

## Social aspects

### IN THIS CHAPTER:

The identification of social problems that communities will need to resolve in order to establish enduring, independent and sustainable water supplies. These include:

- Considerations of culture – Established perceptions and existing management systems:
  - Access to water – Who gets to use the water?
  - Gender and technology – Who controls the technology, the use of water and the quantities that can be drawn?
- Responsibility and ownership – Who is responsible for the supply and who accepts ownership of the pump?
  - How much water may each person draw each day?
  - For what purpose may the water be used?
  - How much are people prepared to pay or contribute for the upkeep of the water supply?
- Operation and maintenance regimes – Effective maintenance/repair training
  - Who will participate and how many people will undergo pump maintenance training?
  - Who has the authority to pump water and who will undertake maintenance/repair work on the pump?

### **Making community water schemes work**

The sociological aspects of a community water supply are without doubt most critical to the success of an independent scheme. It is relatively straightforward to produce a technical solution, but much more complex to achieve a sociological solution that will ensure a permanent water supply. If the users are not in agreement on the management of a source of water and do not contribute or work together to operate and maintain it, the system will not remain operational in the long term. It is imperative that critical issues of operation and maintenance should be identified and

that communities discuss and resolve these issues in order to establish an enduring, independent and sustainable water supply.

If a source of water is to provide an on-going supply, communities cannot merely accept a system and expect either centralized maintenance/repair services or an implementing agency or donor to keep the supply operational. The initiation of a community water supply is invariably driven by services external to the community – whether they are conceived as a part of a national plan or through donor agency sponsorship. Whilst this may provide an immediate water supply solution, the abstraction and pump system will not be a lasting solution unless the users recognize their right to clean water and their responsibility to maintain it. No system will be sustainable unless the community is able to manage the system for itself. This means that all users must be prepared to take responsibility and to contribute to the operation, maintenance and repair of abstraction equipment. To this end, to ensure that everyone will adhere to decisions made, there must be a transparent decision-making process, even if the final decision is delegated to an elected committee.

Agreements and rules must be developed in regard to use, operation and maintenance/repair systems. This is particularly difficult where water is being abstracted from a communal water supply as no agreement will be achieved if there is not first agreement on the quantity of water that can be drawn by a family and the use that can be made of the water.

**Photograph 8.1.** Community meeting



A sustainable water supply will not be achieved by providing the hardware alone. More important than an immediate technical solution is a lasting sociological solution

Rules and regulations, important as they are, are useful only as long as they are supported and agreed by all the end users. There is little point in preparing agreements or constitutions if they are not popularly supported and thus unlikely to be followed.

For those engaged in community work, probably the most positive approach is to cultivate an atmosphere of dialogue and openness amongst the users. Only by acceptance and consideration of all issues, as they might apply to the entire community will there be any likelihood of common agreement leading to systems and strategies that will ensure a long and productive water supply.

Photograph 8.1 shows an informal community meeting led by staff of Dabane Trust discussing the water supply problem at Siyachilaba, Binga District, Zimbabwe.

## **Cultural perceptions, traditions and gender**

### **Perceptions and management**

Because of the need to preserve life in many societies in dryland areas where water is typically in short supply it is a traditional perception that no one should be refused access to water. However, the establishment of present-day infrastructure can no longer support this principle.

Water cannot be assumed to be ‘free for all’. Costs are undoubtedly incurred in any mechanized system, no matter how simple, from straightforward maintenance and repair costs to operator and running costs and possibly the payment of water authority levies.

Long-established customs in the primary use of water may also persist today. Particularly where water reserves are limited difficulties frequently arise between those who traditionally consider that preference should be given to livestock as users of secondary water and those who wish to use water for irrigation. Altercations can also arise between those who are of the opinion that there should be a flat rate for all users and those who make little use of the water and invariably expect those who make much use of the water to contribute appreciably more.

The use of water and responsibility for equipment is particularly important where water supplies are limited or where some members, but not all of the community operate water-based projects. Rules and regulations on quantities of water and the time when water can be drawn must be recognized and agreed on by the entire community and all those who wish to benefit from water related development schemes.

Invariably the expectation of a community based scheme will not only be for an improved water supply but also for an increased supply of water – broadly the anticipation will be water-for-all and for all purposes. The hopes are that there will be plenty of water for household use, in addition to water for livestock and for irrigation. Consequently, unless controls or limitations are placed on the use or quantities of water that can be drawn, a source of water may not last throughout an entire dry-season.

A community in an area where the groundwater drawn from boreholes was badly contaminated by mineral salts worked together to develop a source of water from sand-abstraction. The supply was not plentiful but it was clean and highly palatable. As a result people came from far and wide and from beyond the immediate community in order to draw such appealing water. They also came with donkey carts and large drums to the extent that demand exceeded supply. In order to maintain the supply agreements had to be reached on whom, when and how much water could be drawn at any one time.

In many societies it is a common sentiment that water is ‘God-given, and therefore ‘free’. Considerable division and dispute can arise within a community if not everyone is prepared to work for and accept responsibility for a source of water.

Typically, over a period of time, communities have evolved traditional management and use systems for seasonal and alternate water supplies that have no infrastructure. The management systems for these are often based around use by a group of close families or a clan within the greater community. Where relationships are already established and people have an innate trust of each other and the experience and tradition of working together, it may well be possible to develop these existing management systems and perceptions to the benefit of a new small-scale water supply scheme.

### **Gender – responsibility and use of water**

In many societies responsibility for the provision of water for domestic purposes rests with women. It is a traditional taboo that men and boys

### Free water?

The Dabane Trust worked with villagers at Dongamuzi, Lupane District, Zimbabwe to construct an earth embankment dam. Almost everyone within the community assisted with collecting rock and building materials and loading and unloading trailers, collecting water, consolidating the embankment, digging foundations, mixing building mortar, stone pitching the embankment and any number of support tasks to improve the dam and catchment area and to keep the equipment operating. When the dam was complete and the first water held in the basin, people brought their few cattle and livestock to drink. One particular cattle owner came with a huge herd. The community queried the right of this person to use the dam as he had not participated in the construction work and had sent no member of his family to assist. His response was that whilst he accepted that the dam belonged to the community and not to him, the water was *'God given' and free for the use of everyone.....*

should not be seen carrying water, although it is generally acceptable for them to collect water in drums by donkey cart. Where there is the possibility, many men prefer to water their cattle and small livestock at a dam rather than from a groundwater and handpump supply. Thus it is that men tend to visit handpump water supplies infrequently and may have little or no knowledge or interest in the operation and management of a domestic water supply.

As a result there are differing opinions between men and women on the use and requirements of water supply equipment. Consequently men generally have little incentive to maintain water supply systems, unless they have a direct need of the water. This has a negative impact on the maintenance and repair of equipment as generally women do not have access to independent funds to repair pump infrastructure and thus there is not the investment in maintenance and repairs that there should be.

To compound this situation, men often become interested in a source of water only if there is a significant technological development, such as an engine associated with the scheme. Men then wish to manage the scheme but frequently have little or no experience in water source use and either dominate the scheme so that women are unfairly disadvantaged or over-use and over-abstract water to the detriment of the scheme and the overall supply of water to the community.

Figure 8.1 indicates a group of women who have the management and control of their own water supply system rejecting the suggestion to upgrade their pump.



Baobab magazine

**Figure 8.1.** Accepting responsibility for a water supply

In areas of water shortage there is often a clash of interest between those who wish to use water for livestock and those who wish to use water for irrigation. This division often manifests itself on lines of gender. Men wish to keep livestock, often for status and ceremonial purposes rather than for food security or financial reasons, and women wish to have the direct use of water for food production for the family.

Particularly in areas of water shortage it is a common practice that a household will draw water from 3 or 4 sources in order to maintain 'a stake' in each where their presence is seen and where they are accepted. If one system is not working then there is a known, alternative supply and

A young man with no mechanical training prevented a group of 15 women from effectively operating their engine-powered pump unit and garden by insisting that he was the technical expert and the only one competent within the community to operate the engine – frequently with disastrous results. The women felt unable to challenge him so that in effect he high-jacked the scheme. By controlling the technology and totally restricting access, the women were completely dependent on him. Consequently the group only had irrigation water when he provided it and his lack of knowledge and mechanical ability increased breakdowns and decreased the financial income of the group.

The need for a number of sources of water to be available to one family and the cause of community water supply breakdowns may not always be immediately apparent. In the process of repairing a community handpump in the Tsholotsho District of Zimbabwe, a series of questions to a number of young girls unravelled an unusual response.

The pump which was being upgraded to a garden water supply was found to be full of small stones. Asked why this was, the girls replied shyly that they frequently dropped small stones inside the pump column because they liked to hear the sound the stones made as they ricocheted down the steel pipe. In response to the obvious statement that it was because of this that the pump had ceased to operate, their reply was that the breakdown was an added advantage as they then had to walk further to fetch water and so they then had less work to do during the day as they could justifiably stay longer away from home!

the option exists to draw water from another source. In fact it is often the case that when an abstraction system is not operative, rather than attend to the breakdown, both women and men will simply use an alternative source even if it is considerably further afield.

Issues such as these may present implementing organizations with a dilemma, whom should they be working with? Is it best to work with communities that are well organized and who demonstrate a wish to develop their own, improved water supply and are likely to make a success of it but who are ostensibly more affluent? Alternatively should development agencies undertake their work with communities that obviously have a need but are less organized, more divided and may be apathetic and without the motivation of the better established communities and are thus less likely to succeed?

### **Responsibility and ownership**

Throughout the industrially developing world there is a plethora of broken down infrastructure and failed development initiatives which have occurred simply because responsibility and ownership have not been understood or accepted. Until these issues have been discussed and agreed on, no one will be prepared to contribute to the maintenance or repair of equipment that they feel they may lose the use of.

Too often a water supply is viewed as the responsibility of the donor and belonging to the implementing agency. Until this perception is confronted and end-users are able to accept responsibility for a water supply the likelihood of a continuing scheme is poor.



The establishment of ownership and responsibility is thus vital. Without an effective management system and with the users not aware of the need for one, or not prepared for the responsibility, the beneficiaries will simply revert to existing or traditional systems, even if considerably more inconvenient and abandon any new equipment. With no agreement the community or clan will not feel sufficiently confident to take responsibility for infrastructure. The sentiment likely to be expressed to an implementing agency will be – ‘your pump has failed me’.

The use of water and responsibility for equipment is particularly important where water is in short supply or where some members, but not all of the community, operate water-based projects. Rules and regulations on quantities of water and the time when water can be drawn must be recognized and agreed on by the entire community and all those who wish to benefit from water related development schemes. Photograph 8.2 shows a water-point committee discussing water-point management with members of the community.

### ***Constraints to responsible ownership***

- Former centralized systems which were used to carry out routine maintenance and repair work with no apparent cost to a community. With this legacy communities are now reluctant to contribute to decentralized maintenance repair systems.

**Photograph 8.2.** Water-point committee holding discussions with the community



*Christian Aid / L. Orton*



- Stakeholders reluctant to make an investment or to donate funds or materials to repair equipment, for fear that it cannot be repaired or may be removed for major repair and ultimately not replaced.
- Concern regarding the cost of maintaining equipment.
- Poorly managed maintenance systems where repair equipment or spares are not available, maintenance or repair work is sub-standard or contributions are mishandled.

### **Possible solutions**

The fore-going can usually be distilled as need for a system that people are prepared to operate and maintain themselves, which they feel they can afford to maintain and which they understand. The following will provide a basis from which solutions can be developed:

- Low-cost, low-tech water supply systems that do not require specialist repair tools and are simple and cheap to maintain.
- A constitution or code of ethics developed by the community on issues relating to the water-point and the operation, maintenance and repair of equipment. Implementation of the agreement and penalties imposed on those in breach of agreements.

Table 8.1 is the format of a basic constitution developed by Dabane Trust that is modified through discussion with community groups to meet the requirement of a particular group of users.

Table 8.5 at the end of this chapter is a constitution translated from the vernacular that the Bekezela Garden group has drawn up for their own use. The garden is in Nkashe Village, Gwanda District, Matabeleland South, Zimbabwe. It should be noted the agreement addresses the topics shown in Table 8.1 as considered by the group. It is not a definitive, legal and binding agreement but is an agreement that has been thrashed out by the group and is expressed in a form that is acceptable to themselves and thus has a greater likelihood of being adhered to.

### **Water supply management**

In order to ensure a sustainable water supply for which people accept responsibility it is important that equitable agreement be reached on matters of management. Matters that must be addressed are:

- How many people and which members of the community are able to make use of the water supply.
- The purpose for which water may be used.

**Table 8.1.** Format for a governing document for groups supported by Dabane Trust

<b>Constitution</b>	
	<ol style="list-style-type: none"> <li>1. Name of Project/Group/Community</li> <li>2. Address</li> <li>3. Physical address</li> <li>4. Contact person</li> <li>5. Goal</li> <li>6. Objectives</li> <li>7. Membership</li> <li>8. Office bearers – duties – term of office</li> <li>9. Operational task</li> <li>10. Working relationships</li> <li>11. Banking</li> <li>12. Safeguarding infrastructure</li> <li>13. Meetings</li> <li>14. Bye laws</li> <li>15. Arbitration/disciplinary committee</li> <li>16. Amendment of constitution</li> <li>17. Vows</li> </ol>
	Name ID No. Signature

- How much water each person may draw each day.
- What the water will cost. Who sets the levy or tithe payable, to whom payments are made, where investments are made and signatories to accounts.
- Who is authorized to purchase pump spares and who has custody of pump components and spares and pump maintenance and repair equipment.
- Who has the authority to pump water.
- Who should be trained in pump maintenance and who is responsible for carrying out maintenance and repair work on the pump.

Although responsibility for providing water, keeping water clean and generally maintaining a water supply system have traditionally been devolved to women, fuller participation and decision making is usually barred to women due to other traditional beliefs regarding the roles of men and women in society. At the household and community level it is men who make the decisions and consequently in many developing countries women are not involved in initial planning. Women are perceived as water providers and as a result very few receive technical training and are not encouraged to maintain pump equipment.

### ***Constraints to effective management***

Many of the decisions that must be made on the management and sustainability of a new water-point will not be easily reached. It is more than likely that most of the users will expect a maximum amount of water at a minimum cost. With little experience in pump maintenance and repair, costing and budgeting and little surplus income it is more than likely that the levies set will be unrealistically low. Even reaching agreement on a levy will be a difficult decision for a community operating an efficient, brand new pump.

There can be obstinate malcontents in any community who often oppose the general trend, either due to a vested interest or for little more reason than self aggrandisement.

### ***Possible solutions***

- The establishment of a popularly elected committee that is sanctioned to implement agreements that will manage the water-point, whose decisions people will respect. Although meeting the aspirations of everyone within the community will be virtually impossible, the more that issues are discussed, the greater will be the success of the scheme and the likelihood of sustainability.
- Capacity building and training for members of the community who are critical to the scheme. The introduction of any technical development or development of infrastructure should be accompanied with capacity building and appropriate training provided to end-users.

Capacity building is essential to ensure that those who will use the water supply appreciate the need for effective management that will ensure sustainability.

- Each and every user of the water supply should understand the method of electing committee members, of reaching agreement and of adopting procedures.
- Efforts should be made to ensure that everyone appreciates the importance of appointing the most suitable and most competent person for the job and of overcoming vested interests when these are contrary to the sustainability of the scheme.
- Agreement must be reached on decisions relating to the management of the water supply and the need for equitable methods of utilising the water resource. As far as possible everyone should understand and agree with the decisions that are adopted, or alternatively should accept the limitations and penalties that can be imposed if in dissent.

It is important that everyone within the community is aware of all that is required to operate and maintain a successful water supply, the limitations of the supply and implications of poor management and leadership. The establishment of an effective water-point committee that is able to implement decisions and operate the water supply in the best interests of the community is an essential element of successful operation and maintenance. However it must be appreciated that any water-point committee will invariably be presented with many diverse demands and objections to their decisions and authority. A community or group that has a common purpose and a degree of unity will invariably have a greater chance of succeeding and maintaining a permanent water supply than a disorganized and disparate group.

A satisfactory management system may be difficult to achieve. Whilst specific skills training can be effectively provided in pump maintenance and repair this is not the case with community capacity building – either one has leadership skills or one does not. Of a survey of sand-abstraction water-points undertaken in 2003 (Table 7.2) 26% of the gardens reported an operational difficulty of one sort or another and of these 78% indicated that the problem was of a non-technical nature.

### **Operation and maintenance**

There are three principle pump and water supply maintenance systems - centralized, partly centralized and de-centralized. Depending on the number of installations and the level of service required, the resources available and the water supply/maintenance policies of a country or region each system has its advantages and disadvantages.

#### **Community groups most likely to succeed will exhibit:**

- A common interest – an understanding and agreement to work together.
- Commitment – determined people will take the initiative, do things for themselves and not wait around for things to happen.
- Experience in working together - prior involvement in a club or activity that has already brought them together.
- Support from the greater community – a group or project working against the common will, will not succeed.
- An ability to listen and/or evaluate technical instruction and advice.

<b>Table 8.2.</b> Dabane Trust 2003 survey		
<b>Survey of irrigated gardens</b>	<b>No.</b>	<b>%</b>
<i>Total number of gardens surveyed</i>	105	100
Gardens experiencing little or no operational problems	<b>78</b>	<b>74</b>
Gardens experiencing operational problems	<b>27</b>	<b>26</b>
<i>Gardens with a technical problem</i>	6	22
<i>Gardens with a sociological problem</i>	21	78

1. **Centralized system.** A fully centralized system undertakes responsibility for all water supply and system maintenance and repair needs of a community. Decisions on priority areas and communities, where to access and provide water, when and what to service/repair, are all undertaken by personnel exterior to the local community. Although service and maintenance can be undertaken regularly in rotation, breakdowns pose a problem and have to be attended to separately. Invariably such systems are expensive to operate with staff on call travelling from a central position when the need arises. Communities have no control over their water supply, spares and repair equipment are not available locally and no local person has the skill, the training or authority to service or repair equipment.
2. **Partially decentralized system.** This system generally has one or more members of the community trained in pump maintenance and repair. In an effective system one person, often referred to as a ‘pump minder’ has the responsibility for maintaining several water-points and has a team of assistants from within the community. Spares and service and maintenance equipment can be drawn from a central supply or are available locally and professional assistance can be called on in the event of a problem beyond the scope of the local maintenance team.  
A partially decentralized system might appear to have the advantages of both the centralized and the decentralized system. However in reality fast moving spares are often not available and maintenance/repair equipment which should be held at the village level can be far from the breakdown, or worse, cannot be found.
3. **Fully decentralized scheme.** This system is operated totally by the local community. Such a system is typically referred to as a village level operation and maintenance scheme, (VLOM). In its ultimate state the local community is entirely responsible for all operation,

maintenance and repair work. To be reliable and fully effective this requires appropriate equipment that a community with few skills and resources will be able to maintain and repair.

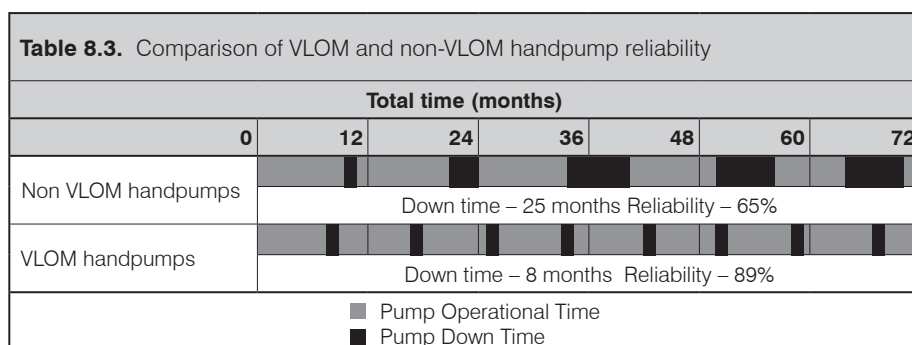
Ideally a VLOM system should be fully maintained and repaired with locally available tools and from materials that are readily available to the community. However many professionals still regard a system as VLOM, provided the users are able to obtain manufactured spares and equipment from an available source and to effect repairs for themselves.

In spite of often-limited community resources and skills a VLOM system will generally provide a more reliable water supply than a non-VLOM system as indicated in Table 8.3.

Important factors include which people and how many will be provided with pump maintenance and repair training. The more people who are trained the greater the likelihood of the community solving the problem and effecting a successful pump repair, however the position of a responsible water-point committee may then be undermined and responsible use generally less clearly defined.

Where there is a limited number of users a possible alternative is to place responsibility for pump maintenance and repair with a small core group but to provide training to everyone in the group. Table 8.4 indicates the success achieved with four training options adopted by the Dabane Trust over a ten year period from 1995 to 2005.

The success of a water supply project will ultimately come down to the ability of a community to develop a workable management system, the best an outsider to the community can do is to make people aware of the likely problems.



A problem frequently associated with non-working handpumps is the reluctance of the users to make regular payment for equipment maintenance. This may be due to:

- Non-availability of spares or sub-standard spares
- Insufficient or inadequate tools to effect satisfactory repairs
- Inexperienced pump minders providing poor quality repair/maintenance service or workmanship
- Pump minders over-charging
- Inadequate or poor collection of maintenance funds, misappropriated or badly managed systems of financing
- Other considerations are the cost of initial installation and more importantly the cost of repair, reliability and typical down time before equipment is brought back into service
- Inability to pay – Child headed households and those headed by old or terminally sick people have very little available finance

**Table 8.4.** Pump maintenance/repair options for a 15 – 20 member group

	Options	Success
1	No one trained	Minimum success
2	3 members trained	Good
3	Everyone trained	Better
4	Everyone trained with 3 responsible	Best

There is no single or guaranteed method of ensuring acceptance of all that is required of a community to ensure a sustainable, long-lasting water supply system. The best that can be done is to make each community aware of the complexity of successful water supply management and of the pitfalls likely to be associated with the operation and responsibility of equipment which one may use, but not own.

The best solution to such a situation is openness and negotiation. However, it is all too easy to simplify a solution. In their attempts to ensure success, development workers are sometimes guilty of offering solutions expecting them to work, and when they don't, either blaming the beneficiaries or themselves!



The Dabane Trust has found that women invariably have a better aptitude for repairing simple handpumps than men. Although training is provided to all participants of a water-point and garden group it is the all-women groups that have achieved the better maintenance/repair rate. This has been ascribed to women wanting to understand the pump, paying attention during training sessions and then when confronted with a technical problem, getting together, discussing and sharing ideas to work through the problem successfully.

However, the Dabane training team reports that in mixed groups, because of a perceived male technical talent, the women tend to leave the training to the men who inevitably pay little attention as they consider the pumps very simple and easy to fix. Unfortunately, when there is a breakdown, many men do not have the ability to effect a repair and consequently the water supply suffers.

### **The 'community car'**

It can be all too easy to prescribe a water supply management solution from a handbook or from the security of an office.

To put in context problems associated with managing a 'community asset' such as a community handpump, particularly for people who are not a part of a resource-poor community, it may be beneficial to think through the following:

Imagine a housing estate in an industrial country (the community) where no one has a car. A car is donated to the residents by a local car dealership. Now imagine the process of ensuring that everyone has equal access and deciding who gets to use it: when; how often; at what cost; who is responsible for it; who fuels it; where; who attends to breakdowns; who pays for them; and what to do when inevitably the management system collapses!

<b>Table 8.5.</b> A discussed and agreed list of rules and regulations translated from the vernacular	
<b>Constitution</b>	
Name:	Bekezela Garden.
Address:	Nkashe School, P.O Box 97, Gwanda.
Area / Place:	Nkashe Village, Ward 1, Mat South.
Contact Person:	Mr Richard Mpofu.
Goal:	Our aim is to plant / grow as much as possible, harvest and sell so that we can all get something.
Ways of achieving our goal (objective):	We are looking at planting all types of vegetables such as rape, onions, carrots, cabbage, spinach, beans, choumolia, and okra.
Being a member:	<ol style="list-style-type: none"> <li>1. You must be resident of Nkashe.</li> <li>2. There can only be one (1) member per family.</li> <li>3. You must not be formally employed.</li> <li>4. You should pay a joining fee of \$50.00.</li> <li>5. You should be able to participate or at least attend all meetings held.</li> <li>6. You should attend all the training lessons.</li> <li>7. You should have no outstanding debts to the community e.g. you should have finished paying for the dam.</li> </ol>
Duties of office bearers / leaders:	<p>Chairperson: leads the meetings.  Vice chairperson: assists the chairperson.  Secretary: time keeper and writes minutes.  Assistant Secretary: assists the secretary.  Treasurer: keeps money.  Committee members: help the heads / leaders.</p> <p>Leaders are chosen during the meeting by us the members of the group. They will lead for three years then elections for the new leaders will be held. If we feel we still need them on board they can be elected back to their seats.</p>
Operational tasks / ways of working:	<ul style="list-style-type: none"> <li>• There will be 3 teams for watering.</li> <li>• We will assist each other in watering our plants in case any one of our group member is not feeling well or in case of any emergency.</li> <li>• We will work together two (2) times a week on Tuesdays and Wednesdays. We aim to be at the gardens at 9 am and we will leave at 4 pm.</li> <li>• We will buy the seeds as a group.</li> <li>• Each member will be ploughing in their own beds.</li> </ul>

*(table continued on next page)*

## WATER FROM SAND RIVERS

<i>(Table 8.5 continued)</i>	
Working relationships / rules:	<ol style="list-style-type: none"> <li>1. If one has committed a crime, we will sit down and talk to them and they have to pay a fine of \$100.00. If they fail to pay then s/he is no longer a member of our garden.</li> <li>2. If one is resigning, s/he does not get anything because they will have just left.</li> <li>3. If one does not come to meetings then s/he will pay a fine of \$20.00 a day.</li> <li>4. If one is late for meetings s/he has to bring a fine of \$5.00.</li> <li>5. If one is no longer coming for lessons, there is need for that person to get advice from others. If that does not work then that person is cancelled from the group.</li> <li>6. If one steals from other members, that is if s/he is one of the members, we will sit down with them and talk to them, but if they continue then we are left with no choice but to chase them away from the group, but if one steals from the garden and is not from the group they are sent to court.</li> <li>7. If one dies from the group, we talk to the family members. A new member can join from the family and continue from where the deceased left, if no one is willing to join then we continue by ourselves.</li> <li>8. If one is not paying the membership fees as per agreement, we talk to that person and give them time to make that payment. If they fail to pay then we cancel them from the group.</li> <li>9. If we are not using the garden as we are supposed to we will look for assistance from people like the Councillor and Chief.</li> </ol>
How to handle money and its use (Banking):	<p>There is a membership fee of \$50.00 per person every month.</p> <p>In opening the book it will be signed by the chairperson, secretary, treasurer.</p> <p>Any two of the signatories will be the ones signing for the money at the bank.</p> <p>The money will be used in the case of:</p> <ul style="list-style-type: none"> <li>• Pump repairs – e.g., purchase of spare parts.</li> <li>• Any damage to the property in use – e.g., piping, taps or water tanks.</li> <li>• Buying seeds and pesticides.</li> </ul> <p>If it is less than \$2,000.00 we keep it at home but if it is more than that we keep it at the bank (P.O.S.B).</p>
How to handle our property:	<p>Tanks: Should always be clean and also filled with water.</p> <p>Tools: We will appoint someone to be in charge of the tools. If we lose tools all members of the group should pay for them. We should only use the tools in our gardens. We should not take them for personal use and not lend them to anyone.</p> <p>Pumps: In case of any damage all members should assist each other in repairing the pumps. We will also give each other time to use the pumps.</p> <p>Gate: The gate will only be opened by the one chosen to keep the keys during working days.</p>
Meetings:	A meeting of all members will be held on the last Wednesday of the month at 2 pm.
Signatures:	All members agree on what is written above.

## Chapter summary

Human interactions and perceptions may well be the greatest limitation to the success of any water supply initiative. There is a plethora of technical information and qualified engineers that can usually be called on to design and implement a water supply scheme. Technically a scheme might be a hundred percent suitable, correctly designed, properly installed and fully operational, but unless there is a will by the vast majority to work together, the scheme will not become a sustainable asset of the community and will not provide those in need with the benefits of an improved water supply.

Agreement and harmony in the operation and management of a scheme is the most important factor and whether or not this is achieved will invariably determine the overall success of the project. There will always be some members of the community who are estranged for one reason or another and it is frequently with these people where problems arise. Every effort should be made, therefore, to bring those who have become alienated back into the community as without this their dissatisfaction may well pervade the entire community to the detriment of all.

If circumstances permit, capacity building and training will help by making people aware of problems and difficulties that other communities have faced in similar situations. All one can do is to make people aware of the challenges, both technical and social but at this stage people must resolve problems themselves. Ultimately, the operation and management of the water supply is something that communities must work out for themselves and the success or failure of a scheme will depend on the outcome.