Ministry of Foreign Affairs of the Netherlands. IRC would like to thank DGIS for this assistance. The authors would also like to thank colleagues at IRC for reviewing the document, in particular the present and former project team members. IRC was fortunate to find Mr. Peter McIntyre willing to edit the book. The images on the cover of this book are stills from the video films produced in the framework of the MANAGE Dissemination project.

1 Staff of: NEWAH in Nepal; WASEP in Pakistan; NETWAS in Kenya; PIAD/WA and WSMC in Cameroon; ADP and SER in Guatemala; CINARA in Colombia; Contact details are in the back of this book.

These films were directed by Sabiha Sumar (Pakistan), Sushma Joshi, (Nepal), Consuelo Cepeda (Colombia), Alfonso Porres (Guatemala), Albert Wandago (Kenya) and Cyrille Bitting (Cameroon). Most of the pictures in the book derive from the work done with the communities. Some are drawn from previous IRC publications. Some are drawn from publications published by others. In those cases due recognition is given. Many bits and pieces of the fact sheets, tools and checklists in this book can also be found in other books and proceedings of international meetings for example books about PRA and SARAR². Since these are so many and inter-related, references are not made. We could never do justice to all those who have somehow voiced their opinion in support of community management. Only where we were very sure about the original source, a reference was made through a footnote. We sincerely hope that all other sources are covered through the list of books for further reading.

Eveline Bolt and Catarina Fonseca

2 PRA: Participatory Rural Appraisal, SARAR: a concept for participatory approaches developed by Srinivasan (1990).

Illustrations are borrowed from:

P. Röhr-Rouendaal (1997). *Where there is no artist*. London, United Kingdom, Intermediate Technology Development Group.

Fact sheet: 12

Tool: 1, 7, 18, 23, 28

Checklist: 1, 3

Intermediate Technology Development Group (1988). *The copy book : copyright-free illustrations for development*. United Kingdom, IT.

Checklist: 6

Rural Domestic Water Supply and Sanitation Programme II (1993). *PRA reference guide*.

Tool: 9, 10, 12

Checklist: 4, 5

UNICEF Nepal (1990). *Instant illustrations*. Kathmandu, Nepal, UNICEF.

Fact sheet: 11

Mvula Trust (1997). *Guidelines to community managed water and sanitation services*. Cape Town, South Africa, Mvula Trust.

Fact sheet: 10, 13

WaterAid Uganda

Tool: 21

Checklist: 6, 14

Research teams:

Fact sheet: 12, 13

Tool: 5, 13, 25

Care Nepal (1997). *The spider model manual: a trainers guide to monitoring community organizations' capacities*. Kathmandu, Nepal, Care Nepal.

Tool: 24

Introduction

Management of rural water supply systems by communities themselves has been promoted for quite some time. This is prompted by the inability of governments and local authorities to maintain and manage each and every system in the country. Community management can be a good and sustainable alternative. In this book we define community management of water supplies as a situation whereby communities have control over the management of their water supply system. Community management takes into account that communities are groups of men, women and children of different socio-economic and cultural backgrounds, with often common, but sometimes also conflicting interests and ideas. The actual management is undertaken by a representative group of community people, often called a water committee, chosen to take up this task. Whereas this group may opt for the involvement of small entrepreneurs, the committee remains in charge of ensuring a sustainable service and is accountable to the community at large.

However, community management can only work if water committees receive support when they require it. But usually the story is like this: external support agencies, such as bi-lateral donors, multi-lateral organisations and development banks, assist governments in the provision of water supply systems to communities. Community members are asked to participate in construction and trained to maintain the system. Once construction is done the support agency and government staff "hand over" the system to the community and go off, saying that the community should from now on manage the system. We assume that they can and will. Often too little thought is given to putting in place the conditions for sustained community management. We all know what the results are: many systems break down and communities are back to square one in their efforts to achieve a sufficient supply of good quality water in sufficient quantity.

A whole decade of experimenting with the concept has shown us that when community management is agreed a number of conditions have to be put in place.

- Communities need sufficient information to make good decisions, for example about service levels, when tariffs are to be set, when maintenance schedules are to be developed or when a choice has to be made to repair or replace something;
- Communities need to know how to deal with different interests and conflicts among themselves, for example when some people are better capable of paying a certain tariff than others, when the protection of a water source requires someone to give up part of his or her land or when a neighbouring community wants to use the same source;
- Communities need to know how certain management tasks can be delegated, for example to a water committee or a private operator, how to monitor them and how to set up rules to ensure transparency;
- Issues about source ownership and delegation of responsibilities need to be backed by legal arrangements;
- Communities need easy access to technical and managerial support and to spare parts for maintenance and repair.

Active work is needed to put into place these conditions, which relate to the period of water system implementation as well as of system management. Governments at the national and decentralised level, agencies, staff working with communities as well as communities themselves all have their role to play.

Tools and techniques exist that can help you as staff of local government agencies, NGOs or of donor supported projects, to assist communities to strengthen or develop their water supply management capacities. Knowing the realities of working in the field provides you with the evidence that illustrates for example the need for legal arrangements, for policies regarding spare part provision or for training water committees. The intermediate level, decentralised government agencies or donor agencies, the private sector and governments need to respond to these realities by creating and enforcing supporting policies, or by making funds available for technical support and community training.

Your role as an intermediary is crucial. You meet communities and you can help them to discover their responsibilities, their capacities as well as the necessary powers required to manage their water supply system.

Fact sheets

Fact sheets contain information on an issue closely related to community management. They are designed to increase your understanding of these issues, and help you find the right approach towards working with communities.

Each fact sheet first indicates what the issue is, and why the issue is important to achieve sustainable systems through community management. Most of the fact sheet is dedicated to elaborate about the issue. In a number of cases this is illustrated with small stories from various countries.

The fact sheets can all be read independently from each other. While reading them you will find that reference is made to tools and checklists you also find in this book. These are the most obvious tools and checklists that will help you apply concepts and ideas explained in the fact sheets.

Fact sheets	Related tools	Related checklists
1. The problem solving cycle	4 – 14, 19, 22, 24, 25, 26	1, 2, 13
2. With which community to co-operate	3	1
3. The community and the community members do not exist	16, 21, 23	2, 3, 15
4. Communities are managing their water supplies	13, 14	
5. The facilitator; does s/he need special skills to work with communities	1, 2, 3	1, 2
6. Identifying problems and resources with the community	4 – 14, 19, 20	4, 5, 6, 8, 9
7. Finding solutions; trial and error	25	
8. The meaning of 'management' and management arrangements	15, 16, 18, 19, 20	3, 16
9. Role and selection of a water committee	13, 18, 24	
10. Technology options; where can communities have a say	9, 14, 22	4, 7, 8, 9, 10, 11, 12, 14
11. No water management without sanitation and hygiene	4, 5, 6, 7, 8	6
12. It's all about money; cost items and tariff setting	9, 28	11
13. Transparency and financial control	28	1
14. Legislation and legal issues	16	1
15. Without monitoring the system will fall apart	17, 24, 26	8, 13
16. Potential technical problems; can communities handle them?	29	12, 14, 16
17. Managerial problems and sanctions	19	
18. Training to prepare committee members for their tasks	18, 24, 27	
19. Evaluation is learning; no solution is forever	4, 8	4, 5, 6, 8, 9
20. There are other development workers in the community	13	

The problem solving cycle; an important concept when talking community management

What is the issue?

When managing their water supply system to ensure good service delivery, communities face problems that need to be solved. We can distinguish various problem solving steps. When you follow these methodically, they are likely to lead to a solution. This series of steps can be referred to as the problem solving cycle.

Why the problem solving cycle?

Your job brings you into constant contact with communities; heterogeneous groups of people who happen to live together. Time and again these communities want to resolve a problem related to their water supplies. They contact you because either they want your assistance in extending their water supply facilities or they want to raise money to get them repaired. You have probably come across many other reasons for contact, such as difficulties in paying for operation and maintenance (O&M), conflict with neighbouring communities or declining water pressure.

Community members feel they cannot resolve these problems on their own. That's why they contact you, and you work on solutions together. If you want communities to be able to solve similar problems by themselves in future, it is helpful to take them through the steps of the problem solving cycle. Each step is explained here: its purpose and its relation to the previous and next steps.

About the problem solving cycle

As indicated above, assisting communities to solve a problem requires you to take them through a number of steps of the problem solving cycle. You have probably often gone through such a cycle without having been very explicit about it. The cycle is made explicit here to allow you to see where your support to the community could possibly be more effective. It includes the following:

- 1 taking a closer look at the problem to get to know how it is perceived, its nature and its possible causes;
- 2 looking at underlying causes and deciding which of them to address;
- 3 identifying potential solutions and the resources required;
- 4 selecting the solution to try;
- 5 planning for action and monitoring;
- 6 trying out the solution;
- 7 reflecting and evaluating;
- 8 decision taking on follow-up.

The steps in the cycle are elaborated here. Should you want to learn more about how to implement a step you may take a look at most of the tools and checklists in the second part of the book. With each step you find some specific references.

Checklist 1 and 2 are general and useful for various steps of the problem solving cycle. Boxes in this fact sheet show the outcomes of following the steps in villages in Cameroon and Pakistan.

1 Taking a closer look at the problem

You need to get to know the nature of the problem and its possible causes or underlying problems. It is also crucial to explore whether different people have different perceptions of a problem. The nature of the problem gives you a hint about the type of information to be collected and analysed. A community wanting to solve a conflict about a water source requires information about land ownership and the number of people to be served. A community wanting to address the problem of inadequate maintenance capacity requires information about possible break-downs and the skills needed to deal with them. Knowing the exact nature of a problem is essential if communities are to arrive at a useful and durable solution that addresses the real problem. Too often technical solutions are sought for problems that have an underlying managerial cause.

Tool 4-14 are meant to help you and community members to get a view on existing problems.

It is also useful to explore if other communities in the area have or had similar problems and how they solved them.

During dry seasons, the people in Nyen and Mbemi (Cameroon) suffer from severe water shortage. Their immediate solution was to construct an additional catchment reservoir to increase the water quantity. Once this solution had been conceived in their minds, it was very difficult to convince them that there could be an alternative. Applying the problem solving cycle it became clear that the shortage was due to uncontrolled use and unrepaired leakages. This poor maintenance was a result of the poor functioning of the water management committee, and the low motivation of the caretaker who had just been trained to take over from the previous one.

2 Looking at how the underlying causes relate to each other and deciding which of them to address

This is a crucial step. Underlying causes are problems in themselves and you need to assist the community in finding out how they interrelate. Once the interrelation among the problems is visualised (tool 19) it is often easy to see which solution will have a big impact. This will help to select the problems that need to be solved most urgently.

During problem prioritisation in Nyen and Mbemi (Cameroon) the matrix ranking tool (tool 22) was used. Water shortage appeared on the top of all other problems. Together with the people, we identified the underlying causes using the problem tree technique (tool 19) and the major causes were identified as poor functioning of the water management committee and non-application of rules and regulations. Among the major consequences were that people returned to natural water sources, with a resulting increase in water-born diseases.

3 Identifying potential solutions and the resources required

The community must then make an assessment of the resources needed to solve these problems. Resources may include time, money, external assistance and materials. All the advantages and disadvantages have to be weighed and a decision taken as to which of them to address first. Needless to say, men and women, rich and poor, may have different views of underlying causes and different opinions about which to address first (fact sheet 3 and 6 give more information on this issue).

4 Selecting the solution to try

Once feasible solutions and the resources required have been listed, the community will have to select the one they want to try. This is most easily done by ranking the solutions. Even if the previous step has been properly done, this may not be easy, as people may have different priorities. After some discussion however, you will end up with a list of the best, second and third best solutions in order of preference. You will have to be cautious about the fact that there are preconceived solutions people may want to select.

When discussing ways to solve the water distribution problem, both the men and the women of Hoto (**Pakistan**) voiced their opinion. The men were of the opinion that the best strategy was to extend the old distribution pipes of the government built water supply system to all households in the area not being served. The women however, argued that this was not the most appropriate solution. In their opinion there was a need for an improved water tank, which could supply water to households with access to the standpipes. The women argued: "What is the point of new pipes if the present pipe is not fully utilised?". The construction of the improved tank cost Rs 20,000 and benefited 70% of the community. Putting in new pipe would have been more expensive and would still not have secured sufficient water for the system.

During the ranking process in Nyen and Mbemi (**Cameroon**) the Water Management Committee wanted to influence people's opinions in favour of constructing an additional catchment reservoir. Matrix ranking was done and solutions were ranked against identified criteria (tool 22). For this matrix ranking, resources such as time, materials and manpower were taken into consideration.

5 Planning for action and monitoring

The preferred solution, number one on the ranking list, now has to be tried out. Community members need to identify steps to put the solution into place and how exactly they will use the resources. They have to determine and divide roles and responsibilities (tool 25 and 26). It would be good to help them to identify where they foresee difficulties and to discuss how they will keep an eye on this. An 'early warning' or monitoring system will help prevent such difficulties becoming real problems. Community members will also need to clearly decide at which point in time they will say: "Yes, this is the solution we want; this is what we were looking for". This should come out of a system of monitoring and evaluation (fact sheet 15, tool 24 and 25, checklist 13).

6 Trying out the solution

Basically this means that the plan of action is implemented. Everybody carries out what s/he agreed to. It is probably best to have community members constitute a small group to monitor the work done. This group should include people who do not have a task in the plan of action.



Problems solved means good supply

7 Reflecting and evaluating

Information obtained through monitoring and through people's own gut feeling can be used to reflect on and evaluate this first attempt. You can facilitate a discussion to help community members list the advantages and disadvantages of the solution that was tried. They will have to honestly answer the question whether the solution really solved the problem: was it worth the effort? It is probably good to ask the opinions of men and women, of rich and poor in separate groups. Their views may differ and differences need to be discussed openly to make people understand each other's point of view (see fact sheet 19 for more on this issue).

8 Decision taking on follow-up

Following the previous step community members will have an opinion about whether the solution they tried out was effective in solving the problem or not. Depending on the outcome and weighing each other's point of view, they may decide to stay with the solution, to adapt it, or to reject it and to try out another solution. This will be the one they rated second best when selecting the solution they wanted to try out. The process then continues with step number 5.

See tool 4-14, 19, 22, 24, 25, 26 and checklist 1, 2, 13.

With which community to co-operate? Looking for mutual commitment

What is the issue?

Improving the management of water supply systems and services requires a co-ordinated effort from you, your office, the community and possibly other parties involved. All parties need to get along and if collaboration is to be fruitful all need to be committed to the common cause. You know your own level of commitment and you will usually have a gut feeling about the commitment to water supply management in communities you work with.

Why talk about interest and commitment?

Even though we know that general, community wide, commitment is crucial to success, many external agencies work with communities without having investigated whether community members are indeed committed to the management of their water supply. You will soon be frustrated if they do not show this commitment. Initially, you may build commitment by talking about and describing the potential advantages. However, you may give up if you feel that a lack of commitment hampers progress. It is therefore useful to take a closer look at commitment, what it is, what you can do to help people develop and maintain it and how you can recognise it.

About commitment

When you look into a dictionary you find commitment being described as a state in which someone has declared him/herself attached to a certain cause, for example to a good water supply service. In rural development activities, and in particular when a public service is to be provided through the construction and management of a water supply system, commitment can take various forms. These include providing labour during construction, the willingness to take decisions and to bear responsibility for these decisions, the willingness to learn more about management, and the willingness to keep promises and be transparent. Commitment means that people do not walk away from a problem when the solutions prove more difficult than they expected.

For communities to develop and sustain commitment the following is needed:

- a felt need for improved management of the water supply system and the service delivery;
- a proper flow of information, that helps people to make a cost-benefit analysis of working with you/your agency;
- to be listened at in case of worries and problems;
- the feeling that it is feasible to achieve the set objectives;
- the absence of heavy political rivalries.

Commitment is often expressed in terms of people's willingness to participate in meetings, to come to a consensus, to invest time or money in management of the system. In a heterogeneous community it is not very realistic to think that all people have the same

level of commitment and you will have to discuss openly how to deal with this and ask community members themselves to come up with a solution should it pose a problem.

Traditional, religious or political leaders can play an important role in creating commitment. This can either be extremely helpful and stimulating for management or hamper it.

In **Pakistan** religious leaders are not directly responsible for community development or project activities. However, it is nearly impossible to discuss an idea that concerns the men and the women of the community without the participation of these traditional leaders. In that sense they have a lot of power to initiate social change.

In **Nepal** the community and also the water committee of Rangapur were heavily divided into two political factions. Half of the community wanted the opposite of the other half. This made it extremely difficult and time consuming to reach consensus on any issue, including which problem to tackle first.

But not everything is perfect. During home visits by the research team in **Colombia**, some people voiced their discontent with water supply management and proposed changes in the system management body. Others defended the present managers. At that time elections for members of the Community Action Board were taking place and the atmosphere in the community was influenced by the political groups who were struggling for power.

However, you will always need to cross-check whether general people are indeed as committed (or not committed) as leaders say. Social pressure may be such that people dare not state a negative opinion in the presence of the leader

Key-informants who are relative outsiders in a community may be good sources of information. Tool 3 may also help to get clarity about people's commitment.

One pitfall is that only influential people are talked to; often men or those people who know how to express themselves. These people are usually not representative of a community. Women or poorer people may have more urgent needs and therefore be more committed. Better off people can show their commitment in money, whereas poor people can only do so by providing labour, and may not have the time to do so. Whereas in some communities different levels of commitment may not be a problem, in others it will be important that you help people understand and respect these differences by discussing them openly. It is also crucial that whenever important information comes in or whenever important decisions are to be made the entire community gets involved. Checklist 1 can help you organise a community meeting.

All this requires that you take sufficient time to talk through and establish a practical and clear basis for collaboration between the community and you/your organisation. This can be a mutual contract, which describes the purpose of collaboration, the proposed process, the role of the various stakeholders (including yours and the community's), the potential outcomes and working procedures. After a draft contract is drawn up, a broad consensus among community members will have to be sought before it is agreed. In the case of a written contract, both the community and the support organisation will have to sign.

In **Nepal** mass meetings are held to discuss with communities the objectives of a project and its approach. NEWAH staff use a poster depicting the process of a chicken hatching from an egg. Everyone recognises the image and understands that the community itself has to make a water supply system manageable and sustainable. Of course, the hen provides the warmth and protection for the egg to develop, but it is the chicken's responsibility to hatch and grow.

See tool 3 and checklist 1.

The community and the community members do not exist; most communities are not homogeneous

What is the issue

Governments and donors often write and talk about the community and the community members, as if they were an homogeneous group of people all having the same interests in the water supply system. In fact, we sometimes do the same in this book. You, being a field worker, know that reality is much more complicated than that. You know that no two communities are alike and that each community has well to do and poor people, men and women, farmers, business people and (traditional) leaders, people with a tap close to their house and people who still have to walk long distances. In addition many communities have various clans or ethnic groups having different cultures. You probably are aware that this variety has a big impact on your work, but that it is not always easy to have all community groups voice their opinions and concerns.

Why do we need to realise that the community and the community members do not exist?

Often the group of households using the same water supply system is called the community. If management arrangements, such as the collection of maintenance funds or taking turns in cleaning the source area, are to be developed this group will have to arrive at arrangements that everyone feels OK about, even though they may have different dreams (tool 21). Such arrangements will soon lead to a breakdown of the system if all the people concerned do not agree.

Differences in the community need to be dealt with. We need to deal with the fact that 'OK', obtained for example through a general community meeting, can have different implications for different people. Five Rupiah or Shillings may be peanuts and therefore OK for a rich business family, whereas it may be a fortune for the subsistence farmer living in the same community and using water from the same system. You, being the person helping communities to sort out how they will manage their system, have to find ways to motivate all groups to voice their concerns and opinions and subsequently to take each others' views and constraints into account. You will have to help them make sure most people feel OK about the arrangements put into place. Only then they are likely to last and be adhered to. Otherwise, sustainability is at stake.

About the community not existing

It is often tempting to get things done quickly by addressing yourself to a few people who have the ability to understand the issues quickly and whom you assume are representative for the entire community. This is understandable, but you really have to be cautious not to make quick decisions with a few people and to avoid only sharing important information with them. The feelings, ideas and interests of many people may be left out.

In **Pakistan** the research team had a lot of difficulties in approaching all people, because the village is widely spread and has many internal divisions. It is a large village of 180 households, divided into four Mohallas (wards). These Mohallas are largely based on family or clan membership. Each clan has its own identity and way of looking at its position in the community. A system of separate meetings with the various groups, followed by meetings with representatives of each group can be useful in such situations.

Quite a number of tools used for diagnosing and planning can easily be used separately with groups of men and women, people who are better off and those who are poor, young and old (checklist 15). Once information has been shared or plans have been made in sub-groups, the outcomes have to be shared with the other groups, so each gets informed about the others' point of view. Only then decision-making should start. Regular community meetings can be organised for information sharing and to discuss decisions. The sub-groups can summarise what they discussed and you can facilitate the decision-making discussions. Tool 16 and checklist 2 and 3 will be helpful when you find yourself in such a position. Tool 23 can help to make various groups in a community feel that collaboration is needed if objectives are to be met.

Another word of caution though: people may get easily embarrassed when a point they made in a small group of like-minded persons is made public in a community meeting. They may back off or even start denying what they said before, leaving you in an awkward and counter-productive situation. If their point concerned the behaviour of powerful people in the community, they themselves may be left with a feeling of fear for repercussions. You will have to make sure in advance that the small groups agree what is to be taken to the community meeting.

In **Equador** people paid for their water supply. Two groups were often behind in payment or did not pay at all: the poor, who probably could not afford it or did not consider water from the water supply system a priority and the rich, who were powerful and felt they could do anything they liked. You as an outsider could suggest publishing a monthly record, for example on the door of the church, whilst at the same time you start a discussion about making a special deal for the poor if needed and about making clear rules on what to do with non-payers.

There are two basic requirements towards dealing with the fact that communities are not homogeneous. The first one is that you will need to be sensitive towards community relations. In order to inform yourself about this, you may talk to someone who has been living in the community, but who is a relative outsider, for example a health worker or a school teacher posted in the community and not having his/her roots there.

The donor agency having implemented water supply schemes in Nyakerato (**Kenya**) assumed too easily that for water supply management the physical and administrative problems could easily be overcome by thinking that Nyakerato was a single community. This was not the case and only through combined efforts of a district water engineer and a high ranking government officer, it was decided that the various wards of Nyakerato would each have their own water committee, bank account and constitution. These three would then constitute a central management committee to coordinate issues of common interest.

The second basic requirement is time. In the short run multi-level consultations as described here take time. However, they will pay off in the long run. Sufficient clarity and exchange in the beginning will avoid issues having to be explained again and again at a later stage because they were not well understood in the beginning.

The need to address various groups within a community may suggest that the composition of the team of field workers has to be adapted. Of course this depends on the local circumstances. In certain areas of Pakistan for example, where women will not talk to male field workers, the presence of a female field worker is essential. In communities where various ethnic groups are present, having representatives of each group in the field team will be extremely helpful.

See tool 16, 21, 23 and checklist 2, 3, 15.

Communities are managing their water supplies

What is the issue?

When talking 'management' with communities we need to realise that people have been managing water, agriculture and other community development activities for ages. There is no need to establish a new management arrangement where the existing one has proven to be effective. We also need to realise that the way water supply systems are managed is not necessarily the same for all communities. At the same time, many management arrangements in the past concerned individual or family owned systems, which are very different from community systems.

Why do we need to look at existing management arrangements?

When projects and programmes are designed, project proposals usually have a paragraph related to 'building management capacity'. Often too little thought is given to investigating management arrangements and practices that already exist in a community. Since we are supposed to take care of drinking water supply, we tend to overlook the fact that the water coming from the standpost is likely to be used for other purposes also. In addition, we often think we know which type of management arrangement should be promoted. This fact sheet discusses the need to build on existing management knowledge and experience and to promote tailor-made approaches. By doing so we are not only respectful towards communities, we also avoid duplicating efforts and wasting valuable time and energy.

About existing management arrangements

Existing decision-making and management arrangement in a community are often insufficiently recognised or even overlooked. You have probably been given the task of ensuring the creation of a water committee in each community where your organisation implements a water supply scheme. However, many communities have managed their own water supplies for thousands of years through structures they themselves developed. They have arrangements regulating access to water sources and about appropriate uses (drinking water, livestock watering, washing, irrigation, etc.) of different sources (wells, springs, streams, rivers, dams, etc.). Women, who have long played a crucial role in the management of water use, make many of these decisions. We need to build on these existing arrangements, rather than trying to have communities adopt new ones (tool 13 and 14).

Which form the management arrangement should take depends on local circumstances and should be decided by the community itself. Existing structures are sometimes traditional, such as the council of elders or chiefs. Sometimes they are village development committees, women's groups, village health committees or agriculture extension groups established in the context of a development project. It is useful to make an inventory of existing arrangements within the community. When discussing a structure for management of the water supply system it is important to take this into account. You can then assist the community in identifying appropriate arrangements for

managing their water supplies with a clear definition of roles, tasks and linkages to existing structures within and outside the community. Where the existing management arrangement is not appropriate to deal with the task at hand, you may consider additional training or the establishment of another water management structure.

Water management often goes beyond the reservoir and the supply system in the community itself. In cases where a source supplies water for various communities, these communities interact and come to certain arrangements on the division of water and to deal with conflicts. New drinking water systems often lead to new ways of diverting and dividing water among communities sharing the same source. You will have to be aware of existing arrangements and assist communities in adapting them to suit new circumstances.

Existing management practices may also have to change when the number of people using the same water source increases rapidly. This can be the case where an existing system is expanded to cover households that had little or no access. Again, you will need to be aware of existing arrangements and assist communities in developing new ones if needed. It may for example become useful to divide the area covered by a committee into smaller areas that can be managed more easily by sub-committees. Arrangements for communication and co-ordination of work by the sub-committees will then need to be included. Your task is to facilitate discussions and to help people discover the advantages and disadvantages of various management arrangements.

See tool 13 and 14.

The facilitator; does s/he need special skills to work with communities?

What is the issue?

Community management is about helping people to prepare for actions that are often felt to be the responsibility of 'the government' or the donor agency. Supporting community management is about facilitating a community dialogue and decision-making processes. Knowing how to communicate in the local language is essential, but a number of other skills are also required. Checklist 1 and 2 are related to facilitation skills, since they map out how community meetings and Focus Group Discussions can be organised. Tool 1, 2 and 3 are tools meant to set the scene for working together and for facilitating community dialogue and decision-making processes.

Why take a look at special skills?

You know that assisting communities in getting the management of their water supplies organised or improved is a challenging task and not always easy. Good facilitation is an art, requiring your sensitivity, creativity and flexibility. You will no doubt have come across situations where you had to be a patient listener and situations requiring your mediation and diplomacy. Too often we think 'we know better and can do it quicker' and we forget that communities have strengths and capacities that can be built upon. Too often we forget that each situation, each culture, each village, each experience requires its own answers from you as representative of the support organisation.

People of Pakora (**Pakistan**) belong to two different religious sects, the Suni and the Ismali. Because of small differences in religious practices it was difficult to gather all the village people. The Suni families did not want joint meetings that included their women. Also, the Suni men did not want to sit in meetings with Ismali women. The research team therefore started their work by arranging for separate meetings for men and women. However, gradually trust developed and gradually the Suni men allowed joint meetings to be organised.

However, it is crucial that people make their own decisions, for example with regards to the location of their taps or with regards to setting the tariffs for water consumption. You can help them do so if you allow them to discuss among themselves, to take a look at an issue from various angles, to weigh the advantages and disadvantages and to find their own best answer to a situation and to act upon it. It may take some time, but quick and possibly unwise decisions will lead to even more time consuming renewed negotiations.

In Rangapur (**Nepal**) political differences among members of a water committee led to tedious and unproductive meetings. Decisions were not taken and actions, for example related to putting in place a system for regular cleaning of the area around the standpost, were not carried out. At a general meeting, facilitated by the field worker, the community decided to dissolve the committee and to select a new, more neutral one.

In **Pakistan**, engineers started major repairs to the water supply system after discussions with a few key individuals in the village. Every time they came into the village to supervise construction, they found that construction had stopped due to quarrels among community members about the layout of the system. They realised that villagers had not had enough time to discuss the system layout among themselves.

You need (access to) technical and financial knowledge, but at the same time you also need the ability to encourage people to discuss issues among themselves without starting to fight, and to help people look from various angles and weigh different solutions.

In this book you will find a large number of tools that can help you. The effectiveness of the tools depends to a large extent on your ability to grasp local concerns and to create an atmosphere that is conducive to mutual exchanges of experience and flexibility.

About such special skills

Building a relationship with the community of mutual trust and respect is of course a first requirement. To achieve this you must use the local language. You also must have the capacity to remain independent and not to take sides. Sincere curiosity, in the sense of wanting to know more about the people you work with and the environment they live in, will help build a good relationship. Some people are curious by nature, others are less so. Should you belong to the latter category, you could set yourself the task of not taking anything you see or hear for granted, but of asking for explanations and background information. Initially, this may feel awkward and unnatural, but experience shows that it creates a good atmosphere. In response to such interest, people feel respected. It will bring you and community members a wealth of useful insights.

As a field worker you often come across a situation whereby you have to facilitate a discussion. An important element of facilitating a discussion is to pose open questions rather than closed or leading ones. Closed questions are those to which you will often get a simple 'yes' or 'no' as an answer. For example, a question such as 'do women attend the meetings of the water committee?' Just 'yes' or 'no' will provide you with very limited information. It does not show whether or not the respondent understood the question. Neither will it give him/her food for thought. By posing a leading question such as 'shouldn't there be women on the committee' the respondent knows exactly what you want to hear. His/her 'yes' may not be very reliable. An open question such as 'what do you think the composition of the water committee should be?' invites people to voice their own opinion and the answer will clearly show whether the question was understood. It is not difficult to pose open questions. However, practice shows that it is tempting to ask closed or leading questions, either to obtain quick answers or to encourage people to say the 'right' thing.

A very sensitive issue is to stop talkative people without offending them and to encourage less talkative people without embarrassing them. Before visiting a community, role-plays with colleagues will definitely help you to find effective ways to deal with such unbalanced situations. Differences may occur among women and men,

or among rich and poor people in a community. Talkative people may be given a role as an advisor. For less-talkative people a pre-meeting can be organised before the actual meeting, or they may be allowed to put forward their opinion in writing.

Summarising a discussion at regular intervals will help people to keep track of what has been said and to prepare for decision-making. Community members can draw their own conclusions from a discussion and then take the necessary decisions. Communities should be allowed time both during and between meetings to discuss issues among themselves without you being around. Giving things a second thought without feeling pressed by the need to take decisions, may lead to better ideas.

Making notes every day by summarising information (such as by drawing charts and diagrams) helps to analyse it and to compare information from different sources. If some information appears to be contradictory you'll have to try to find out why – is it because the various sources talked from different perspectives, one being a woman, the other being a man, or one being rich and the other a poor person? Always share your analysis with the people who gave you the information and ask them to give their view on the contradictions. They will probably be able to explain.

Clear reporting will help you to keep yourself and your boss well informed. This in turn will give him/her a view on what is at stake in the communities. S/he can look for answers to questions, such as: Do common problems exist? Do I have the right staff and financial resources to help solve these problems?

See tool 1, 2, 3 and checklist 1, 2.

Identifying problems and resources with the community

What is the issue?

Technical problems are usually easily identified; a tap leaks, water pressure is too low or water doesn't flow at all. However, underlying managerial problems are less easy to pinpoint. Still, these are equally important to identify and solve, otherwise the technical problems will pop up again and again. Resources required to solve problems include time, money and labour.

Why identification of problems and resources requires a careful process?

A proper identification of problems and resources is crucial for putting in place effective water supply management. Experience has shown that when people are taken through a process of problem identification and when they are allowed to discover linkages between problems they start feeling 'owners' of the problem and responsible for getting it solved. Discussing and identifying community resources usually leads to communities starting to realise their potential to solve problems. Your task as a field worker is to assist people in this. Tool 19 and 20 are both meant to be helpful in this.

The team in **Colombia** discovered that if community members through participation, understand the problems that affect the water supply management and the causes of these problems, the administration of the system is supported. People start collaborating in planning of system improvements. They are also more receptive to educational programmes, designed to stimulate good use of water in the home and good care of the system. Reporting of break downs is now done faster than before.

About identification of problems and resources

As an experienced outsider you are likely to quickly see 'what is wrong'. Still, you will have to resist the temptation to just tell people what is wrong and what they should be doing to solve the problems. You will also have to resist the 'roadside bias', the 'easy talker bias' and the '20-50-year old male bias'. This means to say that once you start up discussions, you need to really enter the community to talk to people living off the main road. You will also need an extra effort to get to talk to elderly people and women and people who are usually not the first one to speak. This ensures that you will also get to talk to poorer households. You should also make sure that you create opportunities for less talkative people to talk openly and that also women, children and elderly people get a chance to voice their opinion.

When collecting information it is best to first try to get to a general overview of the management of the water supply system and only then see whether more detailed information on problems and resources can become available. As indicated above there is a need to also look at what underlies the most obvious technical problems.

In **Sigomere** (Kenya) the problem of insufficient funds for operation and maintenance was traced back to its main cause, a 'lack of metering the amount of water produced'. This omission of metering the water produced made the manager and her staff to understate the revenue collections, despite the fact that water consumption for all consumers and kiosks were metered. Further, it was observed that there was no correlation between the amount of money remitted to the cashier from each kiosk and the amount of water consumed at each kiosk. The respective kiosk attendants remit whatever amount they deem reasonable.

Looking for underlying problems also helps people to break down what seem to be large, insurmountable problems that they cannot solve into smaller problems they themselves can solve.

Different tools (tool 4-14) can be used to get people find out about problems and potential resources and some of them can be used at the same time. Both yourself and communities have limited time available and this must be used effectively. On the one hand, you may need more time to ensure all groups in a community are given a chance to speak and to prevent the biases mentioned above. On the other hand, time may be saved if some of the tools are used simultaneously with representative groups. While one group draws up a community map, another group may fill in a data sheet for each of the tapstands. Your experience will tell you that you need to cross check information you are given, for example when you are told that standpost maintenance is good, it is probably worth checking the information through spot observation. Checklist 4, 5, 6, 8 and 9 are helpful when investigating a situation.

See tool 4-14, 19, 20 and checklist 4, 5, 6, 8, 9.

Finding solutions; trial and error

What is the issue?

'Trial and error' or 'experimentation' may be needed if communities want to find the best solution to the problems they want to solve. When this is well planned, water committees as well as communities at large will be able to compare results and decide on the most appropriate solution.

Why do we need 'trial and error'?

Some problems may be solved in various ways and we do not always know in advance what the best solution is. Still, some dominant groups in a community may think they know what needs to be done. They do not necessarily look at whether their solution is best for all. A solution can be helpful for some, but worsen the situation for many others. You can help the community to list the various possible ways to solve a problem and their advantages and disadvantages. When you also help community members to draw up an action plan for implementation of potential solutions, indicating 'what, how, when, who and resources required', they will be able to select feasible solutions and compare these for final decision-making.

About supporting communities in 'trial and error'

There are also problems for which it is useful to identify and try out different solutions. These include problems such as users not paying their monthly contribution or standpost cleaning not being done regularly. For this type of problems various solutions exist. For example, communities can arrange payment for operation and maintenance on an 'as and when required' basis or on an 'after the harvest' basis. However, some problems do not allow for experimentation, in particular those problems that require expensive solutions such as an extension of the system in cases where communities have grown rapidly.

In cases where there are various potential solutions, these need to be listed and weighed against criteria you can list with the community members, such as: do we have the means to put the solution in place, or do we need outside resources? Do we expect a minor or a major improvement from it? Can it be put in place in a short period of time or will it take a long time? Discussing these criteria and using them to weigh up potential solutions are necessary steps towards preparing a prioritised list of solutions, where one solution is preferred and is followed by the second and third best.

Once this is done communities can draw up an action plan to try the first solution. Sometimes you will find that solutions can be tried simultaneously.

It will be obvious to you that it is impossible to go through such a process with the entire community. You will need a representative group and ensure that outcomes of the process are shared with as many community members as possible, for example through a community meeting. Once the outcomes are shared and an explanation is

given as to how the representative group has arrived at the outcome, people will be likely to accept and show commitment towards the plans.

The action plan can be put in a table format on paper and should be made available to the community chairman or local authority. This visualised plan can also be used to inform to community members at large and to monitor implementation of the plan. Tool 25 provides information about action planning.

In some situations, for example in the case of a number of neighbouring communities having similar water supply systems, communities may try different solutions for a common problem at the same time. This will save time in identifying viable solutions. During and after testing, regular joint monitoring and evaluation should be carried out. The outcomes of the tests are then jointly compared and all participating communities can adopt the most workable solution.

See tool 25.

The meaning of 'management' and management arrangements

What is the issue?

'Management' is a word with many definitions. The way management is defined determines what the best fitting management arrangement is, and what the necessary management capacities are. When communities manage their own water supplies, the communities decide on the management arrangement they want to put in place. A number of factors are crucial when selecting the most appropriate management arrangements, such as available capacity in the community, the existing support environment and relevant legislation.

Why take a close look at management and management arrangements?

For many people 'management' of a water supply system equals operation and maintenance. Others define management in terms of decision-making power. Basically 'management' can be defined as being responsible for the sustained functioning of the water supply system at the service level and costs that were agreed upon. Whereas a community as a whole can take decisions and can set rules, a community as a whole can not 'manage' a system. This requires a 'management body' that is responsible and understands the tasks involved and that is accountable to the community as a whole. There is a need to define management and management tasks with communities and to be creative in assisting communities to find the most appropriate management arrangement to deal with those tasks. When doing so, you will need to look at management arrangements and management experiences existing in the community (also see fact sheet 4). At the same time you will need to identify the type of support communities might need and feed this back to your organisation.

About management and management arrangements

As a problem analysis may show (tool 19 and 20), management of water supplies goes beyond taking care of operation and maintenance like a caretaker does. It also entails ensuring, for example, that users remain satisfied with the service level they get, that they are willing to contribute to its functioning, that money keeps coming in and that conflicts with neighbouring communities over water resources are prevented or solved.

In Campoalegre (**Colombia**) one of the most delicate problems the village inhabitants have with the water supply is related to unauthorised connections leading to the fraudulent loss of most of the volume of water. The continuous development of new settlements near Campoalegre has resulted in great social pressure on water access. This requires careful management.

Community management can be divided into social management, technical management and financial management and deals with planning, organisation, decision-making, co-ordination, control and monitoring. Community management is also about sustainability; ensuring that the system keeps on functioning, that water is

used efficiently, and that users are satisfied and hence willing to pay. Ultimately, the sustainability depends on clear management arrangements, a well functioning management body and on the community as a whole holding this body accountable

The most commonly applied arrangement in rural areas is the instalment of a Water Committee that is accountable to the community. Such a committee usually consists of a number of community members carrying out various tasks on a voluntary basis. These community members may represent tap or neighbourhood committees. A water committee may also be a sub-committee of a village development committee. Various water committees dealing with a large system may also form a representative association. Committee members may carry out the management tasks themselves. However, you may also run into a situation whereby for part of the work, for example maintenance of the system, a private entrepreneur from within or from outside the community has been asked to provide services. The water committee checks the work of this entrepreneur and may decide to make use of the services of another provider if the quality of the work is not good. Checklist 16 provides some hints on the use of private entrepreneurs.

Seven communities of the municipality of Aguacatan (Guatemala) joined hands for the rehabilitation and management of the water supply system they were all part of. Seven local committees were organised. All had two representatives in a general assembly of 'associates'. From this assembly a Central Council was elected. Later on the idea developed to institutionalise the water service, that is, to make it run as a 'business. APAGUA was born. It has land and an office equipped with desks, blackboards and water engineering equipment. A general co-ordinator and an accountant have been appointed as paid staff.

If community management is to work, you will need to assist the water committee in building good relations with support organisations, such as local government. They will need to attune their operation and maintenance responsibilities. Although communities may be able to take on a very substantial share of the management through their committees, the involvement of support organisations such as the one you are from, will usually be required. Communities can turn to them in case of problems they cannot solve themselves. At the same time a community needs to keep the local government informed about its activities, in particular when it wants to expand the water supply system or explore the use of new sources.

Your role is to assist communities in establishing the management arrangements and in ensuring the selection of the most appropriate people on the committee, taking as a starting point the management tasks at hand and the capacities and other resources available in and around the community (tool 18). It is very important that there is clarity on tasks, responsibilities and rights and that there is clarity on how the work is monitored. Crucial elements in this are proper decision-making and conflict management (tool 15 and 16 and checklist 3).

Water supply system with household connections³

What is the proposed management body?

A water committee administrates the operation and maintenance of its water system, with supervision and support from the government agencies.

How is the management arranged?

The water committee will collect a water tariff from each household with a connection. In most countries, this will have legal implications and in some, special legislation will be required.

The water committee will purchase fuel (if required) and other materials (such as bleach) and employs on a part-time basis someone to carry out operation and maintenance tasks. Usually this will be a plumber or operator, and perhaps a watchman/assistant. The treasurer of the committee may also receive some small remuneration for the work of collecting the tariffs, keeping the books, etc., especially where this work is considerable.

Twice a year the water committee will organise a stakeholder meeting to which also all community members are invited.

See tool 15, 16, 18, 19, 20 and checklist 3, 16.

3 Adapted from Mvula Trust: guidelines to community managed water and sanitation services.

Role and selection of a water committee

What is the issue?

The establishment of a water committee is usually seen as a good way to arrange water supply management. Roles and responsibilities towards the community and towards you and your support agency need to be well defined. Legal arrangements have to be in place to give the committee the necessary authority. Committee members need to indicate when training is needed.

Why the selection of committee members needs proper care?

The establishment of a water committee is often done too quickly and the most outspoken or the most powerful community members offer to become members. However, they may not have the skills to do the job. This can result in an ineffective committee and, in the end, an unsustainable water supply system. Your role is help the community to clarify roles and responsibilities, to guide it stepwise through the selection of committee members and to ensure that the right support (for example in terms of training) is provided.

About selecting committee members

A water committee is an often voluntary body, selected by the community to represent it in discussions and decision-making about all aspects of local water management. If a committee is going to function smoothly and meet the needs of the community it represents, the committee should represent all segments of the community, better off and poor, men and women, groups living in different areas. It is usually felt that a water committee requires a chairman, a secretary and a treasurer. In a community where traditional village elders and a local government administration exist the selection of the chairman in particular requires careful and elaborate thinking: Should the chairman be a traditional elder, the new village chief or neither of the two? How does a water committee tie in with traditional and administrative structures?

Making the selection of committee members an elaborate process may cause, but also prevent bad feelings. Those offering to become a member are easily offended if they are not selected, whereas less powerful community members may be happy about the chances given to them. You will therefore have to stimulate openness and transparency about the selection process right from the beginning.

The timing of the establishment of a water committee is flexible. Often a water committee is established when collaborative work with an agency to implement a water supply system begins. Once the management of the system has been decided, the implementation committee may be adapted or changed altogether to create a committee that manages the system.

The community as a whole will have to decide on the composition of the committee. When communities are in the process of selecting committee members you can assist them by systematically taking a look at roles and responsibilities of the committee and at people having the capacities to fulfil these roles and responsibilities (tool 18 and 24). Being literate is sometimes considered to be a necessity, but may not be essential if someone has other important qualities, like vision, trustworthiness and commitment.

Possible roles of the water committee⁴

- be responsible for structuring community discussions around system management;
- organise contributions and control finances;
- ensure continued equitable access to water;
- promote hygienic and effective use of water facilities;
- appoint and monitor staff to maintain the water scheme and oversee the collection of user-payments;
- act as a liaison when dealing with other stakeholders;
- discuss with agency staff how best rehabilitate or extend the water system to meet the changing needs;
- manage procurement during construction of system extension and provide day-to-day supervision of the construction;
- make sure the community is informed.

One pitfall to be avoided is assessing only the capabilities of prominent, talkative people in a community. We should be careful not to leave out women and poor people, as their participation will ensure that their perspectives are included in management decisions. Women and poor people should get an equal opportunity to benefit from remuneration, increase in status or participation in capacity building activities. Sometimes the obstacles to the involvement of women and poor people in water committees are not purely cultural, but more practical in nature. Examples are meetings being held at times when women are not available, or when poor people working for richer families are asked to attend during their hours of paid work. Meetings may be arranged at venues that are too far or unsafe to travel to. One way to avoid this is taking into consideration information collected earlier in the process.

At intervals you may want to discuss with the committee whether the tasks have changed over time and whether the present committee members feel they can still handle everything, or whether some new members have to be selected. Management arrangements require a set of rules and regulations. In countries with clear legislation on community organisations local rules and regulations need to be compatible with national rules on content and formulation. Rules are written up in a constitution and the committee is registered with the competent authorities. Drafting and getting consensus on a constitution among all community members usually takes up quite some time. Fact sheet 14 gives more information on this issue.

See tool 13, 18 and 24.

4 Adapted from Mvula Trust: Guidelines to Community Managed Water and Sanitation Services (module 3: Water Committees).

Technology options; where can communities have a say

What is the issue?

When an existing water supply system requires extension or upgrading, a number of factors influence the choice of the water source, technology and design. Most factors are 'negotiable'; a few are not. For example, a gravity flow system is most suitable for a hilly area and there is no point in discussing with the community whether it wants a gravity system or handpumps. However, it may be useful to discuss whether the handpump should be a Volanta handpump or an India Mark III. Where factors are not negotiable the community members need to be well informed. Where factors are negotiable community members need to be a main partner in decision-making about technology choice and design.

Why do people need a say?

Having a say in choice of technology and design of facilities has a positive impact on use and sense of ownership. A sense of ownership is crucial for good management and can be brought about in a number of ways. It can be established if people pay for the facilities, but also if people are allowed to select the most appropriate technology and design. When extending or rehabilitating the system, involving community members in the selection process will also give them the opportunity to voice their opinion about their capacity to maintain it. Guiding community members through a selection process requires that you are to some extent familiar with technology and design options and, more importantly, with selection criteria such as operation and maintenance requirements and cost implications.

About providing a say in selection of technology and design

Before asking community members to voice their opinion about the choice of technology and design, you should help them to get a clear view on why they want the system to be extended or rehabilitated. This information is needed for decision making regarding for example the amount of water to be supplied and about the design of standposts. Possible reasons for wanting extension or rehabilitation include:

- to cater for the needs of the growing population;
- to get back to the service level that existed when the system was just installed;
- to upgrade the service level;
- to obtain water for income generating production.

Through consultation with community members, a water committee should explore which of these goals are the most important. Through dialogue the committee needs to determine how much people are willing to contribute to achieving them. Men, women, better off and poor people might have different priorities and some might be willing to pay more than others and this needs to be sorted out before the community selects the technology (tool 9). Fact sheet 12 gives more information on this issue.



Explaining the options will help people make a choice

Having established how much water is needed, you need to discuss with community members which water sources are reliable and feasible given the geographic situation. The yield of a spring or well is best measured in the dry season. In order to cater for identified water needs, the possibility of using a combination of sources and technologies should be considered. Checklist 4, 7, 8, 9 and 10 will help assess the water supply situation. The use of local (historical) knowledge of sources and their yield is very important (tool 14).

The Nyakerato community, **Kenya**, gets ground water through a shallow well as well as spring water through a gravity scheme. The shallow well is not functioning and many people want to be served through the gravity scheme, even those living on a plateau too high for this scheme to reach. This issue has not been addressed sufficiently and people are not properly educated about it. Some people living high above the gravity source contribute money and time to the management of the gravity scheme in the vain hope that one day they too will be considered for such a scheme. At the same time they neglect the shallow well built on their plateau.

Before any decision is taken with relation to the use of a water source, clarity about the water rights is required. The local or regional office responsible for Water Affairs should be able to provide information on issues such as:

- possible restrictions on abstracting ground water or water from a river or source;
- possible restrictions on building structures in a river channel;
- whether the water supply scheme being planned, will deprive someone downstream of the water they are legally entitled to.

Once this information on preferred water uses, water availability (checklist 4) and legal issues is available you may start facilitating discussions on sources, and on design and location of facilities (tool 22, checklist 12). Again it is important that this is discussed among a good representation of the community in order to arrive at a community wide consensus on design and location issues. Again you may ask a technically skilled colleague to join the discussion for advice, but also for him/her to get acquainted with people's considerations. S/he can take these into account when s/he goes to the drawing board.

When technical options are discussed it is also crucial to make communities realise the financial and maintenance requirements related to the various options (checklists 11 and 14). They need to look at to what extent they are willing and able to meet these requirements before they make a decision.

See tool 9, 14, 22 and checklist 4, 7, 8, 9, 10, 11, 12, 14.

No water management without sanitation and hygiene

What is the issue

Water supply management includes ensuring that water remains clean from source to mouth. For this we need sanitation and hygiene measures. The responsibility for some measures, such as building and using a proper latrine, keeping the storage pot clean and drawing water with clean hands, lies at the household or even at the individual level. Measures for the protection of the quality of the water, such as fencing the source or covering a well, are community responsibilities.

Why are sanitation and hygiene important for water management?

In order to improve people's living conditions a water supply system is meant to provide people with better services than they had before: a larger water quantity and better water quality. Water supply management should therefore address both and make sure that both water quantity and quality remain at an acceptable level. Sanitation and hygiene are crucial for maintaining the water quality. So when you discuss management with communities, you also need to address sanitation and hygiene measures (checklist 6).

About water and sanitation

Water provided through improved facilities can easily get contaminated. The source can become polluted as a result of defecation by people or animals too close to the source. Dirty hands or a dirty dipper can easily contaminate water in a container. You can probably think of many more examples of behaviour that turns clean water into contaminated water. This largely diminishes the positive health impact the water supply system can have.

A programme that aims at improving people's health by ensuring a good supply of water should therefore include sanitation and hygiene education. Sanitation and hygiene education are to be given as much importance as water supply. It has to be taken into account that implementation of sanitation and hygiene education usually requires much more time than water supply.

Approaches to sanitation and hygiene promotion include:

- Production and dissemination of educational materials: posters, comic books, work books, school supplements targeted at a wide number of communities and audiences;
- Participatory hygiene education; whereby field staff facilitates the process of identification of sanitation and hygiene relation problems and potential solutions to these problems;
- Mass promotion through sanitation campaigns and showing health and hygiene drama.



Hygiene measures are crucial if water is to be kept clean

However, there is a tendency to bombard communities with a vast array of messages, largely designed outside the village and often not adapted to local conditions. Also, sanitation and hygiene promotion is at times still too much one-way communication, telling people what they should do: wash your hands, clean your toilet, keep water points free from stagnant water, etc. Hygiene education often addresses women only, whereas impact can be hugely increased when children, informal health care providers, men, political and religious leadership structures are involved.

Sanitation and hygiene promotion is all about changing behaviour. For it to be effective there is a need to carefully find out why community members act as they do, what motivated people to adopt hygienic behaviour and what prevents others from changing behaviour. Tool 4, 5, 6, 7 and 8 help to increase understanding. Sanitation and hygiene promotion activities can be based on these insights.

See tool 4, 5, 6, 7, 8 and checklist 6.

It's all about money; cost items and tariff setting

What is the issue?

Construction of water supply systems, requiring so-called capital investments, as well as their operation and maintenance require financial resources. The government often caters for capital investments from its own resources in combination with donor funding. However, recurrent costs for operation, maintenance and depreciation are usually covered by water users themselves. Less clarity exists as to who is responsible to cover costs involved in extending or upgrading the system in the case of a growing population or a demand for higher service levels.

Why talk about money?

The availability of financial resources to extend and upgrade the system in future and for operation and maintenance is crucial for sustainability of the service. Payment systems are usually established, but they often do not function. Lack of funds for operation and maintenance will lead to systems that fail to function. Poor service levels will ultimately also lead to systems running down, because people are not prepared to pay for a service they do not want. If operating costs cannot be covered, the system will remain under-used and the delivery of water of sufficient quantity as well as quality is at stake. If maintenance and repair costs cannot be recovered, more breakdowns are likely, since pressure on those parts of the systems that are still functioning becomes too high. If depreciation costs are not recovered, any renewal of the system or major repair can not take place without external funds. Hence the need to help communities develop a sound financial system.

About money and recovering it

Once you start working with the community you will need to discuss with the community who is going to pay for what? Clarity is needed about the capacity and willingness of the community as well as of your organisation regarding payment for operation and maintenance, upgrading or extension and rehabilitation. You are to ensure that negotiations take place that lead to a written agreement between your support organisation and the community in which it is clearly indicated who is responsible for what costs.

Cost items include: construction materials for upgrading, extension or rehabilitation; spare-parts; salaries for skilled and unskilled labour; the caretaker or an outside advisor; petrol for the pump; rent for the land where the spring intake is located; and depreciation of the system.

If community members are to contribute, tariffs need to be established and the water committee needs to develop a system for a tariff and collection. However, it needs to be clear to all users how tariffs are made up. Users must see how costs are being minimised without putting quality and service levels at stake. Understanding this

motivates people to contribute and offers them opportunities to pose questions and make suggestions that may lead to more realistic tariffs. In countries where water is considered to be a free commodity, it is often easier to motivate people to pay for concrete things such as a salary for a caretaker, petrol or spare parts than for water as such. You may explain to people that payment is not necessarily for the water, but for the service and convenience of having clean and safe water each time they open a tap.



A user card helps to keep track of payments

When calculating a fair price or tariff for the water service, one should not under-budget. A realistic target should be set for how much money is to be raised every month or every year. There will always be unexpected expenses and people who do not pay. It is extremely important that the water committee is transparent about the way the tariff has been set. Checklist 11 will help you remember all the necessary financial items to be discussed.

With the help of the research team the committee in Barrel Chiquito (**Guatemala**) discussed activities necessary to operate and maintain the water system. They realised that the money collected with the fee was not sufficient to cover administration and maintenance costs, which included:

- purchase of cleaning materials;
- spare parts;
- salary of the water engineer;
- trips of the committee to San Marcos to give an accounting of income and expenditure to the departmental government as well as to Quetzaltenango for loan payments;
- paper work, photocopying and communication;
- office supplies, such as filing cabinet, stapler, hole punch.

A cost was assigned to all these items, and the total was put forward in a general community meeting, making people see the necessity of increasing the fee. This meeting was held in December, when all families were represented and they had money from their work on plantations and from their coffee harvest.

It is important to distinguish between willingness to pay and ability to pay. Some people may be willing to pay, but not able. Others may be able, but not willing. It will not always be easy to find out what is actually the case. If people say they are not able to pay, you could use wealth-indicators, relevant to the area you work in, to cross check (tool 9).

Wealth indicators include:

- cattle, goats or sheep owned;
- type and number of house (zinc, thatch, grass, brick, block, etc.);
- size of cash crop farm;
- number of wives (in some communities);
- bicycle or car owners.

Should there indeed be people who are too poor to pay in cash a community wide discussion is required on possibilities of paying in kind or through labour or of even being exempted from paying. 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. It may also be useful to discuss the possibilities of income generating activities to cover costs, either by poor individual households or by the community at large.



Water can also be used to generate income

In Lele (Nepal), surplus water from the source is sold to a mineral factory. A five year contract was signed whereby the factory pays a fixed amount of Nrs 1,000 per months. This money can be used to cover operation and maintenance costs.

If people are not willing to pay, you will need to help the water committee to find out the reasons. The service level may be too low or breakdowns may not be repaired quickly enough. When attempting to increase people's willingness to pay, these problems need to be solved.

For discussing sensitive issues such as willingness and ability to pay tool 28 can be helpful.

See tool 9, 28 and checklist 11.

Transparency and financial control

What is the issue

For management of a water supply system there is usually a small group, like a water committee, that operates on behalf of a larger community. The water committee should keep the larger community informed or the community should be able to keep itself informed, on what has been decided and how their money is spent. Various ways exist to create such transparency.

Why is transparency needed?

Transparency makes people feel at ease with the costs they are being asked to pay for their water supply. Suspicion can arise if community members do not know what is decided, why certain decisions are taken and how their financial contribution is used. Even if lack of transparency is not intended, people may decide to stop paying their financial contributions. This puts the sustainability of the water system at stake. Transparency must be ensured. You can assist a water committee to put mechanisms in place to keep the community at large informed and, where needed, involved.

About transparency

Financial management and transparency are among the more problematic aspects of community management. Some of the more common problems are:

- influential individuals are placed in positions of financial responsibility and run the project without accounting for their actions to the community;
- conflict arises when individuals or groups wish to gain access to the funds by using their influence and power in the community;
- members of the committee who are trained in financial control, might leave the community once they have gained the skills to pursue a more attractive livelihood elsewhere;
- lack of clarity about how money is spent.

A water committee needs a clear structure, policy and control system to ensure that funds are correctly used and accounted for. It must also have a clear understanding of what expenditures may take place, what the costs will be (see fact sheet 12) and when payments are required. Helping the committee to draw up a budget will help it to focus on these issues. A budget is used to calculate the expected income and expenditure for a set period of time. It lists all the money the committee expects to receive and when it expects to receive it. It also lists all the goods and services that will need to be paid for.

Once a budget is in place, the water committee needs to keep record of all funds moving into and out of the water committee. Basic bookkeeping techniques, using a cash book and receipt book can be used to record and monitor financial information.

A cash book shows all the transactions and the balance at the end of the day. It contains two columns: one for income and another for expenditure. It includes coins, notes, cheques, money deposited into the bank, etc. At the end of the month, if there is a bank account, then the cash book has to be compared with the account statement

Date	Description of expenditure or income				Amount	Expenditure
	Materials, materials, repairs, spare parts	Payments to water company	Salaries and other payments	Other		

adapted from materials provided by Johnny Rojas, CINARA, 1999

Keeping a diary creates transparency

from the bank. A receipt book carries the receipts that show that a community has paid for particular goods or services. Receipts are numbered and made out in duplicate, with one copy for the payer and one for the treasurer. In this book a record of all income is kept. A register of ratepayers is kept with columns for each month. The number of the receipt is entered under the appropriate month after payment has been made.

Keeping track of where money is going is an essential part of ensuring that it is being used properly and that future needs for funds can be planned. This will allow actual expenditure and income to be compared with what is stated in the budget. This will also help to identify financial problems quickly. Transparency is about sharing this information by submitting financial reports to the community and allowing community members to ask questions about the figures and how the budget is to be used. Organising community meetings (checklist 1) at certain intervals is a means to report on income and expenditures over the reporting period. Popular theatre (tool 28) can be used to discuss sensitive issues such as transparency.

In Belen (**Guatemala**) a water committee support group was established to monitor the performance of the committee. This support group tried to establish how much money the committee had, to see what more could be done. However, the two people that had the project under their control were not very much in agreement with the local support group. The treasurer and the secretary did not want to give the information, saying that the support group was not elected by the community as committee members, nor did they have credentials.

For continued transparency on income and expenditure, bookkeeping and accounting are essential. In some communities there may be a lot of experience with keeping accounts, for example because there are people running a business. Managing a water account may not be a problem for them. However, in the case of communities with little or no experience you may need to arrange for specific training. Training should provide tools to enable the water committee to keep books properly, to ensure transparency for creating trust and confidence in the water committee. Such training may include issues such as tariff setting, users registration, account keeping, auditing.



Explaining how money was spent

You can either provide on-the-job training yourself or arrange for training outside the community. You may want to discuss also whether they want to keep small or large savings in the bank. In the case of high interest rates keeping large sums may be useful. However, if your country suffers from a high inflation rate, it is not very useful to have large savings. Maintenance funds are then better collected as and when required. Continued transparency may also be guaranteed through a regular audit by an external agency or a small committee composed of community members who are not part of the water committee.

In **Guatemala** the team identified the following minimum tasks for the community treasurer:

- to collect contributions from consumers;
- to deliver receipts for the money received;
- to manage the cash book;
- to pay for contracted services and other expenses;
- to elaborate financial reports and presenting them to the committee and the community;
- to control the committee and community assets;
- to register and control the materials and spare parts in stock.

See tool 28 and checklist 1.

Legislation and legal issues

What is the issue?

Management by communities only works effectively if legal arrangements are put in place. Too often legal backing for a water committee is missing, making these bodies ineffective. If they do not have a legal status, they can not open a bank account or enter into contractual arrangements. They cannot do their work properly and this puts the sustainability of the system at stake.

Why do we need to deal with legal issues?

Management of water supply systems requires frequent decision making, for example about water tariffs, water allocation or sanitary measures to protect water resources. Many parties are involved and affected by such decisions. The more parties are involved, the more chance that disagreements will occur and that necessary decisions are not taken. You have probably also come across many instances whereby a committee complained to you that community members do not follow its suggestions, that people do not pay their operation and maintenance fee, or that it cannot solve a water source dispute with a neighbouring community. This may seriously hamper management of the system. Committees require recognition and the legitimate authority to perform their task. Legal arrangements can help. You are in a good position to liaise between the community and the local government to find out about the arrangements to be put in place.

About legalisation

Setting up rules and regulations or a water constitution is often considered to be an important task of the water committee. These rules and regulations need to be backed up by the force of law. Once disagreements arise people may otherwise easily set rules and regulations aside, saying that they are not valid. Also the committee itself might be challenged for not having legal authority. It is therefore very important to assist communities in getting their committee and their constitution registered as a legal body, for example an association, with the competent authorities.

The Sigomere Water Supply (**Kenya**) is registered with the Ministry of Culture and Social Services. This registration, though common for all water committees, is deficient, as it does not provide community groups with sufficient legal status to enforce their constitution. To overcome this obstacle, the Sigomere Water Supply Constitution draws on the Chief's Act, which allows for water committees constitutions to be enforced as long as the individual constitution provides annual audits.

Often a committee formulates its own rules and regulations or by-laws that are needed to efficiently and effectively manage the community water supply system. You can help by providing insight into the national water act, within which the local rules and regulations are to fit. You may also arrange for expert advice.

In Guatemala the principal reason for making new regulations was that the previous ones were not well understood and, on top of that, they were lost. The committee simply did not have a document for the agreements that guaranteed good administration of the project.

To make new regulations, the committee members, the water engineer and three beneficiaries met. Three themes were identified for which regulation were required:

- rights and obligations of the beneficiaries;
- functions of the committee;
- functions of the water engineer;

The first theme had to do with sanctions and prohibitions of the beneficiaries related to: the size of the cisterns, recommended uses of water, use and maintenance of latrines, work patterns for project maintenance and repair, fee payment, and contributions in case of emergency. The second theme dealt with the functions and roles the committee ought to play within the water project as well as its tenure. The third theme dealt with the functions, obligations and sanctions of the water engineer.

A goat for water in Nkouondja, Cameroon

Mr Isiaka from Nkouondja reports the increased confidence of his community in water management and the practical use of minutes: 'We were collecting funds for the maintenance of our system, and one young man refused to contribute. We discussed the matter in the council and fined him, yet he still refused to pay. We then caught one of his very big goats and sold it. He came and started a fight. The people had beaten him. He went to the police to report the matter. The police invited me and I went. On arrival the man had told many lies to this policeman and he threatened me without even asking about the matter. I kept quiet and the policeman then asked what was actually going on in the village. I explained everything, the man was surprised. Still not convinced he asked whether the village organisation was recognised by the authority of the area. I showed him the Divisional Officer's letter. Now he asked for evidence that it is this village that had formed this organisation. I showed him the minutes of the meeting that was held before the application for administrative recognition. The policeman then turned to the young man and asked if he was a member of this village. He accepted. He asked if he drinks from the water and the young man said that only his wife goes to collect water. The policeman then smiled. He drove both of us back to the village to settle the matter there. The young man had no choice but to forget about the goat.

An officially registered water committee also becomes a legal entity to the outside world. Should conflicts arise with, for example, a private entrepreneur whom the committee has asked to repair a borehole, the committee can sue this person and bring him to court. Being a legal entity it also becomes easier for a water committee to access funding from a bank. It will also increase people's trust in the committee, since a legal entity is bound by certain rules with regards to reporting and accounting, which makes its performance more transparent. An additional advantage of the committee being a legal entity may be that committee members are no longer personally liable for debts,

contracts and other obligations. This will increase people's willingness to become committee members.

It is important that the community at large is well aware of the possible legal arrangements and the consequences of each of these arrangements in terms of the rules and regulations (by-laws). There is a high potential for political interference and conflict when people have different interests (checklist 1). Again, expert legal advice may be useful. It can not be stressed enough that you have a crucial role to play when it comes to ensuring transparent and considered decision-making (tool 16).

In **Colombia**, a new national law lays the responsibility for construction and management of rural water systems with the municipalities. Elected water committees are now compulsory and have legal status. This has created a new situation in which communities are free to seek assistance from either specialised sector agencies or from the private sector.

See tool 16 and checklist 1.

Without monitoring the system will fall apart; the importance of keeping track

What is the issue?

Monitoring is the process whereby information about the water supply service is collected, checked and analysed in order to improve the situation in case the situation is not as good as expected. In fact we monitor all the time, although we may not be aware of it. Farmers keep an eye on their field and undertake action if too much weed starts to grow, parents watch their children and visit a doctor if it has diarrhoea all the time. If farmers or parents do not act upon the signals they get things will go wrong dramatically. The crop may yield too little, the child may even die. This illustrates the need to know what to look at, and to know what action to take.

Why talk about monitoring?

Management and performance of the water supply system also need to be monitored. Community members need to find out when and where it goes wrong and they need to know what action to undertake to remedy the situation. If this is not done, the service level will go down as a result of breakdown, people will no longer be prepared to pay for operation and maintenance and the system will ultimately fall apart. People may not always know where to go with information about the system or who is responsible to undertake action. Once system monitoring is put in place we often tend to collect too much information, without really using it to solve problems. This is a waste of time of the information collector and of the information provider. We therefore need to decide what we really need to look at and how we can make monitoring meaningful.

About monitoring

Monitoring is usually done at various levels. The government will monitor how many communities have well-functioning water supply systems. Your office will monitor how many communities are served in the district or project area. However, monitoring of management and functioning of an individual water supply system is best done by the community itself, in particular by a group which includes members of the management body. They have a vested interest in the functioning of the system and this helps ensure that action is taken if monitoring information shows the need for it. If you want to assist communities to set up an effective monitoring system there are a few steps you need to know about.

First of all community members need to raise (potential) problems with the water supply system and any concerns they have with relation to its management. This could for example be that the pressure in the tap is irregular or that they feel that rich people benefit more from the system than poor people. It is obvious that various groups within a community need to be asked to formulate their problems and concern. When asking a rich man and a poor woman you will get very different lists.

Secondly people should determine what for them is the optimal situation. With regards to the water pressure for example, the problem could be that throughout the day there is too little pressure in the tap. People may indicate that water pressure is no longer a problem if at least three hours a day the pressure is high enough to fill a bucket within 1.5 minutes. With regards to the division of benefits, people may feel that the problem no longer exists if the water to the branch lines going to the various neighbourhoods is divided proportionally. It will be clear to you that such so-called indicators may vary per community, even though these communities identify similar problems. It is important that there is clarity and consensus about the indicators and that everyone collecting the information is aware of this. Checklist 13 provides a potential list of monitoring issues and tool 17 can be used for actual monitoring.

When discussing who should collect the information the main question to answer is: who has most interest in accurate and honest information? Those having such an interest may also best analyse the information. However, this should be done in combination with those who can mobilise the right people or resources to solve problems. How information is collected depends on the indicator. It can be done by asking people, or by observing their behaviour or environmental changes. Information gatherers should always ask themselves whether the method they choose and the people they ask will provide reliable information. In the case of irregular pressure for example, two users per tap could be asked regularly to measure pressure using a bucket and a watch to find out in how many minutes the bucket is filled. They should then inform the caretaker about the outcome, for example that it fills too slowly. Checklist 8 provides insight in how yield can be measured. Measuring the yield of a tap can be done the same way as measuring yield of a spring. In the case of finding out whether water remains to be equally divided, a sample of rich and poor users could be asked at regular intervals about the service they receive. Information, for example about changes in water flow to the various parts of the community, can be brought to the water committee for analysis and to determine remedial action. An operation and maintenance plan (tool 26) will help determine the type of indicators.

In Barrel Chiquito (**Guatemala**) every six months the committee would visit the houses of the beneficiaries to monitor the use of the water and latrines. Dona Teodora recounts these visits: "When people found out that the committee was going to come they would get worried and clean all around their cisterns so as not to leave signs of water being spilled about. But we knew from what the neighbours told us that the water was spilled. They also swept the latrine so that it was clean when we made the visit."

Community members also need to know what to do if nothing happens to solve the problem or to improve the situation. If the water committee does not take action, the problem remains and the situation will probably deteriorate. Community members need to be well aware of possible avenues for support, for example from a government agency at district level. Tool 24 explains how you can help community members assess performance of the committee.

In Guatemala, the Ministry of Health and Social Assistance is legally responsible for the construction and control of water supply systems. The government runs five programmes, three of which fund projects. An Institute for Water Resources was created in 1992. More than 200 NGOs also construct water systems. Every institute has its own norms, including whether or not water and/or maintenance is to be paid for. However, the National Plan stresses participation in construction, charges communities for operation and maintenance work, and entitles them to set their own tariffs. Although all the agencies stress the importance of participation, few give the communities a say in decision-making. Training for management focuses on operation and book-keeping, and is given to men, whereas women receive hygiene education. The systems are managed by committees, which are elected by men. After construction, the systems are monitored and maintained by the agencies. There are water shortages, due to environmental, technical and managerial problems and the inefficient use of water. Committees and operators are not trained to deal with these issues. Water quality is affected by inadequate source protection and the lack of sanitary systems. Capacities must be developed for managing water resources and supplies.

See tool 17, 24, 26 and checklist 8, 13.

Potential technical problems; can communities handle them?

What is the issue?

An important part of water supply management is the ability to deal with technical problems, such as declining water pressures in the taps, decreasing yields, the need to extend the system to cope with an increasing population or the need for water treatment as a result of pollution. Some problems can be dealt with by the community itself; others cannot.

Why you need to know about potential technical problems?

Technical problems must be dealt with as soon as possible, because they affect the service level people are used to. When the water pressure drops, users will have to spend more time filling their water container. When water becomes muddy as a result of leakages, people may no longer be willing to use and pay the water and go to a further, unsafe source. When the population grows, people have to queue up longer than before. As you can imagine, when users start experiencing such inconvenience, their willingness to use and to pay for the service declines. This will have a negative effect on the finances of the management body, which will not be able to carry out its tasks. This will put the sustainability of the system at stake. It is therefore crucial that you have some basic knowledge about what type of technical problems may occur and how you can assist communities to deal with them. In case real technical assistance is required, you will need to call in the appropriate assistance.

About the potential technical problems

Technical problems can broadly be grouped in two categories. The first is related to the need to increase the capacity of the supply system, through the expansion of the existing system or the construction of a new one. Technical solutions include increasing water catchment capacity, building storage and distribution tanks and increasing pumping capacity, extending piped distribution systems or installing new handpumps. Such solutions require capital investment, engineering support, and, usually, outside financial support. You may assist in formulating project proposals, identifying outside financial and technical support, and mobilising local contributions. Your role is to assist the community in agreeing on, for example, the preferred location for the distribution tank, or pipes and standposts (see also fact sheet 10 and checklist 12).

The second category of technical problems is related to breakdowns, repairs and possible rehabilitation of an existing system. The purchase and use of spare-parts or replacement equipment like pumps may be required. If the nearest workshop for spare-parts and equipment is far from the community you could encourage the water committee to develop a maintenance system. This should include assessing regular spare-part requirements, stock keeping of spare-parts and setting tariffs that allow purchase of spares. Checklist 14 lists operation and maintenance requirements for various technology options. Technical assistance from outside may be required. One of

the main problems with the repair or the connection of new users to an existing system can be that this is done by 'unqualified' technicians, who do not know sufficient about how the system was built and about the impact of additional connections on system performance. They may also use inappropriate materials, such as car tubes. Technicians called in from your office or from a private entrepreneur need to be well qualified and well aware of how the system was built. Particularly when using a private entrepreneur, the water committee will need assistance to formulate clear terms and conditions for the entrepreneur and to make financial arrangements. The work of the technician or the private entrepreneur needs to be arranged carefully and closely monitored (tool 29 and checklist16).

For any of the breakdowns it is important to find out why it occurred. Was it due to improper use, to natural disaster or to some other reason. Depending on the cause, appropriate action such as raising awareness of users on proper handling, can be determined to prevent similar breakdowns in future.

Whatever the technical problem and the solution put in place, you will always have to encourage and assist communities in finding the 'problems behind the problems' in other words, the real causes for lack of enough good quality water. Just solving the technical problem will not give a durable solution. You will have to address the underlying managerial problems as well as the management implications of the new solution. Fact sheets 8 and 17 deal with this more in detail.

A new technical solution may require different management capacities at the level of the community. This has to be compared against the management capacity available. Using common sense and pooling people's experience, communities usually can give a reasonable indication of what they can handle and for what they require extra training or outside support.

See tool 29 and checklist 12, 14, 16.

Managerial problems and sanctions

What is the issue?

An equally important part of water supply management is the ability to deal with managerial problems and these can vary considerably. Communities will need to detect the management problems and be capable to solve these themselves or know where to go to get help to solve them. Imposing sanctions is probably a least preferred option to solve managerial problems.

Why talk about managerial problems and sanctions?

Managerial problems often underlie technical problems. A breakdown may not be repaired because nobody reports it to the water committee or the water committee does not have money to pay the caretaker. When discussing a technical problem, these managerial problems need to be identified and addressed. If not, the technical problems will pop up again and again. The use of sanctions, being an ultimate way of solving problems, is sensitive and requires special attention.

About managerial problems and sanctions

As indicated before, underlying managerial problems are not always obvious and recognised immediately. You will need to put some effort in bringing them to the fore by probing when talking to people. The more you probe, the better people start understanding the underlying managerial problems. Underlying problems can usually be discovered by posing the question: "Why did X happen?" This can best be illustrated by an example: "Why is this tap still broken?" The most obvious answer to this question often will be that the caretaker does not do his job. The next question then is: "Why does the caretaker not do his job?". The answer could be that he does not get his monthly payment and he is therefore no longer willing to do his job, or that he can not buy the necessary spare-parts. Further probing is likely to lead to more information about the satisfaction of community members about the service level and hence their willingness to pay or about the difficulty to organise the purchase of spare-parts. Once these problems become clear, community members can start looking for solutions and address real management issues and sustainability of the water supply. Tool 19 is helpful in looking for cause-effect relations.

A number of the previous fact sheets deal with preventing underlying problems. A water committee not being fully representative may lead to certain parts of a community being obstructive and not willing to pay. A water committee without a legal status may not be able to solve problems related to accessibility of a water source when this is surrounded by private land. Community members who do not have clarity about how their financial contribution is being used may no longer be willing to pay.

An issue meriting special attention is the issue of sanctions. Imposing sanctions is usually considered to be the least preferred option when a problem needs solving. However, if agreed rules and regulations are not adhered to, sanctions can come in place. It is crucial that there is a broad consensus about the type of non-compliance to rules that need sanctions: when a sanction needs to be imposed and who are entitled

to impose them? There is also a need for consensus about the type of sanction that can be imposed. Should it be in cash, in kind or in labour? What should be the level of sanction in terms of amount and volume? Arrangements need to be put in place for arbitration in case of disagreement. The water committee needs to put the sanction system on paper and to submit it to relevant authorities, such as the village authority or the local government authority, for approval (see fact sheet 14 for more information on legal issues). It has to organise a broad community sensitisation and an information campaign needs to be organised to ensure that all users are aware of the sanction system and know what could happen if they do not stick to the rules. Last but not least the effectiveness of sanctions needs to be monitored and the effectiveness needs to be fed back to a general community meeting. Should certain sanctions not work, the committee needs to reconsider them.

In Pakistan Zatoon is an old term, which refers to the person who collects fines within the community and who is responsible for informing people when there is a need for communal work, by visiting each house in the community. If someone from the community does not participate in communal work, such as digging trenches for system extension or cleaning the water channels, the Numberdar, the village leader, sends the Zatoon to collect a fine.

An alternative or complementary management tool to sanctions is an incentive system, whereby users or committee members can be rewarded for positive contributions to the management of the system, rather than being punished for non-compliance with rules and regulations. The process of developing an incentive system is similar to the process of developing a sanction system. The above assumes that a broad based consensus exist about the rules and regulations. This implies that all relevant stakeholders within and surrounding the community have been involved in setting them.

If there is an inter-community conflict the case may have to be brought to court.

One of the greatest barriers to improving water supply in Hoto (Pakistan) was a heated dispute over water rights with the village of Pakora. The origin of this dispute lies in the history of the water supply scheme, which was implemented by the government. This scheme was built without taking into consideration the traditional water rights guiding the use of spring water between the two communities. The spring is located within the Hoto locality. Some eleven years ago the government built a water supply scheme to contain the spring water and to distribute it throughout the village. The people from Hoto used this water and later people from Pakora began using the water as well by diverting it from the distribution pipeline. In Hoto this resulted in a shortage of water and a conflict with Pakora broke out, whereby Hoto claimed all of the spring water due to traditional water rights. It took the lower court in the regional capital 7 to 8 years to take a decision in favour of Hoto. However, the whole conflict left bitterness and distrust between the two communities.

See tool 19.

Training to prepare committee members for their tasks

What is the issue?

Committee members and caretakers need skills if they are to perform certain tasks. Training helps to develop these skills. It can be on the job, through 'learning by doing'. It can also be made more formal, by taking part in a training event with presentations, demonstration and exchange.

Why talk about training?

Usually programmes organise training events on system maintenance for caretakers and bookkeeping for the water committee. However, if we take a close look at the tasks involved in good management, we will see that training is required on many more issues. Tasks include preparing action plans to solve problems in a sustainable manner, facilitating community consultations and community decision-making, contacting local authorities for support, contracting outside expertise and monitoring the work of outsiders, calculating water tariffs or contributions for operation and maintenance, looking into the most appropriate times for opening the gate valves and dealing with conflicting interests of different user groups. Below you will find how to determine issues for which training is needed, and what you need to take into account when organising training.

About training needs

When determining training needs you have to look with committee members at the tasks at hand and the skills required to carry out those tasks (tool 18 and 24). You also need to take a look at the skills that are already present in the committee or community. Once you know these you can discuss if and how the skills already present can be used for the management of the water supply system. You will probably have come across instances where skills of a blacksmith, for example, are used for handpump maintenance and where skills of a shopkeeper proved helpful for management of the operation and maintenance fund. The committee may decide to hire people from outside for specific tasks for which the skills are not available in the community. For other skills not present in the community, you can organise training.

Training enlarges people's economic opportunities. Training may lead to a paid job and the possibility of giving such an opportunity to well qualified, but poor individuals needs to be discussed. For trained people economic opportunities may rise outside the community. It is not uncommon to see trained community members leave for 'greener pastures'. Trained members may also be pushed out of a job by politics. You should discuss with committees how to avoid or minimise this risk. Possibilities include training more than one person on a specific skill within the community and making verbal/written contracts with trainees that they will apply their new skills within the community for a certain minimum period of time. This may include a repayment clause for the trained person, but also for the committee should it sack somebody 'without good reason'.

In **Guatemala** the following qualities and characteristics of a caretaker were identified:

General aspects:

- s/he lives in the community permanently;
- s/he is a user of the system him/herself;
- s/he has time available to fulfil the tasks;
- s/he is accepted by the community;
- s/he attends the meetings that the committee calls;
- s/he has time available to be trained and to provide training in plumbing;
- s/he respects and complies with the rules related to the water system;
- s/he knows and accepts the tasks that the management body determined.

Knowledge:

- s/he knows how to read and write;
- s/he knows how to interpret the system plan;
- s/he knows the location of the main elements of the system;
- s/he knows how to interpret the specifications of materials;
- s/he knows how to interpret the nomenclature, especially of distances, pipes and flows;
- s/he knows how to manage and implement the operation and maintenance plan;
- s/he knows how to interpret the water flows from source to reservoir tank and from there to the distribution tanks.

Abilities

- s/he can handle the basis maintenance tools and equipment (manometer and chronometer);
- s/he can calculate the required materials and wages;
- s/he can make do basic mathematical calculations;
- s/he can make an estimate of the time required for operation and maintenance tasks;
- s/he can deal with breakdowns that affect the operation of the system.

You can often organise training events for people from different communities. You can bring water committees of three or four communities together for training. Your organisation will probably bring caretakers of 10 similar water supply systems together for a training. This is of course efficient, and also offers the opportunity for the trainees to exchange experiences. It requires special skills for the trainer to help trainees learn from an exchange of experience and to help them see that experiences of others carry lessons for them also. Regular follow-up meetings among a group of trainees offer opportunities for them to continue exchange of experiences and learning new skills.

There are several methodologies for training, but in general training methods that invite trainees to reflect on their own work and capacities are most fruitful. Role-playing, problem-solving activities, the use of audio and visual aids, building on existing knowledge, are helpful to bring this about. It is also essential that the community understand the objectives of training and that training should be complemented by other capacity building measures like: exchange visits (tool 27), on the job learning, advice, feedback, etc. Training which is not accompanied by other measures in building local capacities is not very effective.

When organising a training event, two issues are important to keep in mind:

- You will have to decide if you will facilitate the training yourself and if you need the help of resource persons for specific topics. It is often useful to have training organised by someone other than the facilitator. Organisation and logistics take a lot of time and energy, and if trainees are not satisfied with the arrangements it may be hard for the person responsible to get a positive attitude in a training session.
- When selecting timing, duration and location of a training event there is a need to consult with women, men, rich and poor. It is not obvious that all have the same preferences and possibilities. When crops are being planted women often have a greater time constraint than men and they may not be able to attend a training event. A training location close to their homes is usually more convenient for women with small children. Men and women from poor households will need a few hours per day to earn some cash, so full time training may not be feasible for them. You should take such issues into account before deciding on timing, duration and location.

In Kenya the committee chairmen were trained in communication and information provision, secretaries in record keeping, treasurers in resource management, caretakers in physical improvements and operation and maintenance. Synthesis workshops were done for all community members to explain why and what capacity building was done for key community and committee members

In Nepal it was found that maintenance training should be given in advance, not at the point when maintenance is needed. It was also felt that learning was best done from each other, and that exchange visits were useful. Local research teams learned to use the seasonal calendar to take into account busy periods/bottlenecks when planning experimentation. Training themes also included: group development/formation, leadership skills, communication skills, holding of meetings, operation and maintenance, action planning (what, when, how, who, what support), proposal writing and account keeping.

Caretakers in Belen (Guatemala), were trained in registering users, mapping to identify illegal connections, creating awareness of rules, communication skills and producing promotion leaflets, making suggestions to adjust the system and writing project proposals for outside assistance. Women were elected to the finance committee because they were trusted more and were felt to contribute to more transparency. In Aguacatan co-ordination among sub-committees led to: i) the use of the same water source for cost efficiency, ii) joint solutions, iii) increased capacity of general co-ordinating committee, and iv) two year agreements on soil conservation and re-forestation.

See tool 18, 24, 27.

Evaluation is learning; no solution is forever

What is the issue?

A community or a water committee has objectives, although they may not always be made very explicit or written down. When a water committee decides to implement a certain tariff system, their objective will be to improve the recovery of costs for operation and maintenance. At times it is useful to sit back and assess whether the objective was reached and, if not, the reasons why.

Why talk about evaluation?

Whereas monitoring is meant to keep track of developments to allow for immediate remedial action, evaluation focuses on the impact of activities. Evaluation helps to determine whether problem solving activities proved useful. Much can be learned from looking back at how things were organised and what they brought about. You could stimulate community members at pre-determined times to take a systematic look at what they did, at the intended and the actual outcomes, and at whether the outcomes were as useful as expected. Lessons learned will help direct future activities.

About evaluation

Evaluation basically means that you look back and compare what was intended with what was achieved. There are several ways you can help communities look back at the implementation of the solutions they put in place to solve pressing problems. For example, a 'recovery workshop' brings together field staff and community members to jointly assess whether objectives were achieved, the lessons learned and any positive or negative side-effects. Issues you can raise during such a workshop include:

- How was the action plan implemented (who, what, when, outcome, problems encountered)?
- What were the expected and unexpected results?
- How do community members feel about outcomes? What are their conclusions?
- What are the next steps? Should alternative solutions be tested?

Another way to evaluate is through structured interviews with key-people, including users of the water service (tool 8). This can be combined with information collection through observation (tool 4). Checklists 4, 5, 6, 8 and 9, used to assess a situation at the start of a process, can also be used for evaluation.

It is important to make people realise that an evaluation is not meant to put them down, should nothing positive have happened, but to enable them to learn from the experience. If people feel threatened, they are likely to present the situation as better than is actually the case. You should therefore take enough time to explain the purpose of evaluation.

Last, but not least: evaluation is only meaningful if the outcome is used to learn how to improve the situation. Information should not be kept in your office, but be shared with community members for reflection and to determine future action.

See tool 4, 8 and checklist 4, 5, 6, 8, 9.

There are other development workers in the community

What is the issue?

Many governmental and non-governmental support organisations, work with communities on development programmes. Just like you, their field staff visit the communities at intervals. Opportunities exist to see how these visits can be made more efficient and effective for field staff and for communities by co-ordinating these visits and exchanging experiences.

Why relate to other development workers?

Community visits by field staff like you are useful, because communication with people is crucial for effective programmes. However, community visits also take up the valuable time of community members as well as your own. It is often possible to better co-ordinate development efforts to prevent wasted time, overlapping activities or even activities that are counter productive. You can play an important role regarding co-ordination.

About relating to other development workers

You will no doubt have come across situations whereby you find yourself sitting under the village tree without people turning up or situations whereby you find people engaged in activities quite similar to those you had in mind. For example, community mapping is an activity many support organisations consider useful as a first step in development work. Community members find themselves making various maps, be it with a focus on forests, another on water resources, yet another on land use for agriculture. Efforts could be combined, saving time and resulting in more comprehensive and useful maps.

People might not turn up because the issue to be discussed does not interest them. However, it may also be a sign that they do not have time, even if you only come one afternoon every two weeks. One afternoon every two weeks may not be too much for you, but three field workers like you visiting a community will cost the community three afternoons every two weeks! Community members will then take a look at so-called opportunity costs. They will ask themselves: what is the income missed if I attend this meeting and is it worth it at this very moment? They may well decide 'not to turn up'.

Drinking water supply and sanitation, re-forestation, agriculture, income generation..... these are all development fields that are usually dealt with by different field workers and that at the same time use or try to protect the same natural resource: water. Do you talk to the forestry or the agriculture extension worker to find out what they are doing? Do you think that what they promote is in line with what you promote? Do you feel that community members make the link between what you discuss with them and what the agriculture extension worker discusses with them? When field workers combine their efforts much of their own and community members' time will not be wasted. You can then also look for opportunities to reinforce your work and prevent messages or activities that counter each other.

Two examples:

Both the agriculture extension worker and you will look with community members for water sources that can be used for irrigation and drinking water. Source selection and utilisation may be optimised if you are mutually aware of the selection criteria you apply. If the criteria are the same you will probably select the same source and may start competing for this source, unless you discuss the issue.

The forest extension worker will discuss with community members where trees are to be planted to prevent too much run-off. You could discuss with him/her whether a species can be used that does not abstract too much water from the area surrounding the water source.

Both examples illustrate the need for communication, co-ordination and collaboration. Co-ordination and collaboration implies that all parties may adapt their work schedules to take advantage of joint opportunities. Flexibility is therefore needed. This means that you and the other field workers will need the support from your bosses. You will have to make clear to him/her the advantages of co-ordination and collaboration. You may use examples similar to the ones in this fact sheet, but adapted to the situation as you find them in 'your' communities.

Information obtained using tool 13 can help detect other ongoing development activities and other development workers.

See tool 13.

Tools

In the fact sheets frequent reference is made to tools. In this section of the book you will find these tools. The order in which they are presented makes sense in terms of logical sequencing of activities when working with a community, but should not be considered rigid. Many tools can be used at various stages, and which you select will depend on your previous history with the community. You are of course free to modify them to suit your own working conditions where you think this is appropriate. You may also stipulate that some tools, such as community mapping, can be used by water committees themselves, for example, when they want to monitor access to improved water supply.

You will probably find that some of the tools are not completely new to you. Some are adapted versions of tools used for Participatory Rural Appraisal (PRA), Participatory Action Research (PAR) or the SARAR-methodology (Self-esteem, Associative strengths, Resourcefulness, Action planning, Responsibility). Others have been newly developed and they focus specifically on the improvement of community management of rural water supplies.

Each tool has the following elements:

- Summary – a brief description of the tool and when it can be used;
- Objectives – a description of what the tool aims to bring about;
- Procedures and materials – a sequence of steps to use the tool, including an indication of the materials you need;
- Hints – where appropriate some additional information on how to strengthen the use of the tool;
- Next steps – a listing of subsequent tools or activities.

The first couple of tools are meant to provide the community and you with detailed information about issues such as the community's water supply, or the socio-economic situation of its inhabitants. The purpose of obtaining this information is to identify the social and physical environment within which water supply management takes place. Knowing the existing and planned use of water can for example be used to formulate rules, laws and payment schemes at a later stage. Similarly, information related to most of the issues around water use are crucial for identifying potential conflicts and can be used to develop strategies to prevent them.

Next, you will find tools for identifying the most crucial problems inhibiting proper management and of potential solutions to solve those problems. Following these, you will find action planning tools and tools for monitoring and evaluating the effectiveness of solutions. It is important to properly document information you obtain, since all of it is important for further planning.

It is indicated in which fact sheet reference was made to the tool and which checklist can be helpful when using it.

Tools	Related fact sheets	Related checklists
1. Getting introduced	5	
2. Creating a good atmosphere	5	
3. Understanding each other's hopes and fears	2, 5	
4. Seeing is also learning: observation walk	1, 6, 11, 19	4, 5, 6, 13
5. What do we find in the community? Community mapping	1, 6, 11	
6. Cross-cutting the community: transect walk	1, 6, 11	4, 5, 6, 13
7. Getting in-depth information and lots of good ideas: focus group discussion	1, 6, 11	2
8. Getting to know more: semi-structured interviews	1, 6, 11, 19	
9. Who do we find in the community? Wealth ranking	1, 6, 10, 12	
10. What is within the compound? Household sketches	1, 6	
11. When to do what? Seasonal calendar	1, 6	
12. Activity profile: who does what in the community?	1, 6	
13. Discovering social and institutional structures: Venn diagrams	1, 4, 6, 9, 20	
14. Local knowledge: historical profile, popular sayings and oral histories	1, 4, 6, 10	
15. Who decided? Pocket voting	8	3
16. Understanding the decision-making process and conflict management	3, 8, 14	3
17. Are people satisfied? The ladder	15	
18. Bees and Lions: preparing for the selection of members of the water committee	8, 9, 18	15
19. Building a problem tree: looking for cause-effect relations	1, 6, 8, 17,	
20. Past experiences and future challenges: SWOT analysis	6, 8	

Tools	Related factsheets	Related checklists
21. The village of my dreams	3	
22. Matrix ranking of preferences	1, 10	12
23. The rope exercise: understanding the need to join forces	3	
24. The spiderweb: assessing and monitoring capacities in the community	1, 9, 15, 18	13
25. Action planning	1, 7	15
26. Making a plan for operation and maintenance	1, 15	14
27. Neighbours may have good ideas: organising an exchange visit	18	
28. Dealing with sensitive issues: popular theatre	12, 13	
29. Formulating support requirements and dealing with outsiders	16	16

Getting introduced

Summary

An important element of the participatory approach is building up a good relationship. If people are expected to be open to you or other support staff and to each other, time has to be invested in strengthening relationships and building mutual trust. How relationships are strengthened and trust is built is very culture specific. However, you always need to be properly introduced into a community, to discuss the purpose of your visits and also to collaborate with the local authorities. This tool describes what to do after an initial, informative visit and helps to deal with the issues of fact sheet 5.

Objective

To raise enthusiasm, ensure collaboration and obtain useful information related to water supply management from both the community members and the local authorities.

Procedure and materials needed

- Contact local authorities and community based organisations and ask to be introduced to the village leader or other local authorities.
- When meeting local authorities and community based organisations refer to previous contacts and explain the purpose of the visit and future activities.
- Ask whether the community is still interested in jointly working on improving management of its water supply and whether the previous contact has given rise to new ideas and/or questions.
- If interest is still there, ask the local authorities what would be the most appropriate way to proceed. The formation of a local team or committee consisting of community members can also be discussed.
- Propose a joint stroll around the village and ask to be introduced to some community members.
- After the stroll, agree upon a timeline, a broad outline of activities and upon how to keep the local authorities involved.

Hints

Asking the village leader to show you around is usually a good starter for a more informal discussion, whereby a first impression can be obtained about the community situation. It also shows other community members that the visitors are welcome. Make sure that you are clear about the scope of collaboration between the support organisation and the community right from the beginning. This will prevent disappointments at a later stage.

Next steps

During the first round of discussions an inventory of points can be made for the observation walk (tool 4), for focus group discussions (tool 7) and for semi-structured interviews (tool 8).

See fact sheet 5.

Creating a good atmosphere

Summary

A high level of openness and trust among community members and between community members and project staff is required to promote the good development of future activities. As a result of previous development activities in a particular community openness and trust may be present and need reinforcing, or they may be totally absent, because people have become frustrated. In the latter case you will have to put efforts into creating an atmosphere whereby people feel they can share ideas and positive and negative experiences. Such an atmosphere does not develop overnight, but creating some fun by the use of ice-breakers helps in getting started. In general ice breakers are not just meant to have fun. They often carry a message or help people to get to know each other better. These tools help to deal with the issues of fact sheet 5. Below you find three examples.

Objective

To create an atmosphere in which people feel free to share nice things and things they feel a bit embarrassed about or which they do not like.

A Spider Web to break the ice

Procedure and materials needed

- Get people together and have them stand in a circle and explain that you will do a small exercise.
- Give one of the group members a knot of wool and ask him/her to throw it to someone else in the group while holding the loose end of the string, stating his/her name and a few details, such as main occupation and family circumstances.
- Ask the group members to do the same as soon as they get the ball.
- A spider web will develop and once it is completed you can say a few words about the rope connecting all together and that a similar connection is sought to be brought about in the period of collaboration.
- Once everybody has had his/her turn, have the ball of wool thrown back again, undoing the spider web.
- Now the person throwing mentions the name of the person s/he throws the ball to and the personal details.

Hints

- Make sure that participants are attentive right from the beginning of the presentations, since they won't know beforehand from whom they will receive the knot. Should you work with a group of people who already know each other, you may ask the members to add something funny while introducing someone.
- If the group consist of people who do not know each other (for example during an exchange visit or an inter-communal training) the exercise can help participants to remember each other's names. While developing the spiderweb they can ask for the name of the person whom they throw the ball to. While undoing the web the person throwing will have to recall the name of the person s/he throws the ball to.

- It may not be culturally appropriate to do this in a group having men and women or adults and children. You will have to make an assessment of the situation before starting.

A Fruit Salad to get to know each other

Procedure and materials needed

- Have all participants stand in a circle, place yourself in its centre and explain the game as follows: "the person standing at your right hand side is called 'your' pineapple. The person standing at your left hand side is called 'your' banana. Make sure you know the real names of these two neighbours. If I point at you and say 'pineapple!', you have to respond immediately by saying 'your' pineapple's real name. The same for 'banana!'. If I say 'fruit salad!' you will all have to change places and we will start the game again, until you all know most of each other's names. If the person I point to takes too much time to respond or makes a mistake, s/he takes over my role as a facilitator".
- Play the game going through a number of rounds, whereby each round should take at least 3 to 4 times asking for a name before going to 'fruit salad'.

Hints

This game should be played rather quickly to retain attention. It is a useful game to become familiar with each other's names.

The Postman breaks the ice

Procedure and materials needed

- Make a circle of as many chairs as there are participants.
- Have all participants take a seat and ask one of them to stand up.
- Take his/her seat and put it outside of the circle. This person starts the game by being the postman.
- Explain the proceedings of the game by saying the following to him or her: "You are the postman and you have letters to deliver to for example 'everybody with a moustache' or to 'everybody who is a farmer'. You indicate this by saying out loud for whom you have letters to deliver. All these persons will have to change chairs and you should try to capture one of the empty chairs. The person who can not find an empty chair will then become the postman".
- Have the game played for some time.

Hints

This game is best played with a group of people that are not all familiar to each other, for example during an exchange visit or a training course.

Next steps

Which tool to use next depends very much on the purpose and timing of the ice-breaker.

See fact sheet 5

Understanding each other's hopes and fears

Summary

When working with communities there is a need for mutual understanding of hopes and fears or expectations. If the collaboration is not properly explained and understood and the roles and responsibilities are not agreed upon, unrealistic expectations and frustration may easily arise. Once the scope of collaboration and the roles and responsibilities are clear, you may decide to formalise them, putting it on paper. Discussing hopes and fears is a first step towards clarifying the scope of collaboration. This tool can be used once a certain level of feeling at ease is achieved and helps to deal with issues of fact sheet 2 and 5.

Objective

- To be able to develop collaboration with the communities in such a way that it fulfils a maximum amount of expectations and dispels fears.
- To prevent waste of time and energy as a result of unrealistic expectations.

Procedure and materials needed

- Recall what has been said about your organisation vis-à-vis the community during earlier meetings.
- Ask everyone to take a few minutes to jot down hopes and fears they have with regard to this relationship.
- Hand out six cards per person in two colours (each colour three cards) and markers and ask people to write their three major hopes on one colour and their three major fears on the other.
- Make sure people write only one hope or fear per card and that they write legibly, using key-words only.
- You will also have to write cards yourself.
- Gather the cards and stick them all neatly and separated by colour on flipcharts or wallpaper, using removable tape.
- Go through all the cards jointly, while clustering the cards addressing the similar points.
- In case the text on a card is not clear, discuss with the group what the meaning could be and agree on a reformulation.
- Summarise by going through the clusters or ask one of the community members to do so.
- Ask for reactions to the outcome before reacting to it yourself.
- Reinforce hopes that are conducive to the project, remove fears that can realistically be taken away and invite people to think of ways to deal with those fears that cannot be dealt with immediately.
- Draft a text to formalise the collaboration between your organisation and the community.

Hints

- It is very important to have an open mind when listening to people's hopes and fears and to avoid becoming defensive, in particular when hopes and fears concern you or your organisation.
- If you have an unclear card, don't force the author to identify him/herself as this may embarrass the individual and destroy confidentiality.
- Should the group include people who cannot write, the exercise may be adapted by asking people to list hopes and fears in small groups, which have at least one literate person. From their list these groups can select the 4 or 5 most important hopes and fears and have the scribe write them on cards. The remainder of the procedure is as described above.

Next steps

This tool can be used at the beginning of a larger event, such as a workshop or a training. It will allow you to get insight in each other's expectations. You can then adapt events where possible to suit the needs and wishes of those concerned.

See fact sheet 2 and 5.

Seeing is also learning: observation walk

Summary

One way to get to know a community is to take a walk, preferably with community members, to be curious and to pose questions about what you see. Showing an honest interest in people's living environment also helps to build rapport. Probing questions could concentrate on what, when, who, where, why and how relates to what is being observed. Observation walks can have a very open character, but may also be guided by a number of key-indicators laid down in a checklist (see the third section of the book). You may list these observation points and the outcomes of any discussions held previous to the walk. The list can be drawn up with the members of the local team or the committee.

An observation walk, if carried out by a (small) group of people, raises the curiosity of other members of the community. They will ask passers-by to find out what is going on. It also brings them face to face with the realities of the community water system and stimulates them to empathise with the problems of those living in other sections of the village. Another strong point is that through an observation walk problems are situated in a context.

This tool helps to deal with issues of fact sheet 1, 6, 11 and 19. Checklist 4, 5, 6 and 13 help to use the tool.

Objective

- To get a better understanding about the living environment of people, their water and sanitation practices, the problems occurring and the available resources.
- To create a starting point for a discussion to help people realise the resources they have available.
- To build rapport.

Procedure and materials needed

- Tell people you would like to get to know their village a bit better by taking a walk. Ask who would like to accompany you and tell them that you would be happy if they would also indicate what is interesting to take a look at.
- Be curious and ask additional information about anything you observe using what, when, why, where, who and how-questions. However, refrain from giving judgements about what you see.
- Allow time for small interviews along the road and for people not in the observation group to ask questions about the observation walk and to voice their opinion.
- After the walk, take time to reflect on what was observed and what people consider good and/or bad.
- Document the information and discuss its further use.

Hints

- You have to ensure that you visit all sections of a community and that the various community groups (men, women, children, rich and poor) are represented in the group going for the walk. Where going with a mixed group is culturally not appropriate, or where a dominant group claims all your attention, you can organise separate walks.
- Make sure you do not raise false expectations. People will probably show you anything they find interesting and needs improvement. Take note, but don't raise expectations in terms of promises you or your organisation cannot realise. You can of course say that you are willing to take a closer look at certain problems with them and help them find a solution.
- Be sensitive to what people may not want to show. However, do not 'force' them in a direction they do not want to go. Wait till more trust and rapport have been established.
- Do not only use your eyes for observation, but also your ears, nose and taste.
- Knowing that they or their living area is going to be observed, people may start behaving differently from normal. Be aware of this. Common sense, experience and cross-checking will help to find out whether what you see is daily life or a polished reality.

Next steps

You can organise additional walks for more in-depth information gathering, whereby you may invite key-persons.

Making a transect walk (tool 6), focus group discussions (tool 7) and semi-structured interviews (tool 8) are ways to obtain more specific information.

In Nyen and Mbemi (**Cameroon**) village water committee members as well as officials from in and outside the villages took part in the village walk. This proved to be an excellent way to get better acquainted with community members, and with problems and possibilities in different areas of two neighbouring villages. During the three-hour village walk in Nyen the group was directed through all the quarters of the village. While walking the members of the group discussed among themselves and occasionally stopped at a household to talk with the people of the compound. The walk gave a good overview of the water situation and also the uses of the palm and raffia trees, which are the main sources of income for the villagers. The processing of the palm and raffia demands a sizeable amount of the community's water.

In Nkoundja (**Cameroon**) the village walk was effective in making community members aware of the extent of neglect and abuse of their water resources. Lots of leaking valves and dysfunctional sections of the system were observed during the walk in two days. They even encountered chemical cans around the catchment area. After initial hesitation during the participatory mapping, members were able to process and present their findings in a pictorial form. This generated a lot of interest and many community members asked for more paper to copy their personal map of the village to keep in their homes. It exposed them to details and problems of members in their quarters.

See fact sheet 1, 6, 11, 19 and checklist 4, 5, 6, 13

What do we find in the community?

Community mapping

Summary

Mapping is a very powerful and effective tool to help people explain their community situation, identify problems and available resources. Having a group of people working on a map together stimulates discussion. Having men and women/ better of and poor make maps in separate groups will bring to the fore what these various groups consider to be important and reflects their frame of reference. A shared analysis of the maps with those who produced them creates consensus and provides an excellent opportunity for further discussion. If you are curious and ask questions, a map can be explored to its fullest extent. If various maps have been made by different groups of people, you will have to ensure a proper exchange about the results and possible discrepancies are incorporated in the discussion.

This tool helps to deal with issues of fact sheet 1, 6 and 11.

Objective

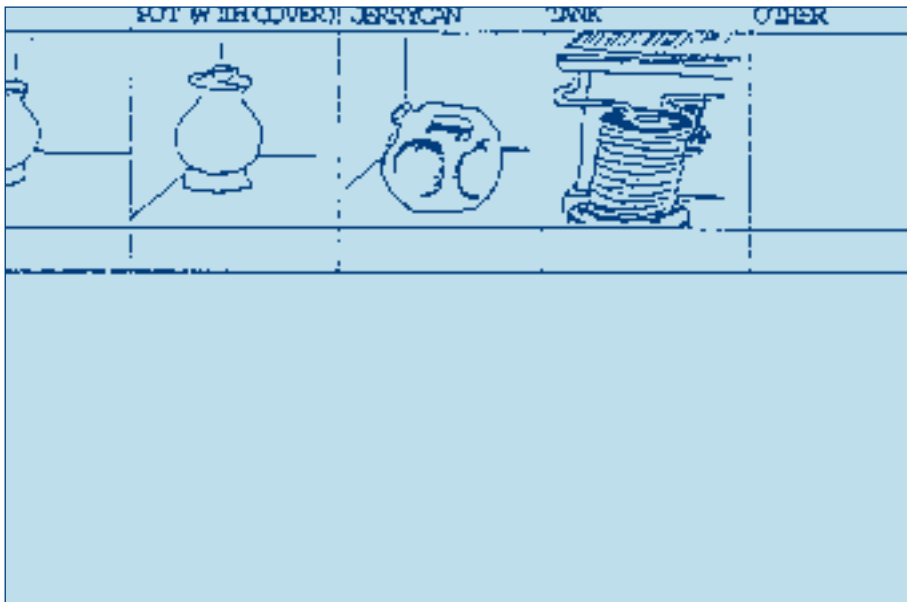
- To gather information about a community.
- To help community members realise the resources they have available.
- To help community members realise that different groups in their community may have different perceptions.

Procedure and materials needed

- Tell people that you would like to get more insight in their community and that you would like to obtain this by asking them to draw a map of their village, indicating houses, roads, farm land, water sources, forest and the like.
- Explain that you would like everyone to have an input in drawing the map. Maps may also be made in homogeneous sub-groups. Results are likely to differ and this offers a useful starting point for discussion.
- Explain the use of materials, either local or brought along from the office. Although maps can be made using flipcharts and markers, a more exciting way is asking community members to use all kinds of material they can find in and around the house, like corn or corn flower, apricot nuts, leaves and branches. The use of local materials also increases the chance that community members will use this tool again among themselves.
- Give people ample time and opportunity to draw the map they want and take care not to guide them.
- Discuss the results by asking the group(s) to explain what they have drawn. Where there are several drawings, highlight similarities and differences. Ask why they think differences occur.
- Wind up by asking how the information from the map can be used in the near future.
- If the map was made on the ground, using local materials, transcribe it on a piece of paper for future reference.
- Leave the map in the community and make a copy for use in the office.

Hints

- A mapping exercise can also be given a narrower focus than the general mapping exercise, for example by specifically mapping the water supply system or a water point. The information can then be used to fill out a data sheet. In this case the mapping may be carried out by those knowledgeable about the water supply system or using that specific water point. Mapping usually provides more unambiguous information than a discussion. By having community members identify routes of the pipelines and location of taps, it can be used to identify bottlenecks and as a planning tool to improve the water supply scheme or to plan a new one.
- In larger communities it may be useful to have maps made at the neighbourhood level.
- One of the requirements of drawing a map is to create informality within the group and to give minimum instruction to the participants. This helps the participants to use their own ideas of how to draw a map to present information. Allowing them to locate their own house on the map usually increases people's interest in making the map a good one. Household sketches can also be made (tool 10).
- A strong point of the tool is that it helps to build self-esteem and confidence and thus the interest and participation of members.
- Mapping should be carried out early in the process, and the map should then be used as a tool for future exercises. It serves as a common reference point – as things develop they can be added, and extra information about items on the map can be identified as the process moves ahead.



Several communities make use of the same system

In **Pakistan** the water supply was mapped in 4 selected villages to get factual information about the number of mohallahs (wards or clusters), communal buildings, length of pipe installed, number of taps, households, water reservoirs and water source. This helped to stimulate discussions among the participants on interesting issues related to the water supply scheme and also increased the confidence of the villagers in drawing maps. Maps were drawn by groups of community leaders and key-informants. They drew maps on the ground using sand, stones, pieces of paper and wooden sticks. In some cases villagers used larger sheets of paper and colour markers. The exercise of drawing a map and discussing interesting issues took about one and a half to two and a half-hours. Using local materials for mapping encourages illiterate people to take an active part.

In **Cameroon** mapping was found to be very helpful for the project team as well as for the communities. The community members felt proud and satisfied that they could succeed in drawing a map of their village and it captivated their interest. They appreciated this chance, the support and time the team gave them to experience the challenge. This also helped the group to get a better understanding of the entire water supply system even though they were not involved in its construction. Going along the pipeline the group noted all points where pipelines were exposed and where pipes were missing or damaged.

Next steps

A community map can provide a starting point for a transect walk (tool 6) or for further discussion about problems and resources in the community (tool 19 and 20). It may also be a starting point for more discussion about how various areas in the community benefit from the water supply.



A map made in Barrel Chiquito

See fact sheet 1, 6, 11.

Cross-cutting the community: transect walk

Summary

A transect walk is a walk cross-cutting the community to capture the greatest diversity of land-use and eco-systems. Doing a transect is a way to ensure that spatial differences in the community are explored to the full and is often used in projects related to forestry and agriculture. In a project dealing with water supply management it can help identify technically difficult areas and differences in the service level among community areas along the transect route. It may also provide information about levels of sanitation in the various parts of the community covered by the transect. The need for a transect walk can be identified while carrying out a mapping exercise, and can even take place at the same time – a group can be left to get on with the map, whilst another does the walk.

This tool helps to deal with issues of fact sheet 1, 6 and 11. Checklist 4, 5, 6 and 13 help to use the tool.

Objective

- To gather information about geographical conditions and levels of water supply service and sanitation.
- To refine the understanding of the areas and the interactions between the physical environment and human activities.
- To bring community members together in an assessment of problems and available resources in the community.
- To get the views of the different socio-economic groups within the community regarding issues such as the use and access to services, adequacy and regularity of system functioning, adequacy of operation and maintenance..

Procedure and materials needed

- Get together with the people involved in the walk, most probably the local team members and some general community members.
- Explain the purpose of the exercise, also in relation to previous exercises like community and system mapping.
- List categories of information that are considered useful if more is to be known about problems and possibilities related to water resources in the community.
- Review the community map and identify the area for the transect. Develop the route the group will take, which should be where the largest variety in terms of landmarks, types of land use, water resources and water use can be seen.
- Select a logical starting point for the transect, which might be the highest point in the study area or the community boundary, and divide tasks related to note taking and drawing.
- Start walking, observe and take time for informal, open-ended interviews with people living in the area. Focus on critical issues like water availability and

environmental sanitation. Allow people to add whatever they feel is important to mention at that very moment.

- At the end of the exercise, compile the field notes and use them to construct a transect chart.

Hints

- A transect should go beyond the boundaries of a community if the water sources and other users of these water sources are outside the community.
- Information obtained through the informal interviews should also be used during a later stage to help identify problems and opportunities.
- Make sure data are obtained from men and women and from various socio-economic groups.

Next steps

Information obtained through a transect can serve as a basis for more in-depth discussions (tool 7 and 8) and for problem analysis (tool 19).

See fact sheet 1, 6, 11 and checklist 4, 5, 6, 13

Getting in-depth information and lots of good ideas: focus group discussion

Summary

General meetings can be useful for sharing information and arriving at consensus for issues pertaining to the entire community. However, often information shared during general community meetings is not sufficient for decision-making and more detailed information may be needed. Also, some groups within the community, such as women or the poorest, might not have the opportunity to participate in larger community meetings. Getting together a group of 6-12 people knowledgeable about the topic at stake or having a particular interest in it is useful in those cases. In depth knowledge can be shared and critical questions asked.

Objective

- To allow (socio-economic) groups within the community to express their views in more detail.
- To create conditions for in-depth sharing of knowledge and insights for better decision-making.

Procedure and materials needed

- Decide on the topic for discussion on the basis of previous activities.
- Identify, in a consultative process with ordinary community members, people who are knowledgeable about the topic, or who could have a specific interest in it.
- Decide with this group on a time and a place for the meeting.
- Draw up a checklist for the discussion, again based on previous activities and the questions that arose.
- Once you meet, make sure you adhere to general discussion techniques, like giving all a chance to speak, summarise what people say, refrain from judging answers etc. (see checklist 2 for more on leading a focus group discussion).

Hints

- A typical Focus Group Discussion lasts 1-2 hours and is guided by a moderator.
- You will have to make sure that those invited for the Focus Group Discussion feel at ease with each other and that they have a similar level of readiness or capacity to talk. Should this not be the case you may opt for having separate discussions with the quieter people, because being silent does not necessarily mean that you do not have anything to say.
- Some triangulation or cross-checking of information may be needed. This can be done by comparing what different focus groups, for example a group of women and a group of men, have said about the topic or by observation. A second or third meeting with the same group of people can be useful to get a deeper understanding.



A focus group is of a limited size

Next steps

A focus group discussion can be used at any point in time, since it is basically meant to allow specific groups to share their information and opinions. Therefore it can also be followed by any other activity.

See fact sheet 1, 6, 11 and checklist 2

Getting to know more: semi-structured interviews

Summary

Like the previous tool, you can use this one at various occasions. On the one hand certain members of a community may be particularly knowledgeable about a certain topic of interest. On the other hand people who have a high status, but who may have little to contribute in terms of project ideas, will have to be talked to separately. They may otherwise feel left out and start obstructing the community process.

It is best to semi-structure an interview, meaning that you keep a few key-questions in mind, leaving you enough flexibility to go further into side-tracks, while at the same time preventing the interview to float in every possible direction. A semi-structured interview has advantages over a completely structured interview, since a completely structured interview only addresses issues from the perspective of the interviewer and does not necessarily bring out aspects that are important for the key-person.

This tool helps to deal with issues of fact sheet 1, 6, 11 and 19.

Objective

- To make best use of available knowledge in a community.
- To prevent that certain people feel left out and start obstructing.

Procedure and materials needed

- Determine the issues about which more information is to be collected.
- Develop a checklist carrying a few major questions only. Two basic types of questions can be distinguished: descriptive questions (formulated with what, when, where, by whom) and analytical questions (formulated with why and how).
- Get together with the interviewee(s) and look for a quiet place.
- Interviewees may also be knowledgeable people from outside the community.
- Explain why s/he or they were asked for an interview. Make clear that answers may go beyond the questions asked and that many questions will be formulated in the course of the interview, depending on what pops up.
- Carry out the interview and make brief notes for future reference.
- Wrap up the interview by thanking the interviewees and by asking whether you may approach again when the need arises.

These descriptive and analytical questions were adapted from an interview with the president of the village development committee (VDC) at Nkouondja (Cameroon).

"Can you tell me how the water management committee in Nkouondja came into being?"

"I see you have only men on the committee. Is there a reason for not having women on the committee?"

"What would be the difference if women would become member of the committee?"

"Would it be useful to include women in the committee?"

"What would be the best way to include them?"

Hints

- Always ask interviewees about their own behaviour and knowledge, not about behaviour and knowledge of others.
- Do not hesitate to skip questions that seem to be irrelevant at the moment of the interview.
- Interviews should usually not last more than 20 minutes, since experience has shown that interviewees tend to lose interest if they last too long. Should more questions have to be asked it may be better to come back a second time.
- Sometimes individual interviews are more useful than interviews in small groups. There is more freedom of discussion and this may help reveal conflicts within a community.
- Questions for the interview may come from various sources: the responses of the interviewee(s), from observation, from the background and experience of the interviewer.
- Avoid asking leading questions, since they push the interviewee in a certain direction. Open questions are more useful and may provide extra information.
- Sometimes people tend to give socially desirable answers and triangulation, for example through observation, will be needed.

Next steps

You can use semi-structured interviews at any point in time, since they are basically meant to allow specific groups to share their information and opinions. Therefore they can be followed by any other activity.

See fact sheet 1, 6, 11, 19

Who do we find in the community?

Wealth ranking

Summary

Wealth ranking is used as a tool to get a view on the differences in standards of living as perceived by the community members or the local team members. This information is important when the committee has to make decisions about issues that involve a (financial) input from the various households, about tariff setting and about timing of financial contributions.

Each society or even the various groups within this society have different criteria to define wealth. When done with the water committee, you can ask them to draw up a list of criteria as part of the exercise, on which they achieve consensus.

This tool helps to deal with issues of fact sheet 1, 6, 10 and 12.

Objective

To gather information about the wealth of the various households in a community.

Procedure and materials needed

- Have a list of all households in the community and have those households numbered in sequence.
- Have the households and their numbers put on cards.
- Ask a small group of community members to participate in the exercise. The group needs to have people living in the different areas of the community.
- Have this groups make drawings of a well-off person, a poor person and of someone in between on A-4 size paper and ask them to describe the characteristics of each of the categories. Have the group first give a description of the well-off person, then of the poor and then of the in-between.
- Continue till some 6 or 7 characteristics have been listed for each category. Probing will help to understand the rationale behind the characteristics mentioned.
- Ask the group to place the cards with the household names and numbers under the three categories.
- Record the characteristics as well as the results on a large sheet of paper for future reference.
- Explain how the results of the exercise can help in future, for example when discussing the ability to pay for maintenance.

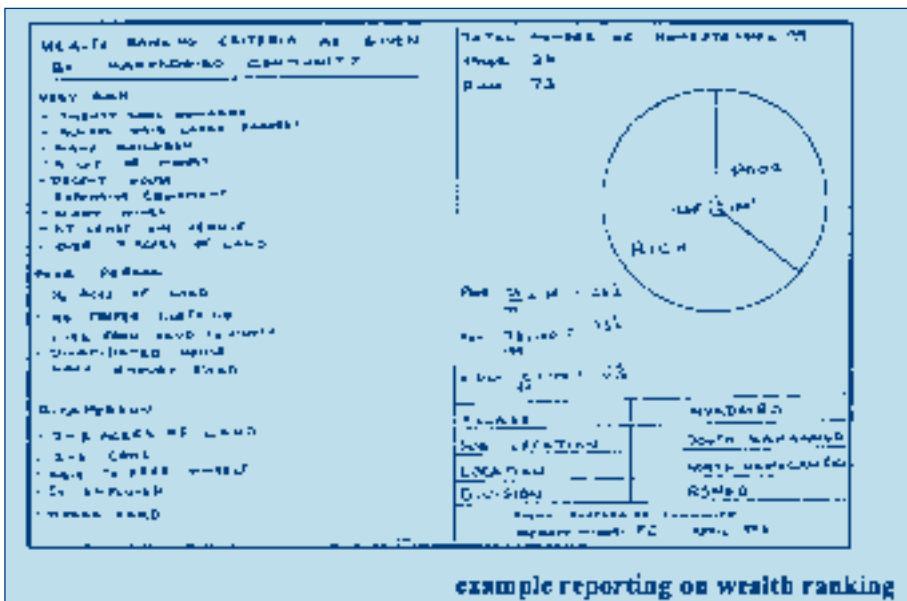
In **Colombia** people in a community living near the Pacific coast defined rich people as those able to have three meals a day and poor people those only having one meal a day.

Hints

- If it appears to be too sensitive to mention the names of the household that are rich or poor, the first two steps may be skipped. Preparatory to the exercise the local team should then collect a pile of 100 small stones, seeds or berries. The group can then be asked to divide the number of stones, seeds or berries under the three categories, thus expressing their estimate of the percentage of households being rich, poor or in-between.
- It may be more appropriate to use a term such as 'better-off' instead of rich in communities where nobody is exactly rich but some people have some spare cash, and others have none. Be aware of the danger of stigmatising families either as 'poor' or 'rich' and try to find a neutral way of expressing this.
- Before using this tool the facilitator has to find out whether community members are likely to know each other well enough to do the ranking. In areas with a rapid turnover of people this may not be the case.
- The tool becomes difficult, if not impossible to manage, when more than 100 households are involved.

Next steps

A wealth ranking exercise can be useful when community contributions or tariff setting are to be sorted out.



A report on wealth ranking shows the ranking criteria used

See fact sheet 1, 6, 10, 12

What is within the compound?

Household sketches

Summary

Many decisions related to the use of water (re)sources are made at the household level. Thus, what families decide about management of water resources affects the decisions and options of the entire community, for example decisions related to the number of hours water is to be made available. Household sketches offer the opportunity to sit quietly with members of a certain household to discuss water management issues and related decisions. Combining semi-structured interviewing (see tool 8) with household sketches helps to triangulate information obtained through tools such as community mapping and wealth ranking. At the same time more detailed information can be obtained about choices people make with relation to water management, about problems that may occur and how people cope with these problems. The differences among households can be striking.

This tool helps to deal with issues of fact sheet 1 and 6.

Objective

- To get an overview of water management issues and related decision-making at the household level.
- To identify problems related to these water issues.
- To avoid conflicts at a later stage when decisions have to be made concerning, for instance, the location of taps or payments for water.

Procedure and materials needed

- Identify a sample of households, ensuring that the different groups within the community are represented.
- Ask the people around who is most knowledgeable about the use of water within the household.
- Sit together with (probably) her and prepare a sketch of the compound following her instructions. She may also make the sketch herself.
- Provoke her instructions by asking questions about issues such as water storage and water use.
- Use the sketch to subsequently discuss the information it provides and for identification of problems and/or opportunities.

Possible elements to include in a household sketch

- Number of household members and their sex/age
- Household layout
- Number and position of buildings
- Number and position of latrines, water points and granary
- Crops, cattle and land use

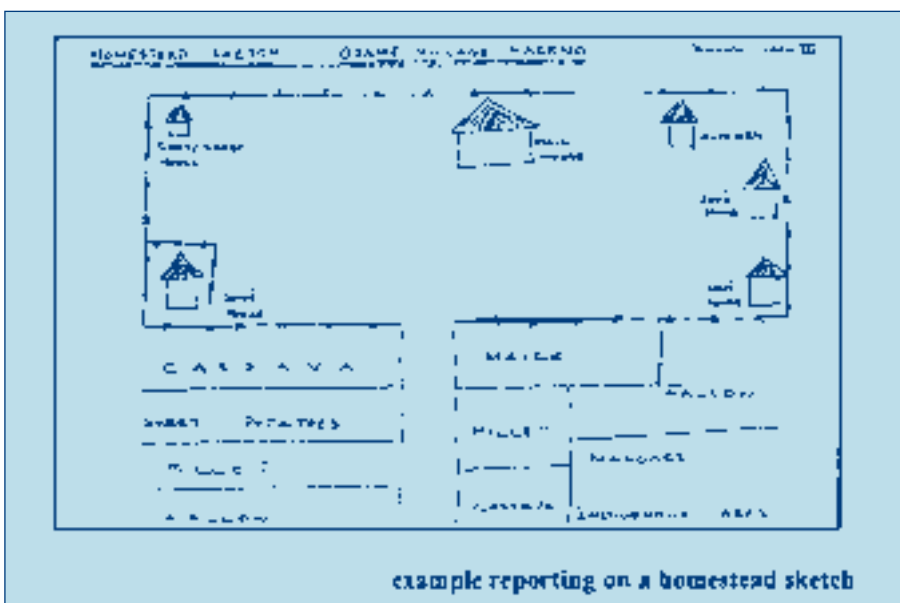
The household sketch may for example show a tap in the courtyard. You may discuss with the family members whether this tap is functioning well or whether its use causes stagnant water. Should the tap not function well further investigation is needed. In the case of stagnant water family members may want to look into how to prevent this.

Hints

- You can draw your sample of households from the wealth ranking exercise by taking a few households from each of the categories.
- Stimulate other members of the household to be around when the sketch is made. This may lead to lively discussions. However, make sure that the person asked to make the sketch remains in charge of the drawing and that she does not include something to which she does not agree.

Next steps

The information obtained through household sketches will feed into the process of problem identification and identification of resources.



A household sketch may also show the crops grown around the house

See fact sheet 1 and 6

When to do what? Seasonal calendar

Summary

Seasonal calendars can be developed for any issue on which seasonal variations might have an impact, such as people's time spent on agricultural activities, accessibility of a community, the discharge of a water source and prevalence of diarrhoeal diseases. This type of information helps to make realistic plans. It is no use planning a series of meetings during harvest season or planning construction activities for system extension during the rainy season.

Seasonal calendars are created on the basis of interviews and group discussions. Visualisation, by using sticks of various lengths or seeds, helps to get a clear picture. Using the tool with men and women separately also helps to identify gender differences.

This tool helps to deal with issues of fact sheet 1 and 6.

Objective

To gain insight in people's time spending and in seasonal variation in weather conditions for realistic planning of activities.

Procedure and materials needed

- Explain the purpose of the exercise and ask the community members about the time cycle they would like to use. This could be from the time crops are planted till the season where soils are prepared for the next planting season, or the government fiscal year.
Draw the time cycle on the ground or on a piece of paper and ask people to indicate their way of sub-dividing it in shorter periods.
- After having visualised the cycle ask people to indicate for example how much work is being done during each time period by placing the sticks of various lengths or by the number of seeds allocated to the periods. The facilitator may help by asking questions such as: "In what period do you do most work?" "What is the next most labour-intensive period?" "What work do you do during these periods?" The indications should be as specific as possible.
- Compare what is being indicated now to what has been said/observed during earlier visits.
- Discuss any discrepancies and allow people to make changes if reality seems to be different from what is on the ground or on paper.
- Discuss the outcome and use it when planning activities at a later stage in the process.
- If the calendar has been made on the ground, transcribe it to paper for future reference.

Hints

- When using this tool with groups of men, women, well to do families or poor people separately, make sure time is allocated for a discussion about the differences.
- Asking the right questions at the right moments will help you obtain additional information about issues such as productive activities and festivals.
- The information obtained through this tool can be expanded by asking people to also indicate other events having an impact on time-availability like festivities and seasonal migration.
- A similar exercise can also be done when information is needed about people's financial capacity throughout the year, by asking people to visualise when they make large expenditures and at which points in time income is earned. When planning experiments that require financial inputs this information has to be taken into account. Before starting, you will have to clarify whether the exercise concerns the total household income, or the income of the men or the women. You also have to take into account that women and men may not know each other's earnings.
- Water availability and annual rainfall are among the other issues for which a seasonal calendar can be made.

Next steps

Drawing up a seasonal calendar is done before any planning activity, since it provides insight in people's time availability and potential construction times.

See fact sheet 1 and 6.

Activity profile: who does what in the community?

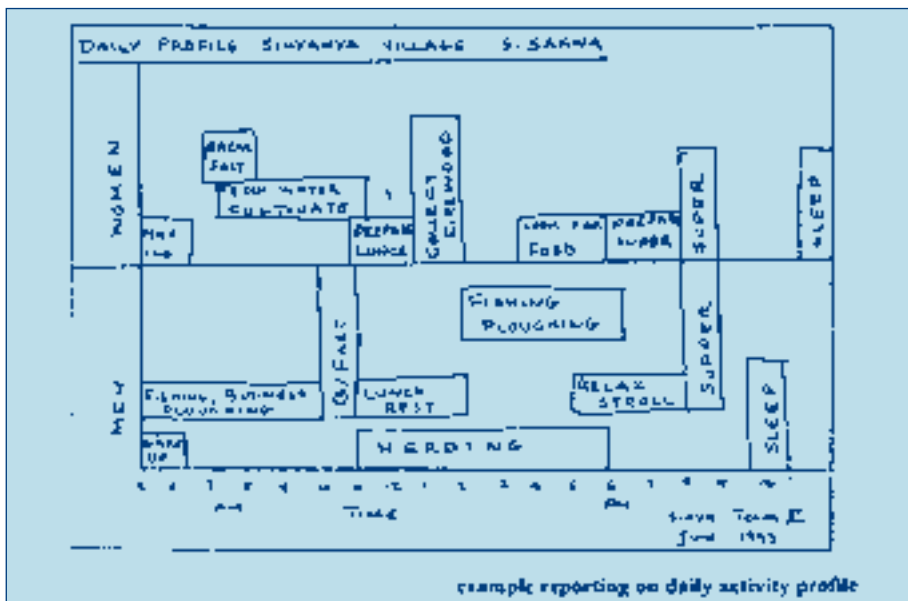
Summary

Information about certain activities, such as water management at the household level, is best collected from those who are most involved in these activities. Making an activity profile with people from various groups in a community will provide this insight. These profiles can be made with people individually, but it may be more interesting to do it within small groups. You have to make sure that the differences in time spent on each activity, as indicated by the people participating in the exercise, are discussed. These differences should also appear in a visual overview to be made as part of the exercise. Information obtained through activity profiles also helps to make plans more realistic.

This tool helps to deal with issues of fact sheet 1 and 6.

Objective

- To gather information that helps to ensure that the right people are approached when starting to identify problems and potential solutions.
- To ensure that planning can be done in such a way that key-persons can participate.
- To help select the best persons for the tasks at hand.



Showing how men and women spend their time

Procedure and materials needed

- Explain the purpose of the exercise.
- Put up a large piece of wall paper.
- Form small, homogeneous groups (men, women, boys, girls) and ask those groups to list down all kind of activities they do on an average day.
- Ask them to write or depict these activities on separate cards and to paste them on a piece of wallpaper or newsprint in the most logic order.
- Indicate behind each of the activities how often they are performed during the day.
- Ask the groups to present the result of their work to the other groups and allow discussion about it.
- While discussing the results, ask whether there are major seasonal variations in activity patterns and note these down.
- Ask which are the possible implications of these activity patterns in view of further community support.

Hints

Given the usual labour division between men and women, activity profiles should be made with both sexes separately. Boys and girls also have different roles in society. They may have tasks in agricultural production and household chores, including water supply provision for the household and possibly in water supply management. Making activity profiles with them recognises their roles.

It may be useful to do a similar exercise with people who have a special role in the community with relation to the water supply system, such as the caretaker.

Possible activities

Home maintenance	fetching water, cooking, fetching firewood, building latrine, well construction, looking after children, sewing, sweeping....
Economic activities	land preparation, planting/weeding, harvesting, livestock rearing, hoeing a garden, waving weaving, selling products at the market place....
Social activities	Community meetings, social events, church attendance, visiting neighbours, leading meetings....
Others	resting, riding bicycle, visiting health centre....

Next steps

The information obtained through this exercise will feed into decision-making, planning and selection of committee members.

See fact sheet 1 and 6

Discovering social and institutional structures: Venn diagrams

Summary

People often do not realise how many formal and informal institutions exist in and around their community. At times we find that institutions within and outside the community have similar responsibilities and carry out similar activities. This can cause a waste of resources. We may also find ignorance about the existence of some institutions, which causes under-utilisation of these resources. Making a visual representation of institutions, their importance and their inter-relation can be used to discuss the roles and responsibilities of the various institutions. Venn diagrams use touching or overlapping circles of various sizes to indicate the degree of contact or overlap in terms of decision-making. Each circle represents an individual or institution and the size of the circle indicates importance. Overlap occurs if one institution or individual asks or tells another to do something or if they have to co-operate in some way.

This tool helps to deal with issues of fact sheet 1, 4, 6, 9 and 20.

Objective

- To help community members get a view on the institutions within and around their community, their relationships and their decision-making and operational responsibilities.
- To make people realise the resources they can access to improve their situation.

Procedure and materials needed

- Ask the group to mention any formal and informal groups/institutions in and around their community.
- Ask people to identify what these groups/institutions do and the degree of contact overlap between them in terms of decision-making and operational responsibilities.
- Make paper circles of different sizes and label them with the name of the persons or institution identified. People's information about the importance of the groups/institutions should indicate the size the circles should get.
- Ask people to arrange the circles in such a way that the degree of contact overlap in terms of decision-making and/or operation becomes clear. Overlap occurs if one institution asks or tells another to do something or if they have to co-operate in some way because their responsibilities are (partly) the same.
- The arrangements of the circles is as follows: separate circles means no contact, touching circles means that information passes between the institutions, small overlap means that some co-operation in decision-making and operation exists and large overlap means that considerable co-operation in decision-making and operation exists.
- Once everybody is satisfied about the way the circles are arranged these can be glued or stapled.

- Discuss the outcome of the exercise by asking participants to explain their drawing. Discuss the levels of existing co-operation, but also where co-operation is lacking. Ask what they learned from it for the future.

Hints

- The Venn diagram may also first be drawn in pencil and using an eraser to adjust the size or arrangement of the circles until the representation is accurate. When people are satisfied, the pencil drawing can be done again with a marker for easy reading.
- It will be interesting to find out whether for example men and women indicate different institutions. In order to find out, men and women may be asked to make separate Venn-diagrams or to use different colours for groups/institutions brought up by men and women. Always have people react to each other's outcome.
- In most communities one finds groups of people having less knowledge and therefore less access to institutions within and around the community. It is particularly important to get these groups involved. However, the facilitator should be sensitive to power structures and handle those carefully.

In one of the communities in Nepal a Venn diagram was made to map out institutions present in and around the village. After the exercise one of the people in Gajedi said: "We never realised that we have so many institutions around our village".

Using the Venn diagram to show all the institutions and people intervening in the water supply, helped the team in Cameroon to become at ease with the community. It reinforced the idea of self-reliance; participants were excited to realise the extent of power they could exercise in decisions and how much responsibility rests in their hands.

In a village in Cameroon the following information resulted from a Venn diagram:
 The Water Maintenance Committee recommends rules and tariffs. Nevertheless, enforcement has to first get the approval of the Village Administration. The Village Development Association's main function is to co-ordinate all development activities within the community, including water supply projects, under the umbrella of the Village Administration. It solicits assistance from community members and support from external organisations. It manages its money allocated to the water project autonomously.

Next steps

The exercise can be followed by making a strengths and weaknesses analyses of institutions. This may also reveal why some are known to everyone, while others are known only to a limited number of people.

See fact sheet 1, 4, 6, 9 and 20

Local knowledge: historical profile, popular sayings and oral histories

Summary

Building on local knowledge is crucial for sustainability of water supply services. If we ignore local knowledge of water sources, we may use a source that has a too low yield in the dry season. Certain tree species you propose for source protection may not grow in the area, and only people having lived there all their lives can tell you that. Different groups in a community may have quarrels of long standing. This may not hamper daily life communications, but can cause resistance against using the same water source.

In their eagerness to get your assistance people may not always come forward with their knowledge. They may fear that the information will lead to unfavourable decisions by you and your organisation. You will therefore have to make sure that people overcome their hesitance and be frank with you. Cross-checking information is important and groups bringing up issues should also be involved in finding ways to deal with it.

This tool helps to deal with issues of fact sheet 1, 4, 6 and 10.

Learning from the past: historical profile

Making up a historical profile helps understand what people consider to be major events and changes that took place in the past with regard to natural resources, population changes and changes in leadership. Understanding people's perception about the past also helps understanding people's current decisions. Having lived through certain experiences people may or may not want to do similar things or they may want to take decisions differently from in the past. A discussion about the advantages and disadvantages of the various changes and the impact they had on the community is very important. The exercise also offers the opportunity to start a discussion about possible strategies to solve problems by taking a look at how people dealt with changing situations in the past.

When talking about water supply, the historical profile should not be limited to the water supply situation, but provide in-depth information on issues such as how the water supply system came about, on the activities undertaken for capacity building and on water related events such as floods or droughts.

Objective

- To get insight into the type of changes that took place over time and their impact on people's present behaviour.
- To get insight into what people consider important events in their environment.
- To discuss the meaning and usefulness of experimentation.

Procedure and materials needed

- Get together with a group of elder men and women. Younger people may be invited to attend the session.
- Ask why it may be important to take a look at the past.
- Ask the group to dig into their memory and to tell others about important events that took place.
- Draw a timeline on a piece of newsprint and note down in key words what is being indicated. One of the younger people present may be asked to take on this task in order to increase their involvement in the discussion.
- Discuss for each of the events whether it prompted people to change behaviour or adapt their usual way of doing something. Also discuss whether the solutions they applied to deal with the changed situation were the right ones or whether they had to try out different solutions. Stimulate the younger people to be curious and pose their own questions.
- Discuss the use of the historical profile for the present situation.

Hints

Making a historical profile can also be used as an icebreaker.

Key questions to get going

Initial questions	How have people's lives changed over the last two generations? Which things are better than before, which are worse? Did the role of women/men change over time?
Social changes	What happened over time with regards to cultural heritage, religion, land issues, population, migration, diseases, etc.?
Economic changes	What happened over time with regards to employment opportunities, cost of living, food availability, sanitation, etc.?
Environmental changes	Was there any noticeable change regarding water availability and rainfall, soil fertility, soil erosion, water pollution, etc.?

Popular sayings

In all societies popular sayings can be found that deal with water. It is fun to ask a group of people, representing a cross-section of the community, to come up with as many examples of such popular sayings as they can. Each of them can be discussed by exploring its meaning and its applicability for the situation people find themselves in. Doing this people will provide a lot of information on issues such as community behaviour, the performance of a water committee, water related problems, the importance of water for cultural or religious purposes.

Objective

- To get a view on the importance of water in a certain cultural setting.
- To discuss water related issues in an informal way.

Procedure and materials needed

- Explain the procedure of the exercise.
- Carry out a brainstorm and ask the group to mention as many popular sayings related to water and sanitation as possible. Jot them down on a piece of paper.
- Once no new examples pop up, write all the sayings on cards. Where possible divide the sayings in two sentences and write each sentence on a different card.
- Hand out the cards to the people participating in the exercise and ask them, if applicable, to look for the person having the matching sentence.
- Ask the couples to explain the meaning of the saying and ask them to indicate and explain whether what is expressed in the saying has application in their community.
- Make some notes during the presentations and summarise the most important points.
- Check the validity of the summary and discuss the importance of this information for the diagnosis.

Hints

At the beginning of (community) meetings some people may be asked to role-play a saying. This will help to get the meeting started and at the same time stimulate discussion.

Examples of popular sayings from Guatemala:

- When the river makes noise, it is sure to carry rocks.
- To drown in a glass of water.
- If you take the jar to the fountain too often, eventually it will break.
- It is welcome as the rain in May.
- If the water is not to be drunk, let it flow.
- Not all waters are safe for drinking.
- Everyone wants water for its own mill and drought for someone else's.
- A mill without water can not work.
- Do not say bad things about the fountain from which you have taken water.
- Like fish in water.
- No one takes a bath in the same water twice.
- It felt like a jar of cold water.
- Never say "I will not drink from this water".
- Water refreshes those who are hot and is like fire to those who are cold.
- Lord behold me from clear waters and I will protect myself from turbid waters.

"Don't let run the water you will not drink' is exactly the opposite of what the popular saying states: 'Let run the water you will not drink', but in the case of La Sirena we can not afford to waste water now we are more people and there are still two more sections of the community that need treated water. We could give it to them if we make rational use of it". This is what the teacher Barbosa in La Sirena (Colombia) said.

People's memory, a hidden source: oral histories

In many societies oral tradition is very strong and knowledge and information are often passed on orally rather than in writing. This implies that people, in particular the elder ones, often have a lot of knowledge and historical information in their heads, which cannot be found elsewhere. It is worth taking time to sit with people and to listen to what they want to share. Probing often helps people to dig deeper into their memories and to get more details. An added advantage of listening to what people have to say is that it increases their self-esteem because what they know is being valued. It is useful to have a few community members join the session under the condition that they may only listen. They should not interfere in what the elder people say and may only ask probing questions.

Objective

- To help people build on local knowledge for sustainable solutions.
- To learn from the past and prevent mistakes made earlier.

Procedure and materials needed

- Ask and look around for names of elder people who have been living in the community for a long time and who might be willing to share their knowledge and ideas. Ensure that names of men and women are included.
- Contact these people and explain why their knowledge and ideas are worth listening to and documenting. Ask them whether they are willing to spare some time and if so, agree on a time and place to meet.
- If available, read historical documents. This will help formulating questions for probing.
- Get together for the session, explain the purpose again and ask two people from the audience to make notes of what will be said. Ask the others to listen carefully and probe where felt useful.
- Once you have the impression that the invitees feel at ease, ask them to recall the time when they were children and to describe what the community looked like at that time.
- Have their story built upon these memories, listen and probe. After having described a general picture, they may be asked to describe the water supply situation the way it was in their childhood and how it changed over time.
- Ensure that notes are taken, that the invitees are not interrupted and carefully listened to.
- Thank the invitees for their valuable inputs and explain how they will help the development activities.

Hints

- Take into account that written documents give the official story. People may have different perceptions on what happened in the past. Do not start a discussion about what is the right or wrong information!
- It may be very useful to visualise main elements of the stories through simple drawings and to put them in a chronological order.

Next steps

These information gathering tools should help you and community members to get a better view on existing problems and problem solving experiences in the community.

See fact sheet 1, 4, 6 and 10

Who decided? Pocket voting

Summary

It is useful to get some insight in decision-making patterns within the community as well as within households. This exercise describes patterns related to the implementation of the water supply system before the co-operation with the support agency started, but it may be adapted to suit any other (development) activity in the community. decision-making patterns may vary for different groups in a community. People may also have different perceptions about who took the decisions in a particular situation. Hence, the exercise should be done with different focus groups; men and women, better off and poor people. This is a handy tool particularly for the assessment of any other sensitive subject and when people are hesitant to state their views in public and when a quantitative result is of interest.

This tool helps to deal with issues of fact sheet 8. Checklist 3 helps to use the tool.

Objective

To get insight in decision-making patterns and in the possibly different perceptions community groups may have on this topic.

Procedure and materials needed

- Ask the group to mention people or groups of people that are involved in the implementation of the water supply project, whereby involvement means being informed, being asked for opinions and being allowed to make choices.
- Ask someone from the group or a local artist to make drawings depicting these groups of people on half A-4 size pieces of paper.
- Stretch a large piece of cloth between two poles or trees and pin these drawings in a horizontal row at the top of the cloth.
- Pin drawings of key opportunities and decision moments in a vertical row at the left or the right of the cloth. Check with the group whether these key opportunities and decision moments suit their situation or whether some need to be deleted or added.
- Pin open envelopes in each of the cells of the matrix that came into being by pinning the drawings.
- Provide each person with a number of voting slips. The number of voting slips should be a few times bigger than number of people or groups of people depicted on the horizontal row.
- Take the group to the other side of the voting cloth. Ask all group members one by one to go to the front side to cast their votes by indicating for each of the key opportunities and decision moments who is involved.
- As soon as everybody has cast his/her vote, ask someone to count the slips in each of the envelopes.
- Register the outcome on the outside of the envelope and discuss the voting results.
- Transcribe the results on a piece of paper for future reference.

Hints

- People or groups of people to be depicted in the matrix can include a group of well-to-do men, a group of well-to-do women, a group of poor men, a group of poor women, mixed groups, a male local leader, a female local leader, a religious leader, staff of a support agency, government staff.
- Drawings of key-opportunities and decision moments can be prepared in advance on the basis of information obtained through any of the earlier tools. You have to make sure that the drawings reflect the community's reality and that the type of water supply technology and the geographical situation are real.
- Should it not be needed to have secret balloting the exercise may also be simplified by sticking the drawings on a piece of wall paper. Each person can then be asked to indicate their opinion by using a marker to tick a mark on the paper.
- Pocket voting exercises can be done for information gathering on all kind of subjects, such as: which water sources are used for what purpose, where do different groups in the community go for defecation. Tool 20 describes a similar exercise for ranking of priority problems.
- Pocket voting, for example to get insight in the use of different water sources or in sanitation behaviour can also be used with children. Children can make the drawings themselves.

Types of key opportunities or decision moments may include:

- selection of the community to be served with water supply;
- receiving information about choices to be made;
- being asked to provide information;
- selection of the source;
- selection of the technology;
- selection of places for standposts or handpumps;
- decision on who will provide labour;
- decision on financial contributions.

Next steps

Pocket voting is a useful start for a detailed discussion on a sensitive issue. It allows people to react freely, without their social status being exposed.

In Hoto (**Pakistan**) the water is owned and managed by the community itself. While women are the ones who are largely responsible for domestic water works and some of the irrigation work, the men have traditionally been responsible for making decisions which affect the management of water resources. In the past the village elder and the Numberdar, the traditional leader who makes decisions regarding communal resources, have been responsible for the management of water in the community and for assuring that all members of the community receive an equal allotment of water.

See fact sheet 8 and checklist 3

Understanding the decision-making process and conflict management

Summary

At times, in particular when something unexpected happens, the management of water supplies requires decision-making by a community or its water committee. Whenever a decision is to be made, there is potential for a conflict. People may have different interests or different opinions that makes it difficult to agree. For a conflict to be solved it is crucial that people understand the decision-making process and get to understand each other's point of view. Only when this understanding is there people may be willing to give way on their own wishes and adhere to decisions. This tool is best used with the water committee, since the committee has to go through decision-making processes quite frequently. In addition the water committee is also the group that has to guide the community through decision-making processes. It will also have to explain to the community at large how decisions came about and deal with possible differences of opinion. Checklist 3 can be used to prepare for the use of this tool. It also helps to deal with issues of fact sheet 3, 8 and 14.

Objectives

- To create an understanding about the steps involved in decision-making.
- To create an understanding about how conflicts can arise and be solved.
- To create an understanding about the need to be transparent about how decisions were taken.

Procedure and materials needed

- Explain the purpose of the meeting.
- Ask the group members to recall at least three instances where they were involved in decision-making. These do not necessarily have to be related to water supply management. Ask them to describe the situation that was asking for a decision, the steps that were taken, the outcome, and what they liked and did not like about the decision-making process.
- Make notes and see with the group whether you can find some common elements in the descriptions of the various group members. Probe where you feel more information could be shared.
- Help the group to draw conclusions with regards to the decision-making process and the importance of proper decision-making to prevent or solve a conflict. You may guide the discussion by asking questions such as: who were the main actors? How could you tell people have different opinions? What were the main steps in the decision taking process? Where these the right steps? If not, what should have been done differently?
- Discuss the contents of the checklist with the group. Add or change where the group feels this is necessary.
- Finally discuss with the group members how they could help each other and the community to go through a proper decision-making process.

Next steps

This tool is of course particularly relevant when a decision is needed, for example, about an action plan, about setting tariffs or about a request from a neighbouring community to use the same source.

See fact sheet 3, 8, 14 and checklist 3

Are people satisfied? The ladder

Summary

Getting insight into how people value a level of service helps understand people's willingness to contribute or to get involved. If, for example, people do not highly value the water supply system in a community, they may not be willing to pay for its maintenance. If a support agency does not assist the community in achieving the service as agreed upon, people may lose confidence and not be willing to get involved with staff of the support agency. This tool provides a way to assess people's satisfaction with service levels. The exercise can be done with a mixed group of community members, but also separately with specific groups, such as men/women and well to do/poor people.

This tool helps to deal with issues of fact sheet 15

Objective

To assess the extent to which people are satisfied with the service level and to what extent they think the benefits outweigh the costs.

Procedure and materials needed

- Prepare a set of small drawings, depicting all kinds of potential benefits of a water supply system, such as the standpipe being close to the house, clean children, easy watering of cattle. Have some blank cards available.
- Ask the community members to take a look at the drawings and describe what they depict.
- Ask them to select those drawings depicting benefits they currently receive from the water supply system and to put the remaining cards aside. If a particular benefit is felt, but not yet depicted, ask someone to make an additional card.
- Ask the group to rate the degree to which, as a group, it is getting a particular benefit. They can do this by giving each benefit a score of between one to five beans or seeds as marks.
- Have the drawings put in the order of benefits scoring highest to benefits scoring lowest.
- Take the group members through a similar process with regards to costs they pay for the water supply. Costs may include time, money, efforts involved in bringing water to the homes or payments in kind.
- Ask the community members to take a close look at their marking and select the benefits that are worth the price they 'pay' in terms of time, efforts, money or anything else. If there are items for which they feel they 'pay' more than what they get in terms of benefits, seeds or beans can be removed. If there are benefits for which they are willing to 'pay' more than they do now, they can add beans or seeds.
- Discuss the outcome of this activity.

Hints

- You may also ask the group you are working with to indicate benefits and to make the drawings.
- Check your conclusions through in-depth discussions, since an outsider's interpretation may be completely wrong.
- This tool can also be used to assess to what extent people are satisfied about the level of support of an agency or about the performance of the water committee. The drawings may then depict issues such as technical support, the link to outside agencies and facilitation of meetings.
- The scoring can also be done on a household basis. Households may not all have similar perceptions on costs and benefits.

Next steps

The discussion deriving from the exercise may lead to a list of problems that can be used for further analysis and for subsequent planning for improvements.

See fact sheet 15

Bees and Lions: preparing for the selection of members of the water committee

Summary

A water committee is often seen as a bridge between staff of a support organisation and the community at large. It is meant to function as the body managing the water system on behalf of the community. However, most of the times, these committees function poorly or not at all. This is often due to the fact that members are not selected along clear criteria, leading to the selection of people who do not necessarily have the right qualities for the job at hand, and thus poor management results. For this reason, it is useful to make extensive efforts to identify skills and capacities required and the people who have them.

This tool helps to deal with issues of fact sheet 8, 9 and 18. Checklist 15 helps to use the tool.

Objective

- To make people realise the various tasks involved in being a local team member.
- To ensure that the team members selected have the right skills and capacities to fulfil these tasks.



A water committee presents itself

Procedure and materials needed

- Meet with a cross-section of the community and explain the purpose of the meeting.
- Refer to previous meetings in which the activities were explained and ask someone to recall the main activities and list them on a flipchart.
- Discuss the potential role of a local team or water committee in these activities.
- Divide the group in 5 small groups and give each of the groups a picture of an animal (bee, lion, dog, bird, or...)
- Ask the groups to list the skills and capacities of the animal on their picture and have the groups present the outcome of their discussion. Write them down on a flipchart.
- Have the group indicate which of the skills and capacities are needed to carry out the activities listed earlier and add any missing.
- Continue by discussing the need for a representative committee and by asking which skills and capacities can be found in women and/or men.
- Conclude the meeting by saying that the skills and capacities listed may help the community to select its members for the water committee.

Hints

- Preparatory to the meeting an artist may be asked to visualise a variety of tasks of a local team or water committee. Instead of writing the tasks on a flipchart the drawings may be put up making it possible for illiterate people to participate.
- Skills and capacities required may change over time and the selection of other members may be required.

Next step

The next step will be to help the community to select the people with the required skills and capacities.

For the selection of a caretaker a similar procedure can be used.

In Hasis (**Pakistan**) the community appointed a caretaker who was also supposed to work under the direct supervision of the Numberdar, the traditional village leader. This caretaker was selected in the annual meeting every year and the selection was based on the lowest bid for remuneration a community member wanted to be paid for. The tasks that the caretaker had to carry out were: to clean the tank twice in the winter and every week in the summer, to feed the tank with water regularly, to repair minor breakdowns of the tank, pipes and taps and to inform the Numberdar about major breakdowns. The Numberdar's duty was to gather the community members for major repair through the Zatoons, the village collector of fines.

See fact sheet 8, 9, 18 and checklist 15

Building a problem tree: looking for cause-effect relations

Summary

Looking for problem solving strategies that provide sustainable solutions requires a thorough analysis of the problems identified and their inter-relations. Technical problems often have underlying managerial problems. Solving these so-called root-causes, have wider and more sustainable impact on a problem situation. This tool helps a community to find its way to the root-causes of the readily visible problems. Through its visualisation it allows many people to participate and to give their input in the discussion. It offers scope for a discussion among people about their perceptions on how certain problems came into being and how they could be solved. The problem tree resulting from the exercise also helps people realise that managerial problems are often at the root of technical problems and that solving technical problems through technical activities is only a short term solution.

This tool helps to deal with issues of fact sheet 1, 6, 8 and 17.

Objective

- To help people gain insight into how problems are inter-related in order to help them to select the most appropriate problem to be solved.
- To create a forum for discussion about people's perceptions on causal relationships among problems.

Procedure and materials needed

- Explain the purpose of the exercise.
- Ask people to think about all the previous activities carried out and to list problems related to the management of the water supply system that were identified over time.
- Have each problem written separately and clearly on cards and display them on a wall in such a way that they are visible to everyone present.
- Put up a large sheet of wallpaper, pick out one of the problems and place it with a piece of tape in the middle of the wallpaper.
- Ask participants to identify direct causes of the selected problem from among the list of problems and to indicate their inter-relation.
- Then ask participants to identify direct effects of the selected problem and look for their inter-relations also. Place them at the appropriate place on the wallpaper.
- Repeat the last two steps for the remaining cards and look for cross-linkages.
- Visualise the inter-relations by drawing arrows between the cards.
- Discuss the outcome by taking a look at the nature of the problems at the bottom of the tree and of those higher up.

Hints

- Listing the problems may be done earlier, based on what was learned during previous visits. An artist or community members can be asked to make drawings of the problems on cards. Using cards with pictures rather than cards with written text will enable illiterate people to also take part in the exercise. Before starting the actual cause-effect analysis, check whether the pictures are understood in the same way by all those participating.
- You should allow people to come up with additional problems if they feel that the list is incomplete.
- The facilitator should be able to accept relationships indicated by the people, even though s/he does not fully agree. Probing will probably help understand people's logic.
- The exercise will at least take two hours. More problem cards means that more time will be needed.
- The group participating in the exercise should not be bigger than around 10 people, otherwise managing the discussion will become difficult.
- Should you not have access to a wall big enough to put up the wall paper, you can lay out the cards on the ground.

In Ceylan (**Colombia**) the caretaker said: "I am happy that the administrators and everyone else recognises that my work is difficult and that it involves great responsibility on my part. I see that I have made serious mistakes which have affected the management of the plant and I think I was one of those who benefited most from this exercise. Not so much for myself, because I already knew all this, but for the administration and the people in charge, because they did not know the system. For this reason there were some difficulties and when they found out they could judge better".

In Aguacatan, **Guatemala**, the president of the Central Council, recalling the work done to rehabilitate the system, explained: "when we were working on the repair of the system, we realised in the assessment meeting that there were other problems and we began to see what they were. During the talks many more problems surfaced and we said that it would be good to fix them too. So afterwards we made a work plan, in which we planned to look at the fee, new regulations and household taps, as well as at organising the community for maintenance.

Next steps

Once the analysis is done the most pressing problems can be selected for action planning.

See fact sheet 1, 6, 8 and 17

Past experiences and future challenges: the SWOT analysis

Summary

SWOT means Strengths, Weaknesses, Opportunities and Threats. An analysis of these four elements in a given situation gives a good view on the direction activities should take to improve this situation. This tool recognises that there are usually two different sides (positive and negative) to any given situation and it encourages discussion of both. Open, in-depth, focused discussions are facilitated because agreement must be reached to identify what is a strength, what is a weakness, where do we find opportunities and where do we have to deal with threats. Information obtained through a number of tools described earlier will help doing a SWOT-analysis.

This tool helps to deal with issues of fact sheet 6 and 8.

Objective

To help people analyse a situation in a systematic way in order for them to make a plan that is likely to bring about the desired results.

Procedure and materials needed

- Divide news print paper into 4 equally sized parts by drawing a horizontal and a vertical line.
- Write on top of each of the parts Strengths, Weaknesses, Opportunities or Threats.
- Identify with community members the topic for which the analysis is to be made, for example the functioning of the water management committee and write this on top of the news print paper, preferably using a different colour.
- Deal with each of the elements one by one by asking people to mention as many Strengths, Weaknesses, Opportunities or Threats as they can with relation to the topic.
- Discuss how they can avoid or deal with the Weaknesses and Threats by making use of the Strengths and the Opportunities.
- Make these ideas as concrete as possible and formulate them as activities once consensus has been achieved.
- Find out what external assistance is needed to deal with the Weaknesses and Threats that are not yet covered and formulate activities to be undertaken to get this external assistance.

Strengths	Those things that work well, the things that you are proud to tell others. The best aspects of a situation, issue or persons.
Weaknesses	Those things that do not work so well, the things that you would prefer that others do not know about. The negative aspects of any given situation, issue or persons.
Opportunities	The possibilities within or around the community for positive change. The chances to change things for the better.
Threats	The things that could easily worsen a situation. Limitations that stop change from happening.

Hints

- If you already used a number of tools, some of the Strengths, Weaknesses, Opportunities or Threats may already sound familiar to community members. This exercise can be a first step towards planning for improvement of the situation. Should there be many strengths and weaknesses, you may ask people to prioritise by asking them what they feel are the most important ones.

Next steps

This analysis tool is also a good step towards selecting areas for action to improve or strengthen a situation and subsequent action planning.

See fact sheet 6 and 8

The village of my dreams

Summary

This tool resembles Community Mapping. The difference is however, that when drawing a map of the community, the participants do not show reality, but how they would like their community to be. It is a good tool to have community members discuss their "dream village" and to develop a common vision. You can stimulate people to deal with all aspects in the community or to focus their dream on the water and sanitation situation in the community.

This tool helps to deal with issues of fact sheet 3.

Objective

- To get a view on what people consider the most ideal situation with regards to water supply.
- To help communities realise that they do or do not have a common vision.
- To create commitment towards bringing about improvements.

Procedure and materials needed

- Tell people that you would like to know what they consider to be a wonderful village, including with relation to water supply and water use.
- Explain that you would like everyone to have an input in drawing the map. Maps may also be made in homogeneous sub-groups. Results are likely to differ and this offers a useful starting point for discussion.
- Explain the use of materials, either local or brought along from the office. Although maps can be made using flipchart and markers, a more exiting way of having them made is by asking community members to use all kinds of material they can find in and around the house, like corn, flower, apricot nut, leaves and branches. The use of local materials also increases the chance that community members will use the tool again among themselves.
- Stress that you would like them to make a map that depicts the "village of their dreams", not as it is now.
- Ask them to first take a few minutes to dream and talk about it, whereby they also dream about their community in relation to the surrounding area. To facilitate the dreaming you may ask questions such as:
 - If you were allowed to rebuild your community, what would you do, what would it look like?
 - In what kind of community would you want your children to grow up?
 - What kind of improvements would you like to see that solve existing problems?
- Give people ample time and opportunity to draw their dream and take care not to guide them.
- Discuss the results by asking the group(s) to explain what they have drawn and list the major differences with the community as it is now. If the tool has been used with various smaller groups, compare the results and discuss the differences and similarities.

- Wind up by asking how the information from the map can be used in the near future.
- If the map was made on the ground using local materials, transcribe it on a piece of paper for future reference.
- Leave the map in the community and make a copy for use in the office.

Hints

When explaining this tool, make sure you do not raise false expectations. It has to be made very clear that this does not necessarily mean that the entire dream will come true.

Next steps

The next step would be to do a matrix ranking (tool 22), whereby the group who made the map or a representative group jointly develop criteria for prioritising the problem solving improvements.

See fact sheet 3

Matrix ranking of preferences

Summary

Ranking is a tool you can use to stimulate discussion whenever choices have to be made. These can be choices about deciding who is most in need of assistance, about what type of water supply services they prefer most or about the way the operation and maintenance fund is to be raised.

Using ranking as a means to make choices helps to make the decision-making process transparent, to get clarity on existing perceptions about advantages and disadvantages of various possible solutions, to identify key-constraints and opportunities and to discuss selection criteria. The way a ranking exercise is done can range from very simple to more complex. The description here starts simple, but once a weighing element comes in the tool becomes more complicated to use.

This tool helps to deal with issues of fact sheet 1 and 10. Checklist 12 helps to use the tool.

Objective

- To stimulate discussion about various solutions to choose from.
- To help community members make a well-considered choice.

Procedure and materials needed

- Determine with community members which problem they would like to solve first and explain the purpose of the exercise.
- List the various possible solutions to this problem.
- Have the group take a closer look at these various possible solutions and list the advantages and disadvantages for each of them.
- Have the group take a look at the advantages and disadvantages and help it to develop a list of criteria that a solution should meet. Criteria may include that the community should be able to implement the solution without outside help, or that the solution should benefit all households in the community equally.
- Should you have additional criteria you may add them to the list if agreed upon by the group.
- Draw up a matrix, putting possible solutions on the horizontal axis and the selection criteria on the vertical axis. Ensure that the wording is understood by everyone.
- Ask people participating in the ranking exercise to score either individually or as a group. For each of the criteria they can score which possible solution is best and scores highest, which one is second best and scores second highest etc. The highest score should equal the number of possible solutions (so if the number of solutions to be ranked is 4, that the highest score for any criteria is 4).
- Once all the solutions have been ranked against all criteria, add up the scores and have the group draw a preliminary conclusion.
- Should the group feel that not all criteria are equally important a weighing element may be brought in. This means that the most important criterion get the highest number, the second most important the second highest etc. The scores given are then to be multiplied by the number allocated to the criterion.

- Discuss the conclusion from the exercise carefully and allow people to voice their doubts about it. This may indicate that not all criteria were listed. Allow people to change their minds if they feel the final score does not really correspond to their feelings.

Hints

- This tool is among the most active and lively ones. However, it is rather complicated. Given its complexity, it works best if each step is explained and completed before the next step is started.
- This matrix ranking can be used if the number of possible solutions does not exceed 5 or 6. If the number becomes too high, people may in the end have forgotten the considerations they used for the first few solutions.
- The discussion on the scoring criteria to be applied is extremely important. Differences of opinion, for example among well-to-do and poor people or among men and women, are a good opportunity to discover that people may have different norms and values. Differences of opinion should not be covered over, and differences do not necessarily have to be resolved. It is more important that they are accepted, since this allows them to be dealt with.
- Making drawings of the options and criteria to be put in the matrix will stimulate participation by illiterate people.
- For sensitive issues individual scoring can be done anonymously. Instead of asking people to jot down their score they may drop their ballots in closed boxes or in envelopes, while others do not look.

In **Pakistan** the aim of a ranking exercise was to arrange problems in order. This helps to understand the problems and to solve them in a logical way. The requirement for this exercise is that the facilitator has to prepare flip-charts for ranking by listing problems, and adding pictures and illustrations beforehand. The amount of time needed depends on the length of the list of problems for ranking and the number of participants. It is not necessary for all participants to sit there during the exercise but it is important to be present when announcing results of the exercise. In Hasis during the ranking exercise a community meeting was going on in an orchard. The project team sat at a distance and pairs of villagers from the meeting came in turn to do the ranking and then went back to their meeting. This took about three hours with both the ranking and village meeting going on together side by side. The same technique was used in Hoto in the summer pasture of a village where people were busy cutting grass. Pairs of villagers came to do the ranking exercise and then rejoined their families to cut grass.

Next step

Once a solution has been selected to try out, action planning can begin.

See fact sheet 1, 10 and checklist 12

The rope exercise: understanding the need to join forces⁵

Summary

People may easily get frustrated by the idea that they can not alter the situation they find themselves in. The rope exercise allows community members to experience the frustration of people trying to fulfil their own objectives with their own limited means. It also makes participants realise that establishing a common objective and pooling resources by making best use of each other's qualities is a meaningful way to cope with development problems.

This tool helps to deal with issues of fact sheet 3.

Objectives

- To have people experience what happens if we all achieve our personal goals.
- To have people experience what it means not to be able to fully participate.
- To have people experience the power of establishing a common goal and pooling resources.

Procedure and materials needed

- Make 4 groups of 4 people.
- Have one of the members of each of the small groups blind-folded, have another one his/her hands tied and another one his/her feet tied. The fourth person remains 'normal'.
- Have each group stand on one corner of a square, some 3 meters apart.
- Tie a rope loosely around this square of persons.
- Put one of the following items in front of each of the groups, some two meters away: a bottle of water, some sticks representing a bunch of fire wood, a piece of fruit representing food and some coins representing money. While doing so explain out loud what it is that you put in front of them and that all groups should try to get hold of the item in front of them.
- Assign an 'advisor' to each of the groups from the people not being part of either of the 4 groups. If more people are around, ask them to act as observers.
- Have the groups start to fulfil their task.
- Play the game in three rounds of 5 minutes. During the first round talking is not allowed. During the second round members of the small groups may discuss about the strategy to follow. During the third and last round the advisor may be consulted.
- Once all groups have their item, stop the game, remove the rope and get everybody 'back to normal'.
- Ask the people that were blind-folded or had their hands or feet tied, how they felt during the game.
- Ask the others how they felt during the game.
- Finally ask the advisors and observers what they had observed.
- Discuss what can be learned from this game by asking the people to draw their conclusions.

⁵ Source: Lammerink, M.P. (Personal communication)



When joining forces much can be achieved

Hints

- You should really try to leave it up to the group to decide what can be concluded from the exercise and how this will influence their daily lives.

In **Kenya** a community meeting was used to do the so-called 'rope-exercise'. Through this exercise the project team wanted to make people realise that starting a project can be difficult because people have different interests and want the project to move in different directions. It also showed that all people are not equal, that all have different capabilities and talents and that pooling these will give the best result. The exercise was particularly important because it was done at the time the community was trying to find solutions for problems it had identified.

Next steps

The next step depends on the purpose you had in mind with the exercise. If done to make people experience what it means not to be able to fully participate, a next step could be to identify problems with all community members. If done to have people experience the power of establishing a common goal and pooling resources, a next step could also be to plan for action to achieve a common goal.

See fact sheet 3

The spiderweb: assessing and monitoring capacities in the community

Summary

The spiderweb is a tool for assessing the capacities of groups in a community, such as a water committee, within specific areas, such as management, linkages and networking, fund mobilisation and participation. It can be used for self-assessment by a committee or for assessment by the community. It asks the group being assessed to score their performance in these areas. This is not only a monitoring tool, it also helps build a group's self awareness. It invites the group to plan ways to strengthen its capacity.

This tool helps to deal with issues of fact sheet 1, 9, 15 and 18. Checklist 13 helps to use the tool.

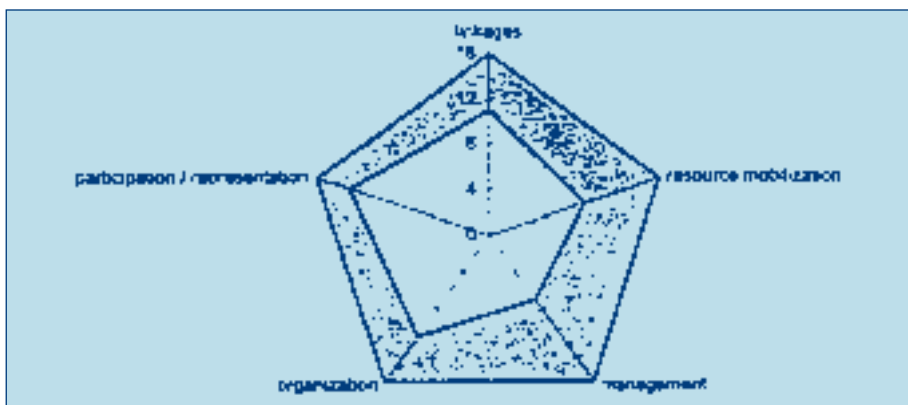
Objectives

- To increase the self awareness of the community or the water committee.
- To assess the performance of the community or water committee and identify areas for improvement.

Procedures and materials needed

- Start by asking the group: What is a spider? What does a spider do? How does it build spider webs? Why does it make spider webs? You may note down some keywords on newsprint paper.
- Ask how we can look at a spider and its web as a symbol for an organisation and why the strands /pillars are important in a web and similarly in an organisation.
- Check what the group considers to be important aspects for a strong organisation and list their answers.
- Cluster their answers in five main areas. You may indicate to the group that the above mentioned areas have been found to be generally important. There is probably some overlap with what the group indicated.
- These five areas represent the strands/pillars of the web. Make a drawing on the newsprint paper, on the blackboard or on the ground if paper and blackboard are not available.
- Discuss the importance of strong strands/pillars using the following questions: What happens if one pillar is weak or broken down? What would the spider do in that case? Why would it do this? What makes the pillars so important? What happens in an organisation if one pillar is missing or weak? How could this be repaired?
- Ask the group to take a closer look at each of the areas (now represented by strands/pillars of the web) and ask it to develop for each of the areas a continuum with five stages with descriptions from not so good performance to good performance.

- List their 'indicators' and number them 1-5. Also put the numbers 1-5 along the strands/pillars of the web.
- Have the group look at their indicators and ask it to assess its own performance for each of the areas by tick marking a number on the continuum. Make sure there is sufficient discussion among group members.
- Draw a line connecting the numbers on the various strands/pillars and see how the contours of a spider web appear.
- Discuss the picture with the group: What does this mean? Where should we improve? How can we improve?
- Finalise the exercise by listing some concrete activities to improve performance where needed.
- If you used a blackboard or the ground for the drawing, transcribe the outcomes into a notebook. .



Hints

- The group may have other symbols for an organisation. Should this indeed be the case and should it feel strongly about it, you may have to adapt the tool.
- The strands of the spider web symbolise the important characteristics of a sustainable community organisation.
- Be aware that there may be negative associations related to a spider web, such as being trapped in the web. Do not ignore these associations! Add some positive associations and make sure that the group is willing to continue to use the symbol of the spider web.
- This exercise is not a 'one-off' thing. It has to be repeated over time to find out whether performance improves. Over time the areas and indicators may change with the tasks and performance of the committee.
- Whereas the tool is described here as a self-assessment tool (the committee assesses its own performance), it can also be used by other community members to assess the committee.

Next steps

This is followed by action planning and the exercise can be repeated at various intervals to monitor for example the performance of a water committee.

See fact sheet 1, 9, 15, 18 and checklist 13

Action planning

Summary

Once a group is clear about the problems related to water supply management and about potential solutions and resources to address these problems, action planning can start. Together with the management body you try to systematically answer questions such as: What needs to be done? What are the resources we have available? When do we need to do it? Who will do it? How will we do it? How will we check that it is done and that it is done properly?

This tool helps to deal with issues of fact sheet 1 and 7. Checklist 15 helps to use the tool.

Objective

- To motivate the committee to clearly formulate objectives and to create commitment towards fulfilling these.
- To develop an action plan that is feasible and that the committee can and is willing to implement.

Procedure and materials needed

- Call a meeting with the water committee and explain why you asked them to come.
- Ask the committee members to recall the water management problems they identified, and the priority problem they selected. Ask them to recall the available resources they can use to solve the problem and the proposed solution. Make a note of the answers.
- Ask the committee members what they think an action plan is and what should be in such a plan.
- Draw up an outline for an action plan using a marker and a big sheet of news print. Below you find an example of a typical action plan. Write the problem and the proposed solution on top and make columns for the various elements of the plan.
- Discuss which activities need to be undertaken to achieve the proposed solution. List them in a logical sequence in the first column of the action plan.
- Discuss for each of the activities the resources required, how it needs to be done, who can do it, when it will be done, the minimum standards or indicators and who will check whether the activity is carried out properly. While discussing these issues you can fill in the various columns of the action plan.
- When the plan is ready, ask the committee to examine it closely to make an overall assessment of its feasibility. If needed adapt the plan according to their suggestions.
- Make sure that the action plan is presented to the community, so people remain abreast of what is going on. The committee members should be prepared to answer questions about the action plan.

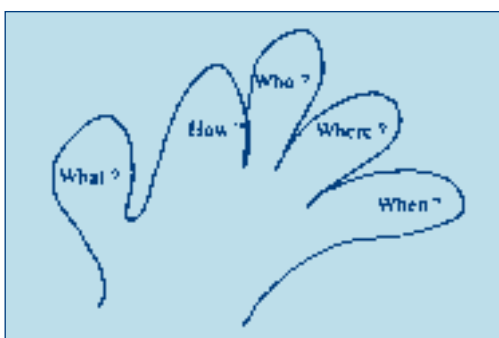
A typical action plan could look as follows:

Action Plan					
What are we going to do (problem to be solved):					
Objective (proposed solution to be implemented):					
Activities (what?) In chronological order	Resources?	When?	How?	By whom? (responsible person)	Indicators
1					
2					
3					
4					
Etc.					

Hints

- Always ensure that an action plan is made with those persons involved in its implementation.
- When recalling the priority problem, the available resources and the proposed solution you will need to refer to the outcomes of meetings where you used other tools.
- When drawing up an outline of a plan, make sure you use the terminology used by the committee. For example, if the committee says steps instead of activities, use the word steps.
- Sometimes outside assistance is required to solve a problem. If this is the case, formulating support requirements and hiring outsiders (tool 29) should be made part and parcel of the action plan.
- The action plan can be made more illustrative and colourful by using ribbons or coloured paper to make links between the various activities or steps or to link the available resources with the activities or steps.

In Nepal the principle of an action plan was explained using the drawing of a hand with five fingers representing five elements of an action plan.



When planning several questions need to be answered

Next steps

After action planning is complete, the committee can implement and monitor activities.

See fact sheet 1, 7 and checklist 15

Making a plan for operation and maintenance

Summary

This tool resembles the tool for Action Planning. However, it is focused on planning operation and maintenance. Whereas an action plan usually has a limited time span, operation and maintenance requires a long term arrangement. You need to help the water committee and the caretaker to systematically answer the questions such as: What needs to be done? What are the tools and finances required? When does the caretaker need to do what? What kind of support does s/he need and who will give this support? How will his/her work be monitored? This tool is helpful for making an operation and maintenance plan.

This tool helps to deal with issues of fact sheet 1 and 15. Checklist 14 helps to use the tool.

Objective

- To motivate the committee to clearly formulate the level of service the water supply system should provide.
- To develop a plan for operation and maintenance that is feasible and that the caretaker, with the support of the committee, can and is willing to implement.
- To create an understanding for the tasks of the caretaker and commitment of the water committee to provide support as and when required.

Procedure and materials needed

- Call a meeting with the water committee and the caretaker and explain why you asked them to come.
- Ask the group to draw a map of the water supply system, whereby they need to name the main elements of the system. If during a previous meeting a map has already been drawn, you may use this existing map.
- Discuss with the group what operation, revision, cleaning or repair each of the elements requires, including the replacement of certain parts. List all of these operation and maintenance activities.
- For each of the activities discuss how often it needs to be carried out and whether every time requires equal thoroughness. Greasing of a pump for example, may need to be done once a week for external parts, but only once a month for internal parts.
- Also discuss and list how much time the caretaker needs for each of the activities, when s/he needs assistance. Estimate the total time required on a yearly basis.
- List the tools needed and estimate the required spare parts and other materials such as grease or chlorine. The tools may include a wrench, a manometer, a chronometer and in some cases equipment for communication.
- Estimate the total budget required on a yearly basis, including salaries and the cost of purchasing tools, spare parts and other materials.

- Ensure that there is an agreement between the water committee and the caretaker. This agreement should describe the tasks of the operation and maintenance tasks of the caretaker and his/her fee and the support and monitoring tasks of the water committee.
- Calculate an average operation and maintenance or a cubic meter tariff by dividing the total budget required by the number of users or an estimated number of cubic meters the community will consume.
- If an operation and maintenance tariff is already in use, check whether the user contributions are sufficient to cover the costs or far too high. If they are not sufficient or far too high, the tariff needs to be adapted.
- Make sure that the operation and maintenance arrangement and the budget are presented to the community, so people understand the tasks of the caretaker and the reason for payment of the operation and maintenance fee.

Operation and maintenance activities may include: greasing hinge pins and bearings, opening valves, cleaning a tank. Checklist 14 provides an overview of operation and maintenance activities for various technologies.

Hints

- Always ensure that an operation and maintenance plan is made with the people involved in its implementation.
- Ensure that the agreement requires the caretaker to keep a record of expenditure.
- When setting a tariff, a community level discussion needs to take place on the possibility of richer people cross-subsidising poorer people (see fact sheet 12).

Next steps

After an operation and maintenance arrangement has been put in place, the work of the caretaker can be monitored. The water committee needs to feed-back the monitoring information to the caretaker. If necessary the committee needs to discuss how the caretaker can improve his/her performance.

See fact sheet 1, 15 and checklist 14

Neighbours may have good ideas: organising an exchange visit

Summary

An exchange visit is a powerful tool. It consists of facilitating small groups of community members to pay a visit to a community that has dealt with similar problems. An exchange visit provides community members the opportunity to take a structured look at issues important to them in another community, and look at how the other community solved problems similar to their own. They can get a broader view of problems and possible ways to solve them through suggestions from the host community. At the same time they may give useful feed-back to members of the host community.

This tool helps to deal with issues of fact sheet 18.

Objective

- To exchange and share ideas and experiences related to management issues.
- To provide community members with an opportunity to move away from their own situation and reflect on their problems as seen in a mirror.

Procedure and materials needed

- Ask people of the concerned communities to consider the idea of visiting their counterparts in another community. Communities may not necessarily be willing to visit or to be visited, and you have to actively look for consent.
- Plan the date, purpose, agenda and proceedings for the visits with all communities involved.
- Allow people to select their own representatives for taking part in the exchange. Facilitate the selection process, ensuring that people are selected according to clear criteria and that they are generally acceptable.
- Arrange for a pre-meeting with the people selected to agree on the focus of the visit, to prepare a checklist with points for discussion and observation and to agree on do's and don'ts while visiting the other community.
- At the time of the visit, ensure that the host community gets time to describe their own water project, the historical background, management systems, constraints and successes.
- Ensure that visitors are given the chance to introduce themselves, ask questions, seek clarifications and comment on what they have seen.
- You may also propose to change roles by asking visitors to outline the problems they saw in the host community and to ask them to propose solutions.
- Wind up by asking both the host and the visiting community what they learned from the other party and what type of advice they would like to give to or receive from each other.

Hints

- Depending on the size of the community and the distance to be covered to get there, the visit may take 1- 4 days.
- The checklist to be prepared on forehand may include environmental, technical, financial, institutional and user related aspects.
- Special arrangements may have to be made if women are to take part in the exchange visit, in particular with regard to staying overnight.
- Participation in an exchange visit can become a condition for becoming a committee member.
- If those taking part in a visit are chosen by consensus and are given an agenda by the community, they can be held accountable by other community members.
- Drawing village maps, whereby both the host and the visiting community members draw their village, can enhance discussions. It allows them to compare and discuss water supply systems and sanitary issues.
- The tool is particularly useful in the process of problem identification and to some extent prioritisation. It can lead to enhanced confidence in the communities and increased enthusiasm towards addressing management problems. It also increases communication within and among communities.

In **Kenya** quite some effort went into organising exchange visits between members of research communities. The objectives of these exchange visits were formulated as follows:

- to obtain a common understanding/perspective of problems;
- to expose management committee members to other management models used by other communities;
- to motivate the communities to undertake steps to improve their own management systems;
- to exchange views, experiences and discuss alternatives;
- tools used during the exchange visits include: village walk, group discussion, baraza (community meeting), observation and village mapping. Information was analysed using questions prepared in advance.

During the visits, village walks were led by the hosts which automatically created rapport as evidenced by women talking and discussing with their counterparts on general socio-economic aspects. Likewise, men discussed on general development, topography and opportunities and the challenges of their water systems.

Community members from Machakos expressed astonishment at the enormous amount of water available in Nyakerato. This made the people from Nyakerato realise they had not properly addressed their poor management system.

In Nepal women did not want to stay overnight after they discovered that there was not a single toilet in the community they visited.

Next step

After an exchange visit it is important that the new ideas are fed back to the entire community. A discussion should take place about how the new ideas can be incorporated in each community.

See fact sheet 18

Dealing with sensitive issues: popular theatre

Summary

This tool helps to develop awareness through the use of local media such as dance, song, drama and mime. By expressing feelings and telling a story, community concerns related to water supply issues are brought up. When dealing with sensitive situations, the use of puppets can be helpful to reach a wider audience and to receive feed-back. This can reveal contradictions and leave people with questions to reflect on and discuss.

This tool helps to deal with issues of fact sheet 12 and 13.

Objective

- To help people to better understand the situation they find themselves in.
- To encourage the audience to reflect upon and seek answers to community problems.
- To help overcome fears and build confidence.

Procedure and materials needed

- Talk openly of experiences or problems that are difficult to discuss with a group of people interested in staging a play or a puppet show.
- Discuss the issues in a wider social, economic or political context to shed light on the relationships and contradictions among problems.
- Use the information obtained for writing a script. Stimulate the group to come up with the issues, the characters they want to feature and the actual story.
- The script has to become a real story. A pedagogical series of monologues will be no more attractive from the stage or puppet theatre than in the classroom. Who has the story telling skills, to weave the issues into a story?
- Select people for the role-play or puppet show.
- Ask people to try hard to take on the identity of the person they play or the puppet they use.
- Rehearse the show with a small group playing the role of audience.
- Present the show to a larger group of the community.
- Promote a community meeting to discuss the show.



Fun and learning going together

Hints

This tool can also be used for monitoring and evaluation or for presenting information to other communities, other decision-makers or interested parties.

Next steps

What is to be done next depends very much on when this tool is being used.

See fact sheet 12 and 13

Formulating support requirements and dealing with outsiders

Summary

Communities will often need outside support for technical advice and investment capital for infrastructure construction, be it for building new systems or for rehabilitation or expansion of existing systems. When technical support is needed for which a private entrepreneur or an independent advisor is to be called in, communities need to be able to identify exactly what they want, how much they are prepared to pay and how they will monitor performance. Funding agencies require properly justified and documented proposals to consider support. Communities managing their own water supplies need to be able to deal with typical procedures for calling in technical support or for submitting requests for assistance.

This tool helps to deal with issues of fact sheet 16. Checklist 16 helps to use the tool.

Objective

- To build capacity at community level to formulate support requirements and transform these into requests for technical or financial support.
- To assist community members in developing monitoring mechanisms to ensure delivery of good quality support.
- To help community members identify and distinguish available external support organisations.

Procedure and materials needed

- Facilitate a discussion to help community members to clarify problems and clearly formulate the type of support they need and what they are prepared to pay in terms of money and/or efforts.
- Brief community members about the possibility of addressing a request for support to an agency or to a private entrepreneur.
- Help them to decide whether the support needed should be obtained from a support agency or from a private entrepreneur.
- Assist community members in obtaining and filling out forms or, in the case of the private sector, in obtaining information about the performance of the company or the persons eligible to do the job and the prices they charge.
- Ensure that the forms to request support are filled in properly and that a clear contract for any private entrepreneur is drawn up.
- Ensure that quality indicators are formulated and that it is agreed how the work will be monitored.

In order to help community members decide whether to contact a support agency or a private entrepreneur, information is required about:

- the types of services that can be delivered by them;
- their terms and conditions and prices they charge;
- the procedures to follow and the forms to fill in;
- the quality guarantee they can give.

Hints

- You may stimulate community members to contact neighbouring villages having experienced the involvement of an outsider.

Next steps

Once a positive response from the outsider is received, a contract needs to be signed and monitoring is to be arranged. It also has to be clearly spelt out what will be done in the case of a conflict between the community and the outside contractor.

See fact sheet 16 and checklist 16

Checklists

The checklists are supportive to the fact sheets and tools. Some checklists are meant to remind you of what to keep in mind or the procedure to follow, for example when organising a community meeting. Others are meant to refresh your memory when certain issues arise that need to be discussed or when some systematic observation or assessment is to be done. Of course you should select the most appropriate points of the checklist and add your own.

Checklists	Related fact sheets	Related tools
1. Organising a community meeting	1, 2, 5, 13, 14	
2. Facilitating a Focus Group Discussion	1, 3, 5	7
3. Decision making methods and conflict prevention	3, 8	15, 16
4. Indicators to assess water availability in the community	6, 10, 19	4, 6
5. Indicators to assess water transport, storage, treatment and waste practices	6, 19	4, 6
6. Identification of burdens and health risks	6, 11, 19	4, 6
7. Selection of the water source	10	
8. Measuring yield	6, 10, 15, 19	
9. Assessment of water quality	6, 10, 19	
10. Testing water quality and treatment options	10	
11. Discussing financial issues	10, 12	
12. Criteria for technology selection and system design	10, 16	22
13. Issues for monitoring	1, 15	4, 6, 24
14. Assessing operation and maintenance requirements	10, 16	26
15. Taking gender and equity into account	3	18, 25
16. Hiring outsiders	8, 16	29

Organising a community meeting

As indicated in the fact sheets, community meetings can be useful for various purposes. Sometimes information gathered by a small group, for example the water committee, has to be validated. Sometimes decisions to be taken may be so important that the water committee wants to seek a general consensus, or a financial overview needs to be given to the entire community to keep payment levels up. This checklist helps to deal with issues of fact sheet 1, 2, 5, 13 and 14.



A representative group of people

When organising a community meeting, the following is to be taken into account:

- Arrange for a time and venue appropriate for all people in the community and make sure that all groups within the community, including women, children and poor people can come.
- Make sure that all groups are informed and invited about the meeting. Do not assume too quickly that everybody will know! In particular poor people may live far from the bazaar or community hall where the announcement is posted and may not come to know easily.
- Make sure there is an agenda. This helps to prevent important issues being forgotten, and ensures that the effort of getting everyone together is fully exploited.
- Make sure that there is someone to chair the meeting, explaining its purpose and the points for discussion.
- Ask a committee member to present what has been done, and the question to be put forward to the community for a decision.
- Ensure that time is allowed for community members to pose questions for clarification and that serious attention is given to those questions.
- Should a decision be made about an issue, ensure that voting proceedings are clear to all and that everybody clearly understands the options that can be voted for.

- Wind up a meeting by asking a community member to summarise the discussion and the decisions taken. This allows you to see whether the discussion and decisions have been understood.
- Make sure that minutes are taken. This not only allows those who could not attend to catch up, it also allows community members to look back at previous decisions and the arguments used in favour and against certain options.

Don Angel Velazques from Agua Blanca, which is part of Aguacatan (**Guatemala**), explains the importance of general community meetings as follows: The meeting helps the beneficiaries of the water project realise what activities the Central Council and the local committees were doing. The fact that people are aware of problems and achievement helps when their collaboration is requested. They happily give it, because they are informed about what it is for.

In Campoalegre (**Colombia**) meetings were decentralised. These used to be held in the Community Room in the upper part of the community, but people from the lower part found it difficult to get there. For this reason it was agreed to have meetings in each area, either in a house or in a shop, so that everyone would have the opportunity to remain informed and to participate in discussions.

See fact sheet 1, 2, 5, 13 and 14

Facilitating a Focus Group Discussion ⁶

A Focus Group Discussion is a discussion focused on a specific topic and can be useful for exploring people's perceptions and practices, cross-checking information, testing new ideas or evaluating tested solutions. This checklist helps to deal with issues of fact sheet 1, 3 and 5, and to use tool 7.

Advantages of a Focus Group Discussion are:

- It is easily accepted and builds on traditional forms of communication.
- It is a cheap, quick and productive way of obtaining information.
- It is very useful for illiterate communities or community groups.
- It often produces unexpected findings.

Disadvantages are:

- Participants tend to agree with responses of other members of the group.
- Participants tend to indicate what is socially acceptable, rather than actual practice or belief.

Facilitating a Focus Group Discussion requires a great deal from you. You need to:

- be sensitive to what is being said and by whom;
- keep an eye open for 'accidental' questions, you did not think of beforehand, but that come to mind during the discussion;
- use open ended questions that allow people to give full answers;
- avoid yes/no questions;
- avoid using too many 'why'-questions;
- avoid embarrassing questions like: "What did you do about this?", instead ask "What do people around here do about his?"

Possible question line for a Focus Group Discussion to find out about participation of community members at the time of implementation of the water supply system:

1. I wonder if you all remember what happened when the water supply system was installed.
2. What did you feel about it?
 - about the people coming to your village?
 - about the way the work was organised?
 - about the activities people in the village were asked to undertake?
3. Do you think the water supply system has changed the life of people in this community? In what ways?

See fact sheet 1, 3, 5 and tool 7

⁶ Source: S. Caimcross

Decision making methods and conflict prevention

In a situation when a large part of a community will be affected, decision making is not always easy. There may be many different interests and opinions and not all people involved may voice them openly. People may either not agree on the way a decision is made or with the outcome. Such conflicts may lead to people ignoring or even obstructing the decision. A good understanding of how decisions can be made and of problems that might occur in the decision making process can help prevent conflict. This checklist helps to deal with issues of fact sheet 3 and 8, and to use tool 15 and 16.



Conflict prevention keeps people on a good footing

Decision making methods:

By *majority*: Can be done quickly, but only in case of decisions that do not have a very big impact.

By *drawing lots*: Can be done quickly and everybody has an equal chance to win. However, can only be used in case of decisions that do not have a very big impact.

By *consensus*: results from open communication and listening to each others' ideas and to conflicting opinions. It is a process of give-and-take which leads to all group members being more willing to adhere to the decision, even though it does not fully reflect their own ideas. Reaching a consensus may require some compromise by group members and can be time consuming, but usually leads to sustainable decisions.

By *delegation* (for example to a water committee): Some people are authorised to take the decisions, which may lead to quick decisions. However, the delegation needs to be representative and to have people who are knowledgeable rather than powerful.














By *authority*: the decision is made by a formal or informal leader. The decision may be made too quickly for others to understand what is happening. Power conflicts may also arise.

	Potential sources for conflict	Conflict prevention
1	The issue or situation that requires a decision is too vague and not clear to all people involved.	Ensure that clarity exists among all involved.
2	Not all people are convinced that a decision is required.	Check whether all people involved are convinced about the need for change.
3	A general lack of communication and information; not all concerned are invited and/or only a few people get the chance to voice their ideas.	Make sure that all stakeholders are present and give everybody a chance to speak out. It may be useful to split in small groups.
4	Hasty decision-making; without looking at all options properly.	Note down all possible options and weigh them before a final decision is taken.
5	Lack of clarity about the decision making method.	Ensure that everyone involved understands and agrees on the decision making method.
6	Animosity among members in the group that need to take the decision.	Ensure that the animosity is discussed openly.

See fact sheet 3, 8 and tool 15, 16

Indicators to assess water availability in the community

Before a water supply system is built or extended, the existing situation needs careful assessment. Information about existing water sources and water availability can be assessed by asking questions as well as by observation. Below you find a number of questions that can facilitate the assessment. This checklist helps to deal with issues of fact sheet 6, 10 and 19, and to use tool 4 and 6.

WATER SOURCE					
WATER	TWTR	TAP	SPRING	DAM	POHO
4					
T	MATER SOURCE (KUNTIJ)				
E	ROOF CATCH	WELL	HAND PUMP	OTHERS	QUESTION
R					Is there an other possible well nearby which can't be used by the homestead?
					YES NO
	DISTANCE TO SOURCE		ACCESSIBILITY		
	FAR AWAY	NEARBY	TIME PER TRIP	STEEP SLOPE	GENTLE PLAIN
					

The type of source and the distance to it can differ considerably

- What are the existing water sources and what are they being used for (household water, cattle, irrigation)?
- Do the different water sources supply sufficient water throughout the year?
- What is the distance to the nearest alternative water source if the main water source for drinking water runs dry?
- Are the people satisfied with the quality of the water supply? (Do they like the taste, is it good for washing, does a risk of contamination exist etc.?)
- Are the people satisfied with the quantity of the water supply? (Do for example long waiting times occur at collection points?)

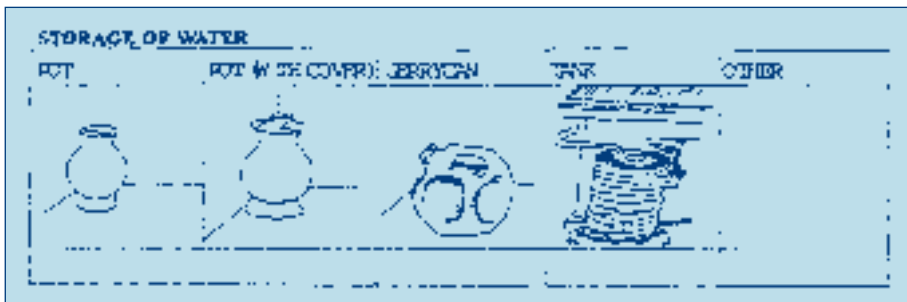
- Are the people satisfied with the continuity of the water supply? (Is rainwater storage sufficient for the dry season, Do daily interruptions in the piped water supply occur in higher locations etc.?)
- How much water is used per household? (How many trips to the water collection point are made daily and what is the type of container used?)
- What is this water used for (domestic use, cattle, gardening etc.)?
- Are proper laundry and/or bathing facilities available at the source or in the household?
- Are skin problems among children very common in the community?
- Are there many people with eye infections in the community?
- Is prevalence of diarrhoea high and have cases of cholera occurred?

Note: Skin problems and diseases are an indication of insufficient water use and sometimes reveal that insufficient water is available. High prevalence of diarrhoea entails a strong risk that water sources are contaminated. These diseases are therefore called proxy indicators.

See fact sheet 6, 10, 19 and tool 4, 6

Indicators to assess water transport, storage, treatment and waste practices

Water supply management also includes ensuring that the water source is sufficiently protected and that the water provided through the system remains clean till the moment of consumption. To ensure this maintenance and repair as well as hygiene promotion have to become part and parcel of management activities. To find out about the need for such activities, an overall assessment of collection, transport, storage, treatment and waste practices will be useful. This gives you an idea about the focus of the activities and the required changes in behaviour. This checklist helps to deal with issues of fact sheet 6 and 19, and to use tool 4 and 6.



Water can be stored in various ways

In the case of surface or spring water with a distribution system:

- What is the distance from the community to the source intake?
- Is it difficult to reach the intake?
- Can the tank be cleaned easily?
- Is the catchment area protected from erosion and contamination?
- Is the system without leakages and with sufficiently high water pressure throughout the day?

In the case of a well with or without handpump:

- Is the well protected from spill or surface water flowing into it?
- Is contact between the water and 'dirty' rope and bucket and animals prevented?
- Are latrines located at a sufficient distance from the well?

General:

- By what means is the water transported to the homesteads?
- Is water transported to homesteads in (open) containers or by animals or trucks?
- Do the people prevent the water from getting contaminated and spilt during the collection trip? How?
- Are containers cleaned before filling them and is this easily done?
- Does this rinsing water pollute the source?
- Is water stored at household level?

- What kind of containers are commonly used (materials, volume)?
- Are the containers covered?
- How is the water drawn from the container?
- Is the drawing device kept in a proper place?
- Is the water quality checked occasionally?
- Is the water chlorinated and is presence of chlorine checked at the tap or in the well?
- Do the people drink the chlorinated water or do they go for untreated drinking water?
- Do people treat the drinking water at home by boiling, filtering, adding chemicals, prolonged storage?
- Is drinking water boiled (at least for small children)?
- Is home treatment done properly and what are the problems related to home treatment?
- Are proper containers (clean and with covers) used after home treatment of the water?
- Where is solid waste disposed of?
- What is done with it after disposal? (buried, covered with soil, burned, etc.)
- How is waste water treated and disposed of?
- Is the disposal of household wastewater creating pools in the community?

See fact sheet 6, 19 and tool 4, 6

Identification of burdens and health risks

When trying to find out what motivates people to properly manage their water supplies, it is useful to help them identify burdens and health risks related to non-existing or badly functioning water supplies. A next step would be to see how well managed water supplies can help relieve those burdens and health risks. When identifying burdens and health risks, the following checklist may be helpful. You will need some knowledge about transmission routes of diseases in order to assess a situation you observe in terms of health risks. This checklist helps to deal with issues of fact sheet 6, 11 and 19, and to use tool 4 and 6.

Keep in mind	Places to go
Living conditions Housing types Health practices Activities carried out Communication facilities Source of water Water use Transport of water Water storage Number of latrines Condition of latrines Use of latrines Environmental sanitation Stagnant water	Households Water sources Water points Water transport routes Markets Schools Health post Places of worship Places for entertainment Shops



Looking at hygiene behaviour tells you something about potential health risks

See fact sheet 6, 11, 19 and tool 4, 6

Selection of the water source⁷

In some communities there is only one water source. In other communities however, multiple sources exist. If more sources can/are to be used, you will have to discuss with community members which source is best used for which purpose. This checklist helps to deal with issues of fact sheet 10.

Water sources	Description	Requirements	Costs considerations
Rainwater	Is usually clean when it falls out of the sky, except in areas with high air pollution. It does not contain germs or mud and is safe and pleasant to drink. If rain can be caught on a surface that is fairly clean it can be run off into tanks for storage.	The need of a clean, well-built roof, gutters and storage tanks to catch enough water to last through the dry months.	If you live in a region with high rainfall, you may find that collecting rainwater is cheaper than paying for piped water although the initial cost of a large tank is very high. Rainfall may also be very seasonal and only allow you to keep water for a few months a year.
Groundwater	Water that has seeped through sand and soil is generally considered to be clean and safe to drink. It needs to be extracted by means of borehole or well or comes to the surface as a spring. However, groundwater can also be contaminated, either through minerals or chemicals such as fluoride and arsenic or through leaking sewer lines or wrongly located/ built latrines.	<p>A well needs to be properly sealed off so that mud and germs cannot enter.</p> <p>One needs to get a view on how much water can be drawn from the well every day without the well drying up.</p> <p>If water contamination exists, measures are required to treat the water before consumption.</p>	<p>If the borehole or well is properly constructed, operated and maintained it will supply clean water as effectively as any surface water supply system and often at a lower price.</p> <p>If treatment is required additional costs will occur.</p>
Surface water	As the water in the river or lake runs over the earth it collects mud and germs, and needs to be treated before it is safe to drink. The type of treatment required will depend on the	<p>The most basic steps of water treatment consist of filtration and disinfection.</p> <p>Filtration is the process whereby the mud and silt is strained, usually by a bed of sand, from the water.</p>	Surface water needs to be drawn into a pipe, stored in covered tanks and then piped to taps. In many cases it may be necessary to pump it as well. This increases the cost (for the pump, petrol and an

⁷ Adapted from Mvula Trust: Guidelines to community managed water and sanitation services (module 4: choosing water supply systems)

	nature and extent of the impurities in the water.	Disinfection is the process whereby the invisible germs in the water are killed, often through the addition of chlorine or another chemical agent.	operator) and complexity of a water supply scheme. A treatment system will add to the costs, especially if a caretaker is to be hired.
Spring water	Water that emerges from the ground is called spring water. If it is fenced off and covered so that it is protected from pollution by animals and people, the water is quite safe.	Water from a spring is usually quite safe and can be consumed without treatment. In the case of source pollution treatment methods mentioned above are useful.	What is said for surface water is also valid for spring water.

See fact sheet 10

Measuring yield ⁸

If a water supply system uses surface or spring water, it is important to know about the yield of the source. This yield may differ throughout the year and over time. To get a good insight yield measurement has to be done, both at the end of the dry season and in the wet season. Furthermore, information needs to be asked from the community about changes in yield over the years they remember. This checklist helps to deal with issues of fact sheet 6, 10, 15 and 19.

Measuring yield of a spring

If the spring is small, its yield can be measured by timing with a watch how fast the out-flowing water fills a bucket: Find out how much water the bucket can hold, for example by filling it with water from a bottle of known volume. The flow in a spring is often affected by rainfall. Therefore it is essential to measure the yield both in the wet season and at the end of the dry season, when a spring is at its lowest level. Dry seasons differ over the years and the catchment area may be changing (due to human interference). Therefore it is also essential to find out about the spring's history by tapping local knowledge about it: did the spring ever fail? Is the present yield normal? Is the water sometimes turbid (in the wet season)? Posing these questions can be tied into a mapping session, during which sources are identified, and data about them collated.

Measuring the yield of a tap

The yield of a tap is an indication of the water pressure in the distribution systems. Measuring this yield can be done in the same way as described above by using a container and a watch. Taking these measurements at intervals over time will give an indication of the sustainability of the supply in terms of water pressure.

Measuring the yield of a borehole using groundwater

Measuring borehole yield is traditionally done at the time of initial development using a 'pumping test'. This entails pumping the borehole for a given amount of time and at the same time measuring the draw down of the water table. This requires specialist equipment beyond the means of a rural community. In addition, such tests provide a limited 'snapshot' of the conditions in the borehole at the time of drilling and give just an indication of how well the borehole can be expected to perform in the longer term. There may be a considerable difference between the water level in the dry and the wet season, particularly in shallow wells. This may however also occur in deep wells in areas where groundwater is also used for pumped irrigation. Eventually wells may even run dry for part of the year or become saline because of intrusion of salt water. With lowering water tables the effort to pump the water increases.

8 Adapted from Mvula Trust: Guidelines to community managed water and sanitation services (module 4: choosing water supply systems)

Monitoring the yield of a borehole is possible in a similar way as described above with a bucket and a watch. In this case however the pumping speed needs to be fixed. The depth to water can be measured by lowering a small device into the well. Combined with a good record keeping system the community can over time develop a sound knowledge of the behaviour of their borehole. This may help them to for example convince irrigation schemes to reduce pumping.

See fact sheet 6, 10, 15 and 19

Assessment of water quality

It's important to be able to detect whether water is contaminated before it is consumed in order to protect the health of the community. Once it is clear that water is contaminated prompt action and protective measures can be taken to prevent continued pollution and illness. Assessment of water quality requires continued attention. This checklist helps to deal with issues of fact sheet 6, 10 and 19.

Water can be contaminated by:

- suspended solids;
- organic wastes;
- faeces;
- nutrients;
- pesticides;
- heavy metals.

How can you tell the water might be contaminated?

- The water has an unpleasant taste, smell or colour.
- There are particles in the water or there is foam on the water.
- The water is brackish.

However, many forms of contamination cannot be detected unless the water is tested. This is in particular true for contamination through bacteria, heavy metals, chemicals or minerals.

Points to check when assessing the likelihood of groundwater contamination and to determine protective measures

- Can spilt water or surface runoff flow into the well or borehole because the well apron is broken, the well lining is poor, the headwall of the well is too low or the subsoil is fractured or has fissures?
- Are there pollution sources near the well or borehole such as latrines (within 30 meters), cattle puddles (within 10 meters) industrial dumpsites (within 200 meters)?
- Can animals (cattle, sheep, dogs) reach the well site?
- Is the drawing bucket properly placed to avoid contamination?
- Is the well, when not used, covered with a proper lid?

Points to check when assessing the likelihood of surface water contamination and to determine protective measures

- Is the surrounding area contaminated with faeces or fertilisers?
- Are there many sites upstream of the intake or collection point where human activities take place or where animals come in contact with the water?
- Are there any by-laws that forbid human activities such as bathing and laundry near the point of collection or intake, or by-laws that forbid allowing animals to come into contact with the water near the point of collection or intake?
- Are there industrial activities, dumpsites, or agricultural activities using pesticides upstream? (it is important to know which materials, chemicals, etc. are dumped in the water, so that this can be reported and the possible health effects be determined.)

Points to check when assessing the likelihood of contamination of a piped water system and to determine protective measures

- Is there a constant supply of water or is the supply intermittent?
- Are there leakages in the water pipes?
- Can the taps be operated without touching the mouth of the tap?

Note: when there is insufficient pressure in the water pipes, dirty and contaminated water may enter the pipes through leaks.

Points to check when assessing the likelihood of rainwater contamination and to determine protective measures

- Are the roofs and gutters free of dirt (leaves, bird droppings, etc.)?
- Does the collection tank have a lid?
- Is the collection tank cleaned regularly?
- Do people separate the water collected from the gutter during the first few hours of the rainy season?

Health related questions that give an indication of water quality

- During which season is diarrhoea most common?
- Have there been outbreaks of cholera, typhoid or diarrhoeal diseases in the last few years and did many people die during these outbreaks?
- Are there many people in the community with brownish, mottled teeth?
- Do you find many people with skeleton deformation?

Some diseases are the result of micro-organisms in the water, others are the result of too high concentrations of heavy metals, chemicals or minerals present in the water. If there is too much fluoride in the water, the teeth of the people get a brownish colour and when the fluoride content is very high, people may get deformations of the skeleton. High concentrations of arsenic cause cancer in the long run.

See fact sheet 6, 10 and 19

Testing water quality and treatment options

Reliable water quality testing is difficult to achieve, because the water quality particularly of surface water changes all the time. Taking a water sample is time bound and may not spot intermittent discharge of pollution upstream etc. Therefore a combination is needed of sanitary surveys and water quality testing. A sanitary survey is a systematic assessment of possible pollution that may enter the water upstream of the collection point. Testing requires the use of a test kit, for example to determine the amount of e-coli or the level of iron or arsenic. Test kits are usually available from the department in charge of water supply or from the UNICEF or WHO-office in your country. Here you can also get more information about acceptable levels of contamination and treatment methods. This checklist helps to deal with issues of fact sheet 10.

Should you indeed want to assist the community in testing the quality of the water, the following is important:

- select important points of the supply system and consumption system for testing, such as the intake point, the well or standpost, the storage pot;
- inform the community about the results of the tests;
- discuss causes of contamination and, in the case of unacceptable levels of contamination, contamination prevention measures with the community;
- plan preventive measures with the community, such as source protection around the intake, repair of the apron around the well;
- assist community members to implement these measures;
- arrange for regular water quality testing to assess the impact of the preventive measures;

If preventive measures are not available, for example when water is contaminated through iron, fluoride or arsenic, or when measures to prevent contamination are not effective, you will need to assist communities either in finding a new source or in determining water treatment methods. Water treatment at household level is possible for example through heating, chlorination and solar disinfection. The use of filter candles may also be feasible, provided they have an active silver coating on the inside. Household slow sand filtration is another option, with the complication that continuous flow is needed to ensure proper treatment. This is not easily achieved and therefore it is better to deal with this at community level either by introducing a water kiosk where treated water is sold, or by introducing treatment in a piped water supply. At the community level different treatment methods can be introduced ranging from pot chlorination in wells to multi-stage filtration. A description of these methods goes beyond the scope of this manual.

See fact sheet 10

Discussing financial issues⁹

When discussing financial arrangements, there are a number of questions that can help steer the discussion. Below you find these questions as well as potential answers. This checklist helps to deal with issues of fact sheet 10 and 12.

Key issues to discuss	Keep in mind
Which costs must be covered?	<ul style="list-style-type: none"> Payment of the caretaker, who is responsible for operation and maintenance in cash or kind Purchase of tools and spare parts Running costs for the water committee System enlargement Loan repayment
Which funds should be used?	<ul style="list-style-type: none"> Community taxes Interest from community savings Contributions from consumers for water and/or for maintenance Contributions from men and/or women Funds applied for externally
Which tariffs should be used?	<ul style="list-style-type: none"> Flat tariffs, i.e. the same for all households, irrespective of the amount used Flat tariff per consumer, i.e. payment depends on the number of persons in the household and not on actual amount used Tariff per unit of water drawn Low tariff for poor households, higher tariff for better off households Low tariff for the first few units per person, a higher tariff for subsequent units per person
How to collect contributions?	<ul style="list-style-type: none"> Community taxes to establish a separate water supply fund to deposit at the bank Contributions from consumers; through metered connections, Payments at the water point or weekly/monthly payment to the treasurer Write a proposal for external funding
When is it appropriate to collect contributions?	<ul style="list-style-type: none"> Monthly At the beginning of the fiscal year As and when required After a crop or other productive activity

⁹ Adapted from WHO: Operation and maintenance of rural water and sanitation systems (2000)

What to do with bad payers?	Analyse the causes for bad payment and act upon these causes Improve services Impose sanctions Organise a campaign to promote prompt payment
Where should the money be deposited?	Community account Special account in a bank In objects that can serve as investment
What should be taken into consideration to administer the funds?	Receipts for accounting Financial control Authorisation to draw money from the bank account Comments and recommendations of the users
Who should administer the funds?	Community committee Community accountant External accountant
How to pay to staff responsible for operation and maintenance?	In cash or in kind After a task has been fulfilled On a monthly basis Every year, after a crop or other productive activity

See fact sheet 10 and 12

Criteria for technology selection and system design¹⁰

When a new or additional system is to be built, many criteria influence the choice of technology. In this checklist these have been grouped into criteria dealing with affordability, acceptability and technical feasibility. Other books will probably use a different grouping while using similar criteria. If communities are to use and manage their own water supply system the selection of technology and system design needs to be organised in a participatory way. This checklist helps to deal with issues of fact sheet 10 and 16, and to use tool 22.

Affordability

- The community is able to contribute towards the construction costs.
- The community is able to recover costs for operation and maintenance (see also checklist 11).

Acceptability

- The technology will provide sufficient water, also for productive use if required.
- The technology will provide water of good quality for the purpose it will serve.
- The design of the system allows for equitable access to the improved supplies.
- It is convenient for men, women and children to use.
- Drawing water from it can be done in a culturally acceptable way.
- It is not likely to give rise to conflicts with neighbouring communities.

Technical appropriateness

- Spare parts are or can easily be made available.
- Operation and maintenance capacity is or can be made available.
- If needed, technical support is easily available.
- The technology and design can cater for increased future demand. If needed, extension can be easily arranged.
- The way water will be withdrawn from the environment is allowed within the existing legal framework.
- The technology will not lead to over extraction or other environmental hazards.

See fact sheet 10, 16 and tool 22

¹⁰ Adapted from WHO: Operation and maintenance of rural water and sanitation systems (2000)

Issues for monitoring

Community management aims at water supply services that are affordable, acceptable and technically sound. Monitoring community management therefore focuses on a wide range of issues. This checklist covers a number of issues, possible indicators and desired levels just to give you an idea. In practice community members will develop their own indicators and determine their own desired levels. Once it is clear what will be monitored the collection of monitoring information becomes the major activity. This checklist helps to deal with issues of fact sheet 1 and 15, and to use tool 4, 6 and 24.

Monitoring issue	Indicator	Desired level
Community organisation active ¹¹	Number of community meetings organised Account books properly kept Contact with District Water Supply Office	At least 2 per year Yes At least 4 times per year
Cost recovery	% of household paying regularly % of costs for O&M covered through household contributions % of household income spent on water supply	100% 100% < 3%
Satisfactory service level	Number of hours supply per day Water pressure E-coli contamination	 > 8 < 3 minutes to fill a bucket <0 faecal coliform per liter
Gender and equity taken into account	% of women among trained committee members % of low income households within 500m from the standpost % of high income households within 500m from the standpost	40% 90% 90%
Operation and maintenance capacity	Trained caretakers with tools Repair time following a breakdown Average time required for the purchase of spare parts	at least 2 < 2 days < 3 days

See fact sheet 1, 15 and tool 4, 6, 24

¹¹ If tool 24 has been used there will already be some indicators

Assessing operation and maintenance requirements¹²

Operation and maintenance requirements vary according to the technology used: a handpump requires different actions from a standpost which is part of a gravity system. A few definitions to start with:

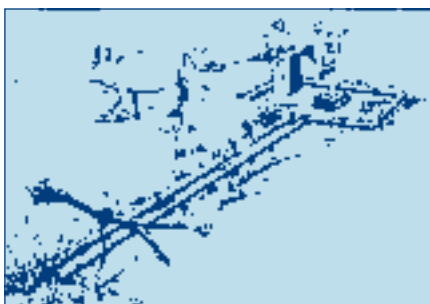
- Operation refers to the actual running of a system by ensuring fuel if needed, control of water points, opening valves, ensuring hygienic handling of water and water points.
- Maintenance can be preventive and then refers to pre-scheduled systematic inspection, repair and replacement to prevent breakdowns and leading to continued service levels. It leads to O&M costs that are evenly distributed over time, user satisfaction and willingness to pay.
- Maintenance can also be problem solving and then refers to maintenance undertaken only in response to breakdowns, leading to poor service levels, high O&M costs and user dissatisfaction.

Technology	Operation and maintenance requirements
Rainwater catchment	Clean filters Disinfect reservoir Ensure cover on reservoir Repair roof, corroded gutters and pipes Repair ferro cement reservoir
Handpump (groundwater)	Monitor proper use Check nuts and bolts and tighten if necessary Grease or oil all hinge pins, bearings and sliding parts regularly Clean and check well head, concrete apron, drainage area and repair cracks Measure output per stroke regularly and compare with expected output, detect and act upon causes if possible Count the number of strokes needed to get water flowing Assess water quality and test regularly if needed In case of contamination, locate and remove source of contamination and disinfect Disassemble the pump and check all parts for corrosion and wear and replace if needed
Well (groundwater)	Clean site surrounding the well Clean the drain Repair apron if cracks start to appear

¹² Adapted from WHO: Operation and maintenance of rural water and sanitation systems (2000) and WASH report no. 93 (1993)

	<ul style="list-style-type: none"> Repair the fence Rehabilitate well if lining starts to collapse Ensure proper use of rope and bucket: they can be kept off the ground Test water quality regularly and treat the water if needed
Gravity system with standposts (spring or surface water)	<ul style="list-style-type: none"> Ensure protection of spring and check spring box for leaks and cracks Check pipelines and valves for exposure and leaks Monitor proper use of the standpost Clean standpost, apron and drain, check concrete for cracks and repair where needed Measure pressure from the tap and compare with expected pressure, detect and act upon causes if pressure is too low Test water quality and treat water if needed
Diesel pump with distribution system (ground or surface water)	<ul style="list-style-type: none"> Operate engine daily, safely and efficiently Manage the stock of fuel and oil and ensure proper storage and no spillage Regularly check fuel, oil, filters and belts and adjust or replace if needed Regularly check and adjust alternator, starter, radiator, valves and injectors Conduct complete overhaul of engine and pumps at regular intervals See above for O&M requirements of the distribution system

The operation and maintenance requirements listed here are related to various technologies. The water committee and the caretaker have to make a clear agreement on who is responsible for what. Should a support agency have to be involved, this agency needs to be informed timely. This checklist helps to deal with issues of fact sheet 10 and 16, and to use tool 26.



One can tell what the operation and maintenance requirements are

Overall operation and maintenance tasks include ensuring a stock of spare parts and tools, good record keeping of maintenance work undertaken, addressing complaints of users, monitoring the work of the caretaker, ensuring payment of the caretaker.

See fact sheet 10, 16 and tool 26

Taking gender and equity into account

Throughout the tools and checklists it has been stressed that you need to ensure that all members in a community have a say and that it is always worthwhile to listen to the various groups in a community.

Men, women, better-off and poor people, old and young, high caste and lower caste people all have different experiences, perceptions and different strengths and weaknesses. Together they will make a picture complete and together they can make maximum use of available resources to improve the situation. This checklist helps to deal with issues of fact sheet 3 and to use tool 18 and 25. Your challenging task is to help people discover this by having them go through an experience such as the rope exercise (tool 23), but also by creating frequent moments of reflection on this issue.

These moments can be created when discussing a range of issues.

- Places and times to meet: people will not all be available at the same time and for the same duration. If not all people can be heard at the same time, ensure there are meetings at different times and that outcomes of sub-meetings are made known to each other.
- Why a meeting should be held in the vernacular language: ensure participation of people who have not been to school.
- The seating arrangement during a meeting: why should only men and better-off people sit in front?
- Decision making: at the household level and at the community level men and women will have different areas of control. Poor people may again be excluded from public decision making.
- Composition of the water committee: Did we really consider all people? Did we miss out on opportunities to recruit good members by leaving some people out?
- Technology and design: Is the opinion of all potential users heard and taken into account, so we can be sure that the best choices are made?
- Tariff setting and contributions: who earns money and for which purposes is this money used?
- Cleaning public places: who is usually in charge. Could and should existing patterns be changed?
- Who should be trained: do we select the same people over and over again?

See fact sheet 3 and tool 18, 25

Hiring outsiders

Outside support is sometimes needed. Maybe the system has to be extended, maybe a repair of a breakdown goes beyond the capacity of the maintenance worker and the committee. Tool 29 already indicates how you can assist communities to formulate their support requirements and to deal with outsiders. This checklist will give you some more insight in what to do when outside support is to be arranged and what to be cautious about. It helps to deal with issues of fact sheet 8 and 16, and to use tool 29.

Preparatory phase

- Make sure there is clarity about the outside services required.
- Invite various people or organisations to submit a proposal, a so-called tender, which describes how they plan to provide the service, at what costs and the guarantee arrangements they have.
- Insure a careful evaluation of the proposals by a number of people, preferably in a way that does not expose the name of the person or organisation submitting the tender (to prevent favouritism).
 - Check and correct the arithmetic
 - Are all the quoted rates reasonable?
 - Is the tenderer financially sound?
 - Does the tenderer have valid insurance?
 - Does the tenderer have a good record of similar work?
 - Is the proposed time period for the job reasonable?
- Select the best proposal and invite the tenderer to agree a contract. The contract should include a specification of the work to be done, the price that will be paid, the time within which the work will be done, the guarantee arrangements, what will be done in case of a conflict about the work or the payment. Through the contract the tenderer has become the contractor.
- Ensure that monitoring of the work is arranged: what will be monitored and by whom?

Implementation/construction phase

- Ensure regular checks and discussions on the work the contractor undertakes. It is useful to summarise the main points discussed and to record these for future reference.
- Ensure action is undertaken in case the contractor does not do what was agreed.
- Ensure a final inspection once the contractor indicates to be done with the job.

Maintenance

- After the work is completed, the contractor is responsible for repairing any defect in the works which may appear later due to the design not having been followed or to poor workmanship. Problems due to other causes are not the responsibility of the contractor.

See fact sheet 8, 16 and tool 29

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Project partner from 1999 onwards:

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Former project partners:

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Pan African Institute for Development West Africa (PAID-WA), until 2000

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Further reading, interesting websites and discussion lists

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Interesting websites

<http://www.irc.nl>

IRC's website addresses a range of topics relevant to the water and sanitation sector. It has a special section on community management, which includes stories from the field.

<http://www.worldbank.org/participation/>

Maintained by the World Bank's Participation Thematic team, the site provides information on key concepts, key documents, news and events, links, good practices and lessons learned, methods and (learning) tools, and a country index.

<http://www.mvula.co.za>

This website gives access to publications and documents, including Maru a Pula, the Newsletter of Mvula Trust .

http://nrm.massey.ac.nz/changelinks/par_res.html

This site lists an extensive number of papers, links and toolboxes on community participation in natural resources management.

<http://www.thewaterpage.com>

This is a site full of information on many issues related to water management, varying from cost recovery, to sustainability, to gender sensitising. It includes what was previously known as the African Water Page.

<http://www.scn.org/ip/cds/cmp/train.htm>

This website contains training material on community management and development

<http://www.wsp.org/English/index.html>

This website of the World Bank Water and Sanitation Programme has extensive information on their projects as well as other links.

<http://info.lboro.ac.uk/departments/cv/wedc/>

WEDC is a research and education centre on issues concerning water management. It's website covers a wide range of water and sanitation related issues.

<http://www.acdi-cida.gc.ca/CIDAWEB/webcountry.nsf/VLUDocEn/Indonesia-Storiesfromthefield>

For reference no. 6.

Interesting discussion lists

Water-and-san-applied-research

A list for discussion and information exchange relating to applied research in the water supply and sanitation sector. Intended for those with a research interest in the UK and developing nations, discussion focuses on priorities, funding and a range of multi-sectoral topics in the sector.

To join: Send to jiscmail@jiscmail.ac.uk the message: *join water-and-san-applied-research yourfirstname yoursecondname*

Send messages to: water-and-san-applied-research@jiscmail.ac.uk

PRA - Participatory Development

PRA-an email discussion list devoted to the topic of participatory community development. It is not limited to devotees of the PRA approach specifically, but embraces dialogue about any form of intentional change initiated and owned by community members.

To join: send to listserv@listserv.uoguelph.ca the message: *sub pra yourfirstname yourlastname*

Send messages to: pra@listserv.uoguelph.ca

IRC Publications

IRC's Technical Paper Series cover a wide range of subjects. The series integrates technical and non-technical issues, such as operation and maintenance and community management of water supply and sanitation services. Prepared jointly by IRC staff and consultants, these publications are written for those working in the community water supply and sanitation sector.

Ongoing work at IRC and related organisations is presented in the Occasional Paper Series. Project and Programme Papers comprise studies, field reports, evaluations and other documents emanating from projects or programmes in which IRC or its partners have been involved. Both series contain useful information of interest to a limited target audience. The Training Series provides practical information and knowledge for use in training of various target groups. The Reference Series includes directories, inventories, a thesaurus, glossaries and other information tools in support of technical information exchange for community water supply and sanitation. They are designed to assist both documentalists and technical staff with information collection, storage, retrieval and use.

"Keep It Working" is also available in Spanish. It is part of a series of IRC publications on Community Water Supply Management:

- Six videos on Community Water Supply Management from six different countries: Nepal, Pakistan, Guatemala, Colombia, Cameroon and Kenya.
- "The Seventh Video on Community Water Supply Management": A compilation of six country videos on the issue and an appeal to decision-makers to support rural communities in their efforts to manage their water supplies.
- A guide for managers of organisations working to support communities in the management of their water supplies (forthcoming).
- A State of the Art on community management of rural water supplies (forthcoming).

IRC also offers training, workshops and advisory services in the field of community water supply management. For more information you can contact IRC or visit the IRC website on Community Water Supply Management: <http://www.irc.nl/manage>

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